



CITY OF HOBART

AGENDA

City Planning Committee Meeting

Open Portion

Monday, 22 August 2022

at 5:00 pm

Council Chamber, Town Hall

THE MISSION

Working together to make Hobart a better place for the community.

THE VALUES

The Council is:

People	We care about people – our community, our customers and colleagues.
Teamwork	We collaborate both within the organisation and with external stakeholders drawing on skills and expertise for the benefit of our community.
Focus and Direction	We have clear goals and plans to achieve sustainable social, environmental and economic outcomes for the Hobart community.
Creativity and Innovation	We embrace new approaches and continuously improve to achieve better outcomes for our community.
Accountability	We are transparent, work to high ethical and professional standards and are accountable for delivering outcomes for our community.

ORDER OF BUSINESS

Business listed on the agenda is to be conducted in the order in which it is set out, unless the committee by simple majority determines otherwise.

APOLOGIES AND LEAVE OF ABSENCE

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City Planning Committee Meeting (Open Portion) held Monday, 22 August 2022 at 5:00 pm in the Council Chamber, Town Hall.

This meeting of the City Planning Committee is held in accordance with a Notice issued by the Premier on 31 March 2022 under section 18 of the *COVID-19 Disease Emergency (Miscellaneous Provisions) Act 2020*.

The title Chief Executive Officer is a term of reference for the General Manager as appointed by Council pursuant s.61 of the *Local Government Act 1993* (Tas).

COMMITTEE MEMBERS

Deputy Lord Mayor Councillor H Burnet
(Chairman)
Alderman J R Briscoe
Councillor W F Harvey
Alderman S Behrakis
Councillor M Dutta
Councillor W Coats

Apologies:

Leave of Absence: Nil.

NON-MEMBERS

Lord Mayor Councillor A M Reynolds
Alderman M Zucco
Alderman Dr P T Sexton
Alderman D C Thomas
Councillor J Fox
Councillor Dr Z Sherlock

1. CO-OPTION OF A COMMITTEE MEMBER IN THE EVENT OF A VACANCY

2. CONFIRMATION OF MINUTES

The minutes of the Open Portion of the City Planning Committee meeting held on [Monday, 8 August 2022](#), are submitted for confirming as an accurate record.

3. CONSIDERATION OF SUPPLEMENTARY ITEMS

Ref: Part 2, Regulation 8(6) of the *Local Government (Meeting Procedures) Regulations 2015*.

Recommendation

That the Committee resolve to deal with any supplementary items not appearing on the agenda, as reported by the Chief Executive Officer.

4. INDICATIONS OF PECUNIARY AND CONFLICTS OF INTEREST

Ref: Part 2, Regulation 8(7) of the *Local Government (Meeting Procedures) Regulations 2015*.

Members of the Committee are requested to indicate where they may have any pecuniary or conflict of interest in respect to any matter appearing on the agenda, or any supplementary item to the agenda, which the Committee has resolved to deal with.

5. TRANSFER OF AGENDA ITEMS

Regulation 15 of the *Local Government (Meeting Procedures) Regulations 2015*.

A Committee may close a part of a meeting to the public where a matter to be discussed falls within 15(2) of the above regulations.

In the event that the Committee transfer an item to the closed portion, the reasons for doing so should be stated.

Are there any items which should be transferred from this agenda to the closed portion of the agenda, or from the closed to the open portion of the agenda?

6. PLANNING AUTHORITY ITEMS - CONSIDERATION OF ITEMS WITH DEPUTATIONS

In accordance with the requirements of Part 2 Regulation 8(3) of the *Local Government (Meeting Procedures) Regulations 2015*, the Chief Executive Officer is to arrange the agenda so that the planning authority items are sequential.

In accordance with Part 2 Regulation 8(4) of the *Local Government (Meeting Procedures) Regulations 2015*, the Committee by simple majority may change the order of any of the items listed on the agenda, but in the case of planning items they must still be considered sequentially – in other words they still have to be dealt with as a single group on the agenda.

Where deputations are to be received in respect to planning items, past practice has been to move consideration of these items to the beginning of the meeting.

RECOMMENDATION

That in accordance with Regulation 8(4) of the *Local Government (Meeting Procedures) Regulations 2015*, the Committee resolve to deal with any items which have deputations by members of the public regarding any planning matter listed on the agenda, to be taken out of sequence in order to deal with deputations at the beginning of the meeting.

7. COMMITTEE ACTING AS PLANNING AUTHORITY

In accordance with the provisions of Part 2 Regulation 25 of the *Local Government (Meeting Procedures) Regulations 2015*, the intention of the Committee to act as a planning authority pursuant to the *Land Use Planning and Approvals Act 1993* is to be noted.

In accordance with Regulation 25, the Committee will act as a planning authority in respect to those matters appearing under this heading on the agenda, inclusive of any supplementary items.

The Committee is reminded that in order to comply with Regulation 25(2), the Chief Executive Officer is to ensure that the reasons for a decision by a Council or Council Committee acting as a planning authority are recorded in the minutes.

7.1 APPLICATIONS UNDER THE SULLIVANS COVE PLANNING SCHEME 1997

7.1.1 19 MORRISON STREET, HOBART AND ADJACENT ROAD RESERVE - OUTDOOR DINING INCLUDING FURNITURE PLN-22-419 - FILE REF: F22/82727

Address:	19 Morrison Street, Hobart and Adjacent Road Reserve
Proposal:	Outdoor Dining including Furniture
Expiry Date:	29 August 2022
Extension of Time:	Not applicable
Author:	Cameron Sherriff

RECOMMENDATION

That pursuant to the *Sullivans Cove Planning Scheme 1997*, the City Planning Committee, in accordance with the delegations contained in its terms of reference, approve the application for outdoor dining including furniture, at 19 Morrison Street 7000 and adjacent road reserve, Hobart for the reasons outlined in the officer's report and a permit containing the following conditions be issued:

GEN

The use and/or development must be substantially in accordance with the documents and drawings that comprise PLN-22-419 - 19 MORRISON STREET HOBART TAS 7000 - Final Planning Documents except where modified below.

Reason for condition

To clarify the scope of the permit.

PLN 6

Use of the outdoor dining space must not occur outside of the following hours:

12pm to 12am, seven days per week

Reason for condition

To clarify the scope of the permit

ENG 1

Any damage to council infrastructure resulting from the implementation of this permit, must, at the discretion of the Council:

1. Be met by the owner by way of reimbursement (cost of repair and reinstatement to be paid by the owner to the Council); or
2. Be repaired and reinstated by the owner to the satisfaction of the Council.

A photographic record of the Council's infrastructure adjacent to the subject site must be provided to the Council prior to any commencement of works.

A photographic record of the Council's infrastructure (e.g. existing property service connection points, roads, buildings, stormwater, footpaths, driveway crossovers and nature strips, including if any, pre-existing damage) will be relied upon to establish the extent of damage caused to the Council's infrastructure during construction. In the event that the owner/developer fails to provide to the Council a photographic record of the Council's infrastructure, then any damage to the Council's infrastructure found on completion of works will be deemed to be the responsibility of the owner.

Reason for condition

To ensure that any of the Council's infrastructure and/or site-related service connections affected by the proposal will be altered and/or reinstated at the owner's full cost.

ADVICE

The following advice is provided to you to assist in the implementation of the planning permit that has been issued subject to the conditions above. The advice is not exhaustive and you must inform yourself of any other legislation, by-laws, regulations, codes or standards that will apply to your development under which you may need to obtain an approval. Visit the Council's [website](#) for further information.

Prior to any commencement of work on the site or commencement of use the following additional permits/approval may be required from the Hobart City Council.

BUILDING PERMIT

You may need building approval in accordance with the *Building Act 2016*. Click [here](#) for more information.

This is a Discretionary Planning Permit issued in accordance with section 57 of the *Land Use Planning and Approvals Act 1993*.

OCCUPATION OF THE PUBLIC HIGHWAY

You will be required an occupational licence for use of Hobart City Council highway reservation (e.g. outdoor seating, etc). Click [here](#) for more information.

You will be required a Permit to Open Up and Temporarily Occupy a Highway (for work in the road reserve). Click [here](#) for more information.

GENERAL EXEMPTION (TEMPORARY) PARKING PERMITS

You may qualify for a General Exemption permit for construction vehicles i.e. residential or meter parking/loading zones. Click [here](#) for more information.

WORK WITHIN THE HIGHWAY RESERVATION

Please note development must be in accordance with the Hobart City Council's Infrastructure by law. Click [here](#) for more information.


FEES AND CHARGES

Click [here](#) for information on the Council's fees and charges.

DIAL BEFORE YOU DIG

Click [here](#) for dial before you dig information.

Attachment A: PLN-22-419 - 19 MORRISON STREET HOBART
TAS 7000 - Planning Committee or Delegated
Report ↓ 

Attachment B: PLN-22-419 - 19 MORRISON STREET HOBART
TAS 7000 - CPC Agenda Documents ↓ 

**APPLICATION UNDER SULLIVANS COVE PLANNING SCHEME 1997**

Type of Report: Committee
Committee: 22 August 2022
Expiry Date: 29 August 2022
Application No: PLN-22-419
Address: 19 MORRISON STREET , HOBART
ADJACENT ROAD RESERVE
Applicant: Yvette Neilson (AVC Operations Pty Ltd)
Level 3, 616 St Kilda Road
Level 3, 616 St Kilda Road
Proposal: Outdoor Dining including Furniture
Representations: Nil
Performance criteria: Use; Public Urban Space

1. Executive Summary

- 1.1 Planning approval is sought for Outdoor Dining including Furniture, at 19 Morrison Street and Adjacent Road Reserve, Hobart.

1.2 More specifically the proposal includes:

- The use of part of the existing Brooke Street highway reservation adjacent to the Telegraph Hotel for outdoor dining/drinking, along with the installation of permanent seating, tables and screen surrounds to the outer sides of the space.
- The applicant describes the application as: 'The erection of external outdoor footpath furniture. Furniture is temporary in nature and is proposed to remain outside for the duration of the licensed occupation. Patrons sitting outside will have the opportunity to purchase food & drinks from inside the venue and take outside to sit on the street furniture. Additionally menus will be available at the tables for patrons to order from and which staff will service. The street furniture is proposed to occupy approx. 49 sqm of floor area, however the operator will require shared street path access from the building to the outdoor furniture to service food & drinks.'
- The proposed furniture consists of two lots of four tables and eight bench seats (two per table); with a three-sided, black powdercoated aluminium-framed barrier screen to 1500mm in height, incorporating clear perspex in its upper 600mm and timber paneling below. Planter boxes at both ends and in the centre of the dining areas are incorporated into the screen barrier structure. There is a gap of approximately 2.6m between both outdoor dining structures, corresponding with the entrance to the hotel. The area covered by each overall structure is 19.7m² (8.2m x 2.4m).
- All proposed furniture is to be fixed securely to the ground and all are to be constructed to account for the slope of the footpath and allow for level seating.
- The ability to utilise and occupy the outdoor space is proposed to be limited to between 12pm and midnight, seven days per week.

1.3 The proposal relies on performance criteria to satisfy the following standards and codes:

1.3.1 Activity Area Controls (Use)

1.3.2 Public Urban Space (Outdoor Dining Furniture on the Cove Floor)

1.4 No representations were received during the statutory advertising period between 15/7 and 29/7/2022.

1.5 The proposal is recommended for approval subject to conditions.

1.6 The final decision is delegated to the City Planning Committee, because the proposal involves development within and use of Council's highway reservation.

2. Site Detail



Fig. 1: Aerial view of the subject property and surrounds (Source: Council ArcGIS).

- 2.1 The subject site (Figure 1, Plate 1) is the longstanding Telegraph Hotel on the corner of Brooke Street and Morrison Street, and the associated area of adjacent highway reservation along its Brooke Street frontage. The corner hotel features streamline deco architecture and externally is largely intact with aesthetic variations over the years. The site adjoins the mixed use restaurant and visitor accommodation building at 8 Brooke Street and multiuse Gibson Mill building at 17 Morrison Street which contains uses such as a restaurant, cafe bar, accommodation and office space. Directly adjacent across Morrison Street is a night club and bar and adjacent across Brooke Street is the existing ship chandlery, tourist hire business and hotel.



Plate 1: The Brooke Street frontage of 19 Morrison Street, along which the proposed outdoor dining furniture is proposed to extend. Note in the background the very similar outdoor dining structure to the one proposed, which is further along the same street outside 8 Brooke Street (Source: Planner's photo).

3. Proposal

- 3.1 Planning approval is sought for Outdoor Dining including Furniture, at 19 Morrison Street and Adjacent Road Reserve, Hobart.

3.2 More specifically the proposal is for:

- The use of part of the existing Brooke Street highway reservation adjacent to the Telegraph Hotel for outdoor dining/drinking, along with the installation of permanent seating, tables and screen surrounds to the outer sides of the space.
- The applicant describes the application as: 'The erection of external outdoor footpath furniture. Furniture is temporary in nature and is proposed to remain outside for the duration of the licensed occupation. Patrons sitting outside will have the opportunity to purchase food & drinks from inside the venue and take outside to sit on the street furniture. Additionally menus will be available at the tables for patrons to order from and which staff will service. The street furniture is proposed to occupy approx. 49 sqm of floor area, however the operator will require shared street path access from the building to the outdoor furniture to service food & drinks.'
- The proposed furniture (Figures 2 and 3) consists of two lots of four tables and eight bench seats (two per table); with a three-sided, black powdercoated aluminium-framed barrier screen to 1500mm in height, incorporating clear perspex in its upper 600mm and timber paneling below. Planter boxes at both ends and in the centre of the dining areas are incorporated into the screen barrier structure. There is a gap of approximately 2.6m between both outdoor dining structures, corresponding with the entrance to the hotel. The area covered by each overall structure is 19.7m² (8.2m x 2.4m).
- All proposed furniture is to be fixed securely to the ground and all are to be constructed to account for the slope of the footpath and allow for level seating.
- The ability to utilise and occupy the outdoor space is proposed to be limited to between 12pm and midnight, seven days per week.

3.3

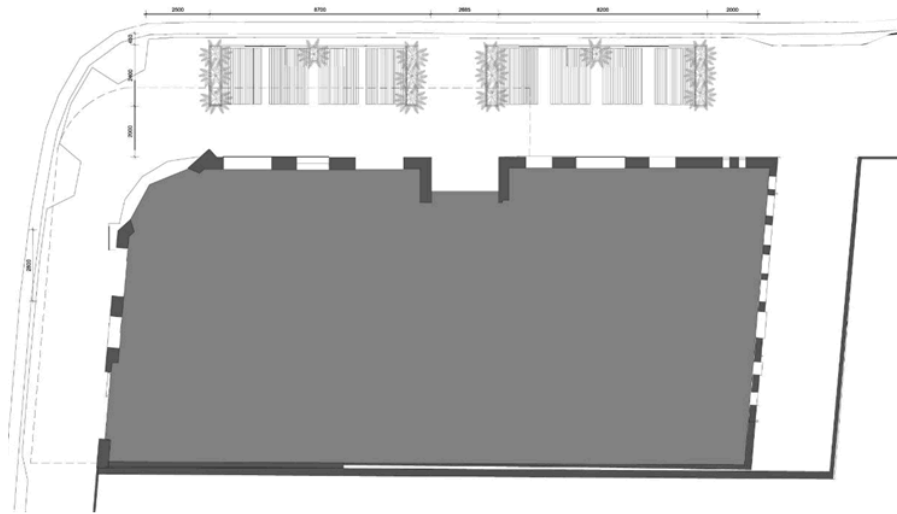


Fig. 2: Site plan of the proposed outdoor dining/seating area (Source: Application Documents).

3.4

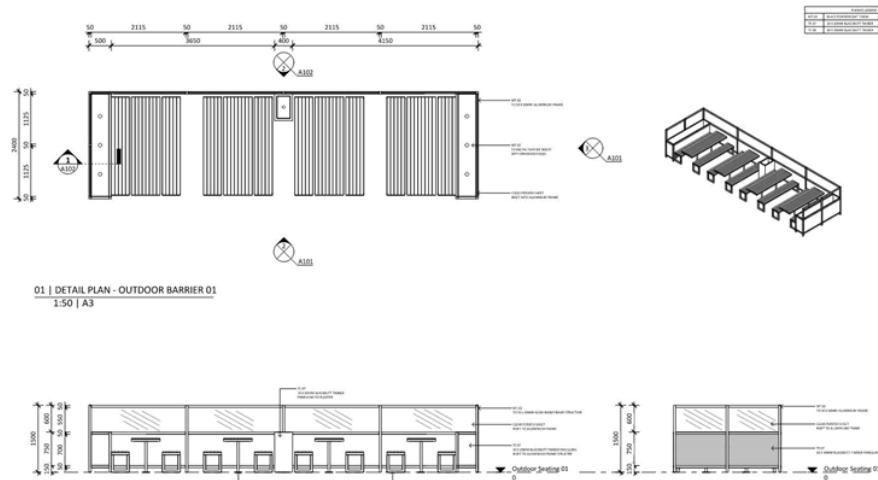


Fig. 3: Elevation, plan and isometric views of the outdoor dining structure, of which there are two proposed (Source: Application Documents).

4. Background

- 4.1 19 Morrison Street is the site of the Telegraph Hotel which has a long running history of use as a hotel. In November 2021, Council approved a refurbishment of the building which included an extension of the existing use primarily for its upper levels (PLN-21-618).

- 4.2 General Manager's Consent for the current proposal was granted in June 2022 (GMC-22-26).

5. Concerns raised by representors

- 5.1 No representations were received during the statutory advertising period between 15/7 to 29/7/2022.

6. Assessment

- 6.1 The *Sullivans Cove Planning Scheme 1997* is a performance based planning scheme. This approach recognises that there are in many cases a number of ways in which a proposal can satisfy desired environmental, social and economic standards. In some cases a proposal will be 'permitted' subject to specific 'deemed to comply' provisions being satisfied. Performance criteria are established to provide a means by which the objectives of the planning scheme may be satisfactorily met by a proposal. Where a proposal relies on performance criteria, the Council's ability to approve or refuse the proposal relates only to the performance criteria relied on.
- 6.2 The site is located in the Mixed Use Activity Area of the *Sullivans Cove Planning Scheme 1997*.
- 6.3 The existing use is Hotel. The proposal extends this use to the adjacent highway reservation. A Hotel use is a discretionary use in the Activity Area.
- 6.4 The proposal has been assessed against:
- 6.4.1 Parts A and B – Strategic Framework
 - 6.4.2 Part D – Clause 16.2 – Activity Area Controls
 - 6.4.3 Part E – Schedule 1 – Conservation of Cultural Heritage Values
 - 6.4.4 Part E – Schedule 3 – Public Urban Space
- 6.5 The proposal relies on the following performance criteria to comply with the applicable standards:
- 6.5.1 Activity Area Controls (Use) – clause 16.3.2

- 6.5.2 Public Urban Space (Outdoor Dining Furniture on the Cove Floor) – clause 24.4.6
- 6.6 Each performance criterion is assessed below.
- 6.7 Activity Area Controls (Use) – Clause 16.3
- 6.7.1 The existing discretionary use (Hotel) at 19 Morrison Street is proposed to be extended into the Brooke Street highway reservation, incorporating outdoor dining furniture.
- 6.7.2 The proposal is considered to be an intensification of the previously approved Hotel use, considered a discretionary use at clause 16.3.2 of the Scheme.
- 6.7.3 All use and development must comply with the objectives and performance criteria for the Activity Area as set out in clause 16.2 of the Scheme.
- 6.7.4 The following objectives and performance criteria are relevant in respect of the proposal:
- (a) To ensure that activities within the Cove respect the cultural heritage and character of the Activity Area.*
- All use and development within the Activity Area must demonstrably contribute to, and enhance the cultural heritage, built form (bulk, height, volume, urban detail) and spatial characteristics of the activity area.*
- (b) To ensure that the amenity, character and cultural heritage values of the Cove's roads and other public spaces are conserved and enhanced.*
- Use and development on road reserves, public parks and other public spaces within the activity area shall only be permitted where they do not detract from the space's amenity or heritage value.*
- (c) To encourage use and development which generate pedestrian movement through the activity area.*
- Outdoor dining and other outdoor pedestrian activities are encouraged in appropriate locations.*

- *All use and development shall facilitate pedestrian access, circulation, amenity and safety within the Cove.*
- *All use and development must facilitate access for the disabled and other pedestrians with restricted mobility.*

(d) To encourage the further development of the Activity Area as a tourist destination.

- *The existing mix of tourist-oriented uses and facilities, including shops, restaurants and hotels shall continue to be encouraged.*

6.7.5 Most recently the refurbishment of the Telegraph Hotel at 19 Morrison Street was approved conditional that the hours of operation of the ground level and level one being limited to 12pm to 1am. The proposed use of the outdoor dining space, at ground level adjacent to the hotel is limited to 12pm to 12am, therefore demonstrating a level of consistency, albeit with slightly more restriction, with the currently approved use of the hotel at ground level. The approved use was determined to be in accordance with the general characteristics of the activity area and the objectives and performance criteria for activities within the area. The extension and intensification of the hotel use to support the proposed outdoor dining area is considered to further promote the role of the Cove as a tourist destination and contribute to the character and vitality of the Cove, allowing for the already approved hotel and restaurant to provide a broader service. The occupation of the public space (highway reservation) in the manner proposed is not considered to detract from the amenity of this particular space, and given its characteristics (wider footpath, reduced foot traffic) it is considered an appropriate location where outdoor dining should be encouraged. Further, pedestrian safety for all users is not unduly restricted or compromised given the proposed outdoor dining structure still allows for a clear, direct thoroughfare between it and the building on 19 Morrison Street.

6.7.6 The proposal complies with the activity area controls for activity area 2.0 Sullivans Cove Mixed Use.

6.8 Public Urban Space (Commercial and Community Furniture) – clause 24.4.6

6.8.1 Furniture (chairs, tables and screens) are proposed to be permanently located within the Brooke Street highway reservation.

6.8.2 The placement of permanent outdoor dining furniture on the Cove Floor is discretionary pursuant to the table at clause 24.4.2 and clause 24.4.6.

- 6.8.3 Clause 24.4.6 provides that the design of permanent outdoor dining furniture is required to respond to the following guidelines for secondary spaces and characteristics of the Public Urban Space in the Cove:

Positioning of Civic Works and Public Street Furniture in Secondary Spaces

Civic Works and Public Street Furniture are to create an irregular patterning while still being 'squared up' to the walls of spaces and are not required to run parallel to the dominant lines of space.

Amenity and Safety

Positioning of civic works must allow for convenient pedestrian movement

Public Urban Space Function 3 - Pedestrian Movement

The function of this public urban space type is to primarily facilitate pedestrian movement. Other movements, including public transport, private vehicles and cyclists will not be precluded from these spaces. Nor will vehicle parking. However, priority will be given to the use and development of these roads to improve the safe and efficient movement of pedestrians, and to the creation of a comfortable and aesthetically pleasing pedestrian environment.

At certain times, the exclusion of motor vehicles for street festivals, markets, etc is considered appropriate. Vehicle speed in these areas must be restricted to a speed compatible with mixing motor vehicles, cyclists and pedestrians. The total number, siting and design of vehicle parking areas must only be developed after considering their impact on the pedestrian environment.

- 6.8.4 The proposed outdoor dining area is a contained pocket space that maintains a parallel relationship to the existing building and utilises a wider section of footpath whilst still allowing for unobstructed pedestrian movement. The site of the development is a low speed vehicle area with the proposed structure not impacting on the existing road network. The proposal will not unreasonably compromise the efficient movement of pedestrians, and given the location and level of pedestrian use of the specific area will not unnecessarily detract from the goal of achieving a comfortable and aesthetically pleasing pedestrian environment. The

proposal is considered consistent with the applicable guidelines and functions of the Scheme. It is considered that the proposal provides for free unobstructed pedestrian carriage, thereby utilising the public urban space for a commercial activity in a way that doesn't detrimentally impact on pedestrian amenity, efficiency and safety.

6.8.5 The Council's Road Services Engineer has assessed and supported the proposal, commenting as follows: This DA is acceptable for Roads, with advice for additional permits. It should be noted that the proposal has previously been considered by Council's Road Services Engineers as part of the General Manager's Consent process.

6.8.6 The proposal is considered to satisfy the guidelines for secondary spaces and characteristics of Public Urban Space in the Cove.

7. Discussion

7.1 Planning approval is sought for Outdoor Dining including Furniture, at 19 Morrison Street and Adjacent Road Reserve, Hobart.

7.2 The application was advertised and no representations were received.

7.3 The proposal has been assessed against the relevant provisions of the planning scheme and is considered to perform well.

7.4 The proposal has been assessed by other Council officers, including the Council's Road Services Engineer and Cultural Heritage Officer. The officers have raised no objection to the proposal, subject to conditions and advice.

7.5 The proposal is recommended for approval.

8. Conclusion

8.1 The proposed Outdoor Dining including Furniture, at 19 Morrison Street and Adjacent Road Reserve, Hobart satisfies the relevant provisions of the *Sullivans Cove Planning Scheme 1997*, and as such is recommended for approval.

9. Recommendations

That: Pursuant to the *Hobart Interim Planning Scheme 2015*, the City Planning Committee, in accordance with the delegations contained in its terms of reference, approve the application for Outdoor Dining including Furniture, at 19 Morrison Street and Adjacent Road Reserve, Hobart for the reasons outlined in the officer's report and a permit containing the following conditions be issued:

GEN

The use and/or development must be substantially in accordance with the documents and drawings that comprise PLN-22-419 - 19 MORRISON STREET HOBART TAS 7000 - Final Planning Documents except where modified below.

Reason for condition

To clarify the scope of the permit.

PLN 6

Use of the outdoor dining space must not occur outside of the following hours:

- **12pm to 12am, seven days per week**

Reason for condition

To clarify the scope of the permit

ENG 1

Any damage to council infrastructure resulting from the implementation of this permit, must, at the discretion of the Council:

1. **Be met by the owner by way of reimbursement (cost of repair and reinstatement to be paid by the owner to the Council); or**
2. **Be repaired and reinstated by the owner to the satisfaction of the Council.**

A photographic record of the Council's infrastructure adjacent to the subject site must be provided to the Council prior to any commencement of works.

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FEES AND CHARGES

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DIAL BEFORE YOU DIG

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(Cameron Sherriff)

Development Appraisal Planner

As signatory to this report, I certify that, pursuant to Section 55(1) of the Local Government Act 1993, I hold no interest, as referred to in Section 49 of the Local Government Act 1993, in matters contained in this report.



(Ben Ikin)

Senior Statutory Planner

As signatory to this report, I certify that, pursuant to Section 55(1) of the Local Government Act 1993, I hold no interest, as referred to in Section 49 of the Local Government Act 1993, in matters contained in this report.

Date of Report: 9 August 2022

Attachment(s):

Attachment B - CPC Agenda Documents

Planning #259542

Property

19 MORRISON STREET HOBART TAS 7000

**People****Applicant ***

AVC Operations Pty Ltd
Yvette Neilson
Level 3, 616 St Kilda Road
Level 3, 616 St Kilda Road
MELBOURNE VIC 3004
0433490570
yvette.neilson@ausvenueco.com.au

Owner *

Cobra International Pty Ltd
Stephen Bourke
Level 1, 174 Collins Street
HOBART TAS 7000
0435 164 460
sjbtas@gmail.com

Entered By

YVETTE NEILSON
0433 490 570
yvette.neilson@ausvenueco.com.au

Use

Restaurant

Details

Have you obtained pre application advice?

☒ Yes

If YES please provide the pre application advice number eg PAE-17-xx

GMC-22-26

Are you applying for permitted visitor accommodation as defined by the State Government Visitor Accommodation Standards? Click on help information button for definition. *

☒ No

Is the application for SIGNAGE ONLY? If yes, please enter \$0 in the cost of development, and you must enter the number of signs under Other Details below. *

☒ No

If this application is related to an enforcement action please enter Enforcement Number

Details

What is the current approved use of the land / building(s)? *

The building operates as a pub for the sale and consumption of food & liquor.

Please provide a full description of the proposed use or development (i.e. demolition and new dwelling, swimming pool and garage) *

Approval being sought for the erection of external outdoor footpath furniture. Furniture is temporary in nature and is proposed to remain outside for the duration of the licensed occupation. Patrons sitting outside will have the opportunity to purchase food & drinks from inside the venue and take outside to sit on the street furniture. Additionally menus will be available at the tables for patrons to order from and which staff will service. The street furniture is proposed to occupy approx. 49 sqm of floor area, however the operator will require shared street path access from the building to the outdoor furniture to service food & drinks..

Estimated cost of development *

20000.00

Existing floor area (m2)

88.00

Proposed floor area (m2)

50.00

Site area (m2)

88

Carparking on Site

Total parking spaces

0

Existing parking spaces

0

N/A

☒ Other (no selection chosen)

Hours of Business

Are the proposed hours of business different from the existing?

☒ Yes

What days and hours of operation are proposed for the business?

Existing Proposed

Monday to Friday	From 12:00	To 24:00	Monday to Friday	From 12:00	To 24:00
			Saturday	From 12:00	To 24:00
			Sunday	From 12:00	To 24:00

Number of Employees

List the total number of people who will be working on the site.

Proposed number of employees

20

Existing number of employees

20

Goods Deliveries

Will there be any commercial vehicles accessing the site?

☒ No

Type of Vehicle

Trips per Week

Very Large (Semi trailer)

Large

Medium

Small

Outdoor storage / seating / number of beds

Is outdoor storage proposed?

☒ Yes

** Please ensure the proposal shows the location of where the outdoor storage areas are and what type of goods are stored*

Other Details

Does the application include signage? *

☒ No

How many signs, please enter 0 if there are none involved in this application? *

0

Tasmania Heritage Register

Is this property on the Tasmanian Heritage Register?

☒ No**Documents****Required Documents**Title (Folio text and Plan and Title.pdf
Schedule of Easements) *

Plans (proposed, existing) * 220525_Telegraph Hotel_External Seating_TP.pdf

GM or Crown consent GMC-22-1.PDF

**RESULT OF SEARCH**

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



SEARCH OF TORRENS TITLE

VOLUME 249473	FOLIO 1
EDITION 29	DATE OF ISSUE 09-Jul-2021

SEARCH DATE : 30-Aug-2021

SEARCH TIME : 02.13 PM

DESCRIPTION OF LAND

City of HOBART

Lot 1 on Plan 249473

Derivation : The allotment Section 03 Granted to P.A. De Roock
Prior CT 3179/66SCHEDULE 1B909183 TRANSFER to COBRA INTERNATIONAL PTY LTD Registered
30-Jan-1996 at 12.02 PMSCHEDULE 2

Reservations and conditions in the Crown Grant if any
RESERVING unto Gibson and Murdoch Limited (herein called "the Company") and its assigns and the owners and occupiers for the time being of the land which adjoins the land within described on its north eastern and north western boundaries (herein referred to as "the Company's land") and appurtenant to the Company's land the right of access of light and air to the windows and/or apertures now existing or hereafter to be made in the existing walls of the buildings on the Company's land or any walls hereafter to be erected thereon in substitution for or as additions to the same respectively above the several heights from the natural surface of the said land within described shown in the elevation section of the diagram endorsed on Diagram No. 68066 over across and along the strip of land portion of the said land within described and marked "Light Area" on Diagram No. 68066

SUBJECT TO the proviso that nothing hereinbefore contained shall prevent the purchasers from erecting a building on the site occupied by a weather board shed as shown on Diagram No. 68066 with the roof thereof so constructed that at the wall of the building erected on the Company's land on its south western boundary it shall not exceed a height of five feet eight

**RESULT OF SEARCH**

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

inches from the natural surface of the said land within described and shall not exceed a height of eight feet eight inches within a distance of six feet from the last mentioned wall and with proper provision made for the protection of the said wall and the foundations thereof from the roof waters from the said building

RESERVING to the Company and its assigns and such owners and occupiers as aforesaid the right to erect and maintain a down pipe three inches and one half of an inch wide on the wall of the building erected on the Company's land on one of the south eastern boundaries thereof over portion of the Light Area in the position shown on Diagram No. 68066 as the said down pipe now exists also the right to conduct carry and convey the rain water and also any water from the Grinnell Patent Roof and Window Drenchers (herein referred to as "the said Sprinklers") installed on and in the buildings erected on the Company's land from the roofs of the buildings erected on the Company's land down and through the said down pipe into an existing drain on the said land within described thence through such drain under the last mentioned land to a drain and leading to the Watermen's Ferry on the River Derwent also the right to maintain in its present position the piping in connection with the said Sprinklers fixed to the wall of the building erected along the south western boundary of the Company's land as such piping is shown on Diagram No. 68066 and is marked 2" Fire Sprinkler Pipe" also the right to enter into and upon the "Light Area" for the purpose of cleansing amending repairing and renewing the said down pipe the said drain under the said land within described and the said Sprinklers whenever reasonably necessary to do so without doing any damage to the said land within described and repairing and making good all damage (if any) which may be done

E2172 INSTRUMENT Creating Restrictive Covenants Registered 17-Jun-2016 at noon

M833901 MORTGAGE to MyState Bank Limited Registered 13-Aug-2020 at 12.01 PM

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

FOLIO PLAN

RECORD OF TITLES

Issued Pursuant to the Land Titles Act 1980



OS-D 435

ANNEXURE TO CERTIFICATE OF TITLE

VOL.

3179

FOL.

66



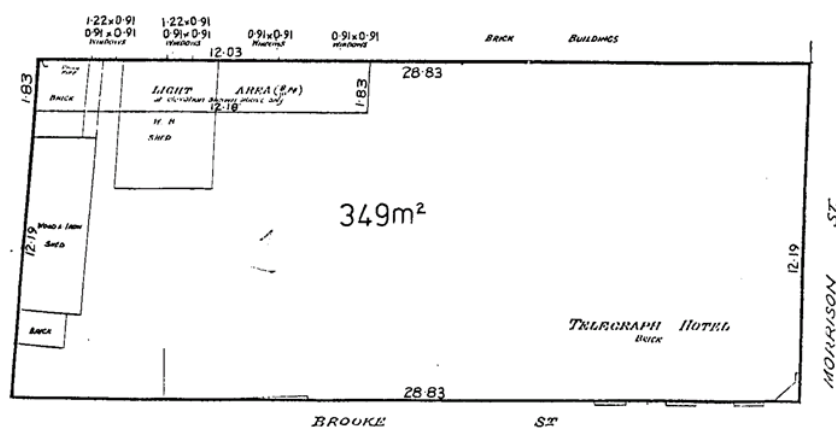
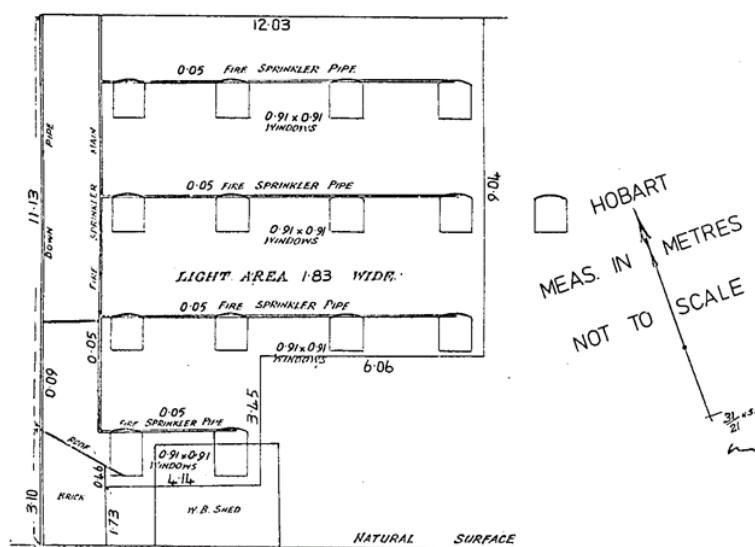
ACTING DEPUTY Recorder of Titles

REGISTERED NUMBER

249473

Lot 1 of this plan consists of all the land comprised in the above-mentioned cancelled folio of the Register.

ELEVATION SECTION



19 MORRISON ST, HOBART
TELEGRAPH HOTEL

MARCH 2022

EXISTING

- 000 SITE CONTEXT PLAN
- 100 EXISTING GROUND FLOOR PLAN
- 101 EXISTING ELEVATIONS
- 102 EXISTING ELEVATIONS

PROPOSED

- 103 SITE PLAN
- 104 GROUND FLOOR PLAN
- 105 PROPOSED ELEVATIONS
- 106 PROPOSED ELEVATIONS



EXISTING CONTEXT PLAN
1:500@A3

FO

A

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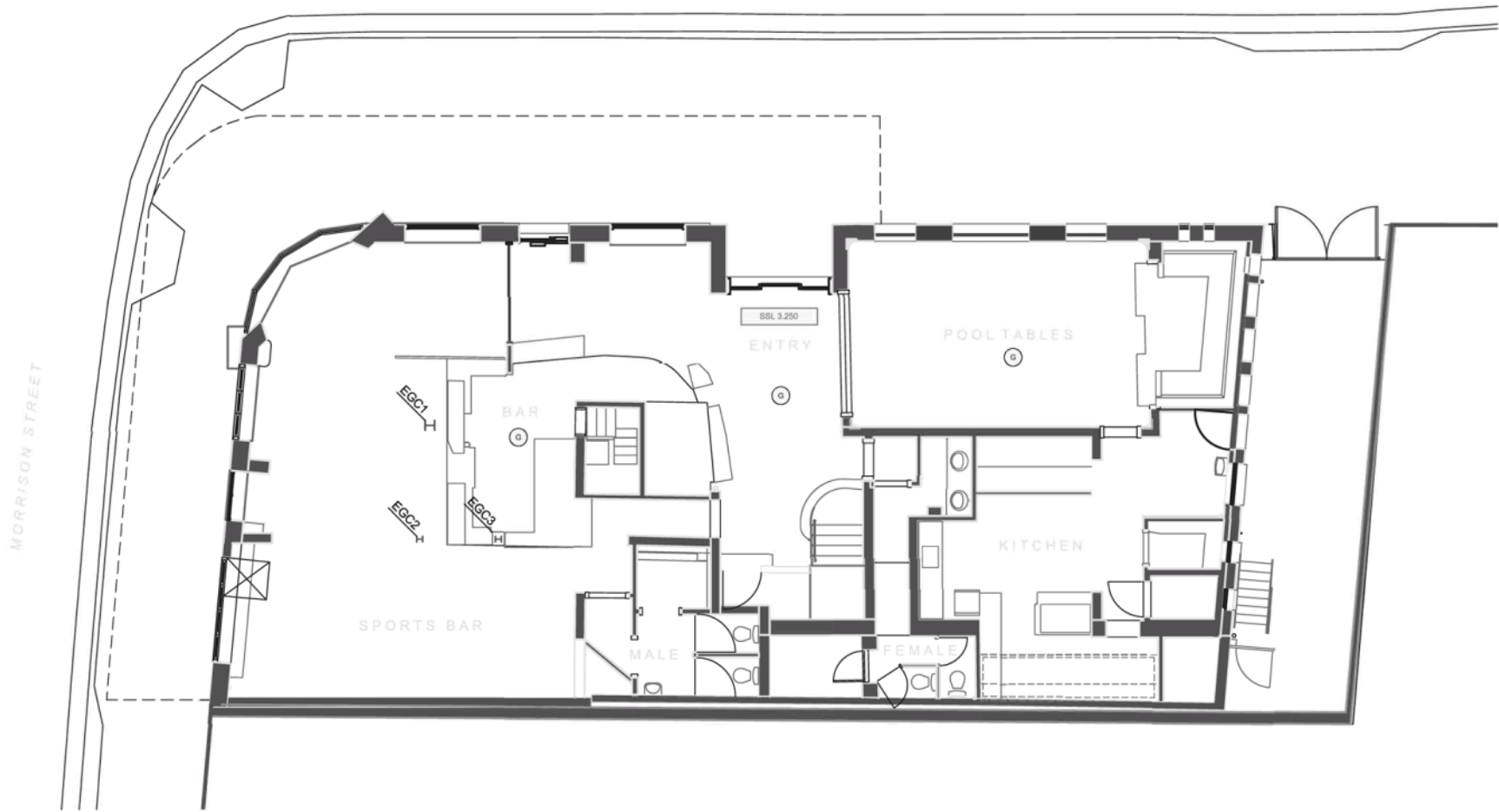
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Project Type & Location			
TELEGRAPH HOTEL - 19 MORRISON ST, HOBART, TASMANIA			
Project No.	Date	Scale	
2112	MAY 2022	1:500 @ A3	
Project Stage	Drawn	Checked	
NOT FOR CONSTRUCTION	AH	CB	

Drawing No.	Revision
TP-000	
Drawing Title	
SITE CONTEXT PLAN	



EXISTING GROUND FLOOR PLAN
1:100@A3

- EXISTING FINISHES LEGEND
- A BRICKWORK - PAINTED
 - B MASONRY - PAINTED
 - C METAL ROOF SHEETING
 - D VERTICAL CLADDING
 - E WALL TILES
 - F LIGHTWEIGHT CLADDING
 - G CONCRETE FLOOR

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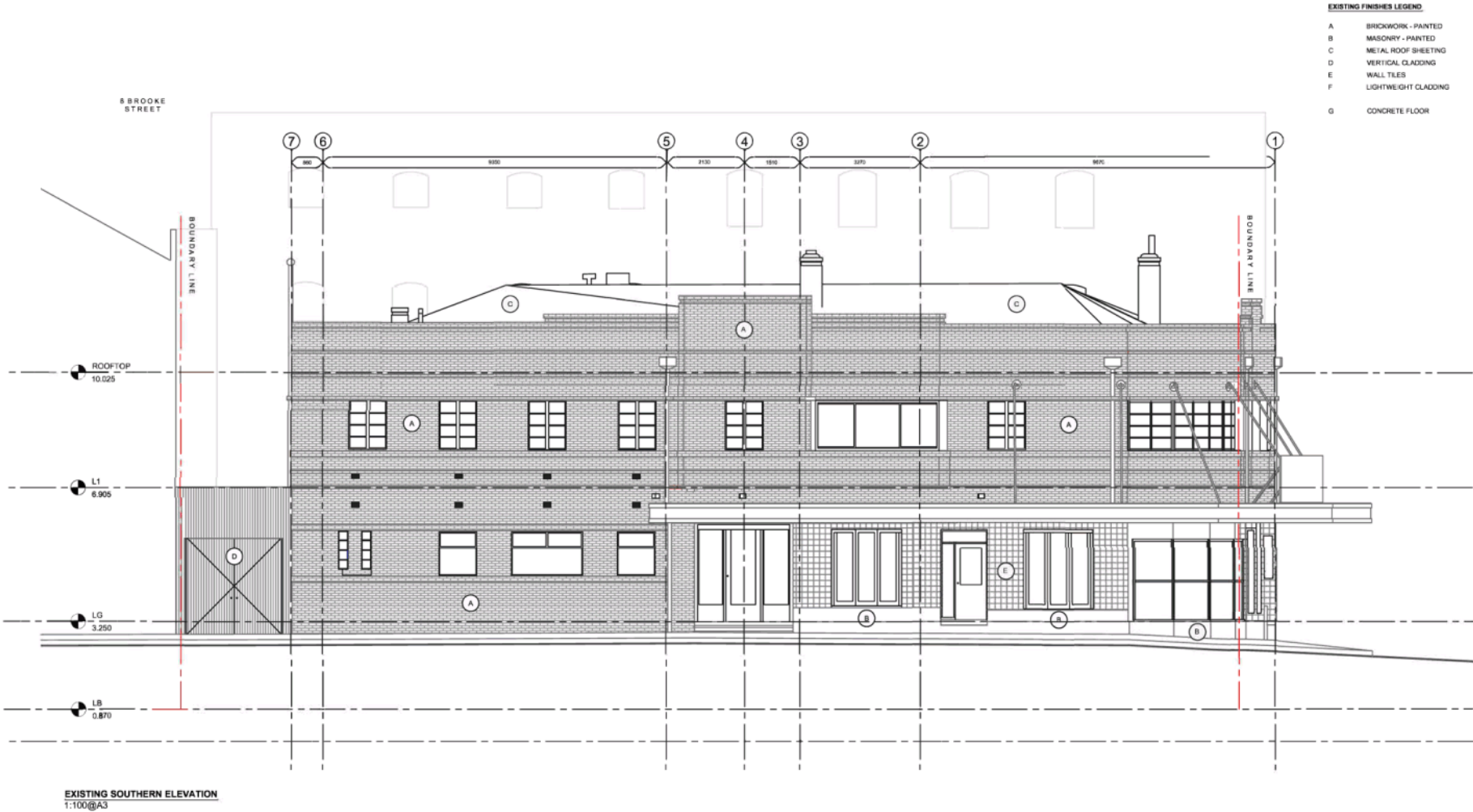
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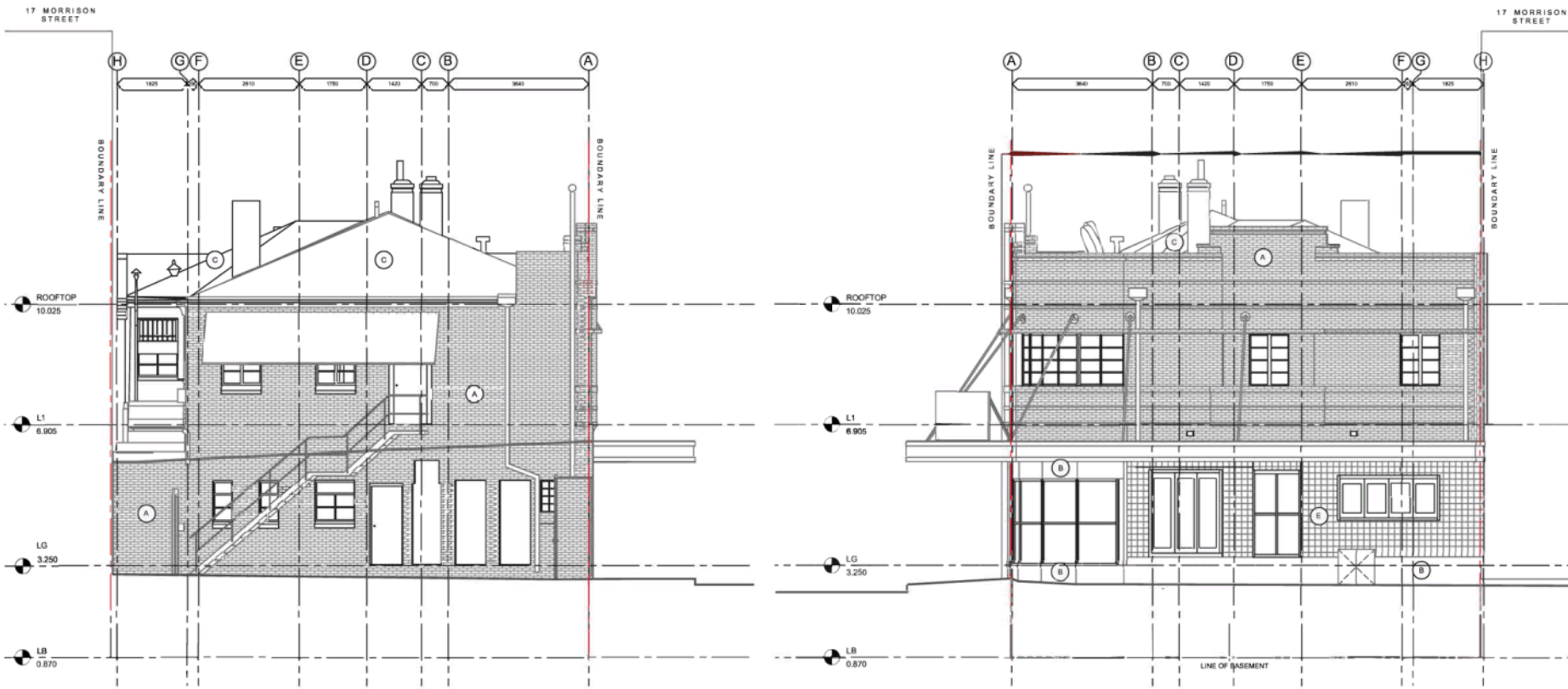
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Project No.	Date	Scale	
2112	MAY 2022	1:100 @ A3	
Project Stage	Drawn	Checked	
NOT FOR CONSTRUCTION	AH	CB	

Drawing No.	Revision
TP-100	
Drawing Title	
EXISTING GROUND FLOOR PLAN	





EXISTING WESTERN ELEVATION
1:100@A3

EXISTING EASTERN ELEVATION
1:100@A3

EXISTING FINISHES LEGEND

- A BRICKWORK - PAINTED
- B MASONRY - PAINTED
- C METAL ROOF SHEETING
- D VERTICAL CLADDING
- E WALL TILES
- F LIGHTWEIGHT CLADDING
- G CONCRETE FLOOR

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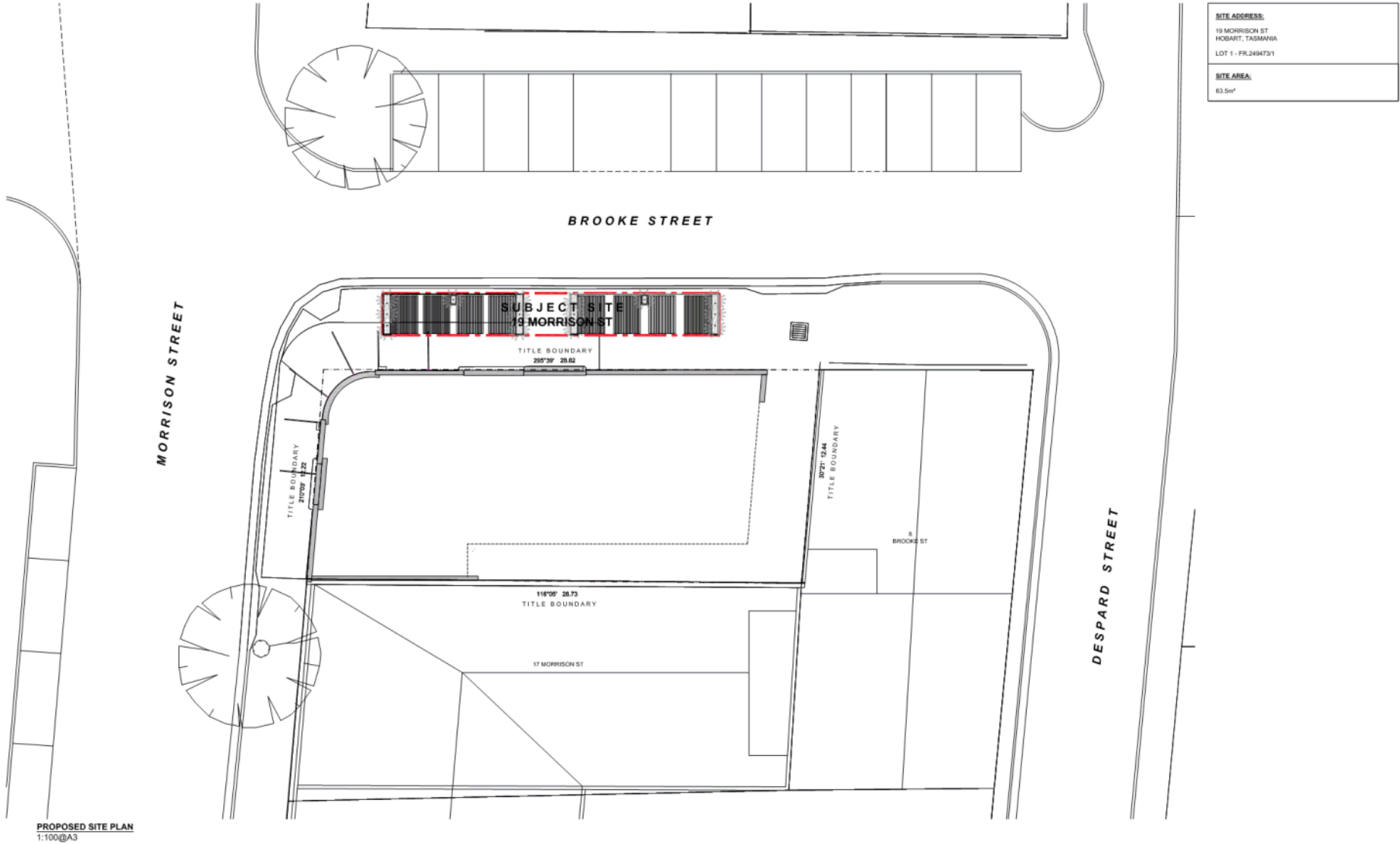
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TELEGRAPH HOTEL - 19 MORRISON ST, HOBART, TASMANIA

Project No. 2112 Date MAY 2022 Scale 1:100 @ A3
Project Stage NOT FOR CONSTRUCTION Drawn AH Checked CB

Drawing No. Revision

TP-102

Drawing Title
EXISTING ELEVATIONS



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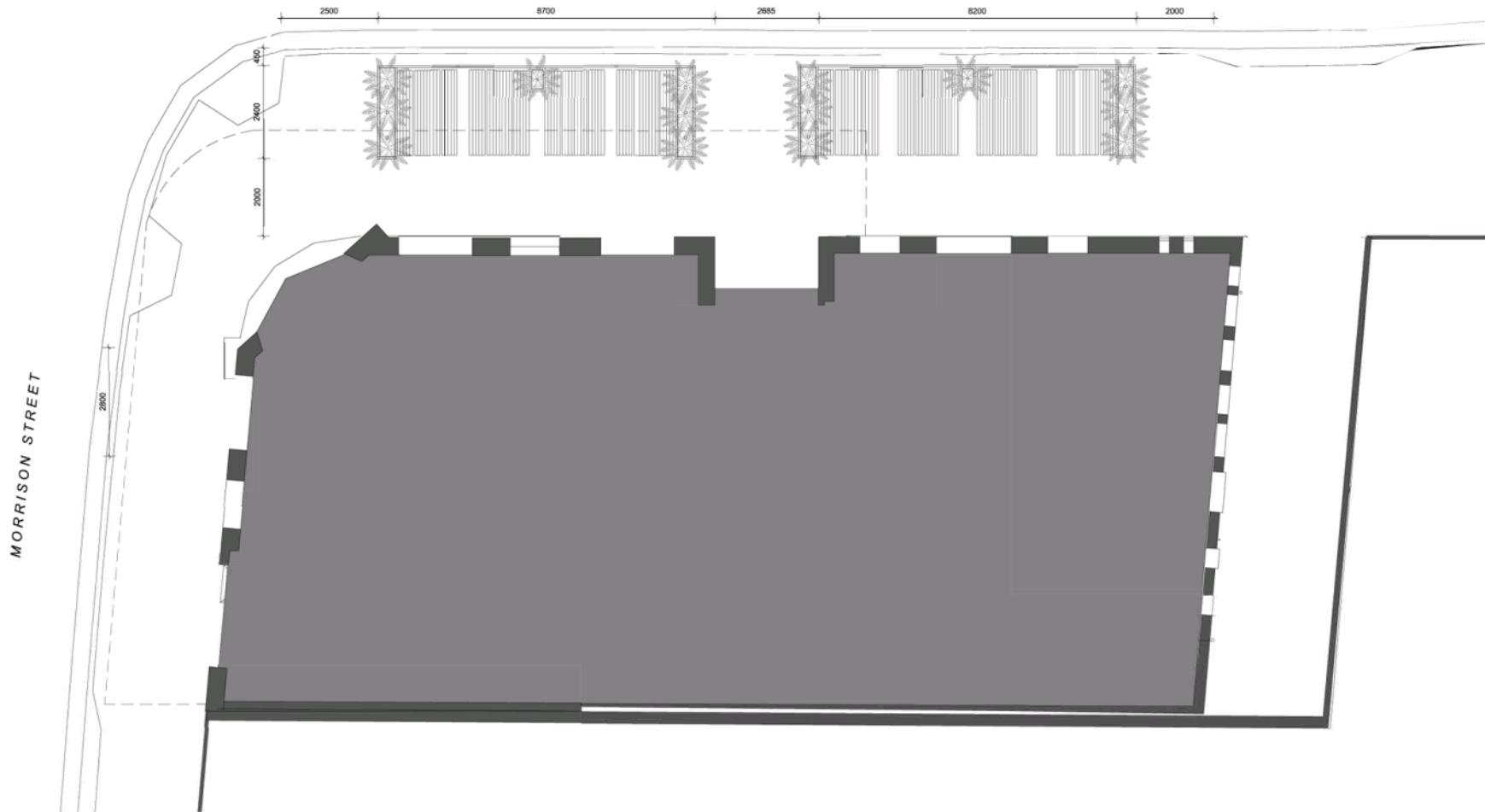
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Project Type & Location			
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Project No.	Date	Scale	
2112	MAY 2022	1:100 @ A3	
Project Stage	Drawn	Checked	
NOT FOR CONSTRUCTION	AH	CB	

Drawing No.	Revision
TP-103	
Drawing Title	
PROPOSED SITE PLAN	



GROUND FLOOR PLAN
1:100 @ A3

GENERAL NOTES:

WRITTEN DIMENSIONS TAKE PREFERENCE OVER SCALE.
CONFIRM ALL LEVELS & DIMENSIONS ON SITE BEFORE COMMENCEMENT OF ANY WORKS.
ALL WORKS TO COMPLY WITH B.C.A. REGULATIONS AND LOCAL COUNCIL REQUIREMENTS. ALL WORKS TO COMPLY WITH ALL RELEVANT S.A.A. CODES.

SETDOWN IN SLAB ABATH-ROOM TO ALLOW FOR CEMENT SCREED BED AND FALL OF TILES TOWARDS FLOOR WASTE.
BRADFORD SOUNDSCREEN PLUS ACOUSTIC INSULATION TO INTERNAL WALLS SURROUNDING RESROOMS.
NEW PAINTING TO ALL INTERNAL WALLS & CEILING - REFER TO FINISHES SCHEDULE.
FLOORS TO WET AREAS TO HAVE IMPERVIOUS FLOOR FINISH AND BE FULLY TANKED TO AS 3740 - 2010.

CONSULTANT NOTES:

REFER ELECTRICAL CONSULTANT DOCUMENTATION FOR ALL ELECTRICAL EQUIPMENT LOCATIONS AND SPECIFICATIONS.
REFER MECHANICAL CONSULTANT DOCUMENTATION FOR ALL HVAC/MECHANICAL EQUIPMENT LOCATIONS AND SPECIFICATIONS.
REFER HYDRAULIC ENGINEER DOCUMENTATION FOR ALL DRAINAGE AND WASTE POINTS.
REFER INTERIOR DESIGNER DOCUMENTATION FOR DETAILS OF JOINERY, INTERNAL FINISHES AND FIXTURES.

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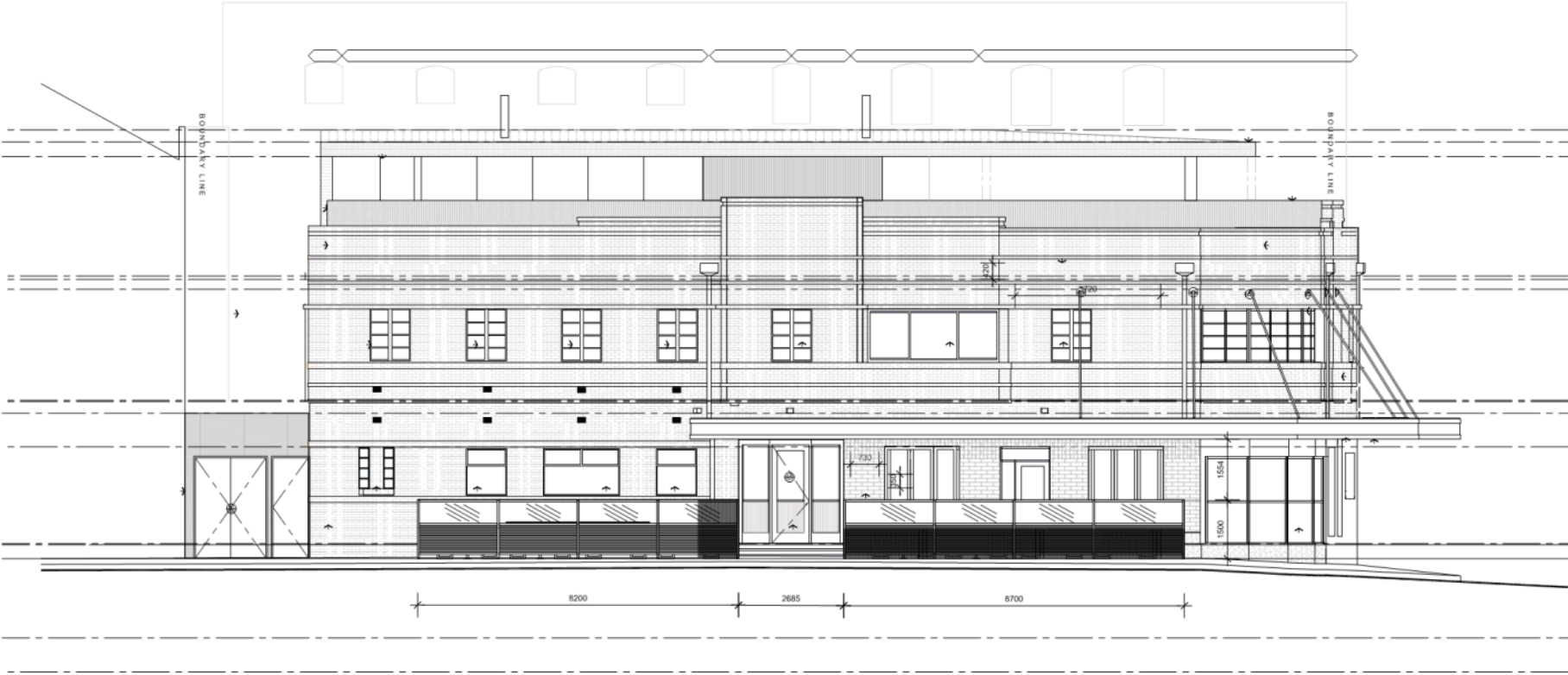
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Project Type & Location
TELEGRAPH HOTEL - 19 MORRISON ST, HOBART, TASMANIA
Project No. 2112
Date MAY 2022
Project Stage NOT FOR CONSTRUCTION

Scale 1:100 @ A3
Drawn AH
Checked CB

Drawing No. TP-104
Revision
Drawing Title
GA - GROUND FLOOR PLAN



FO

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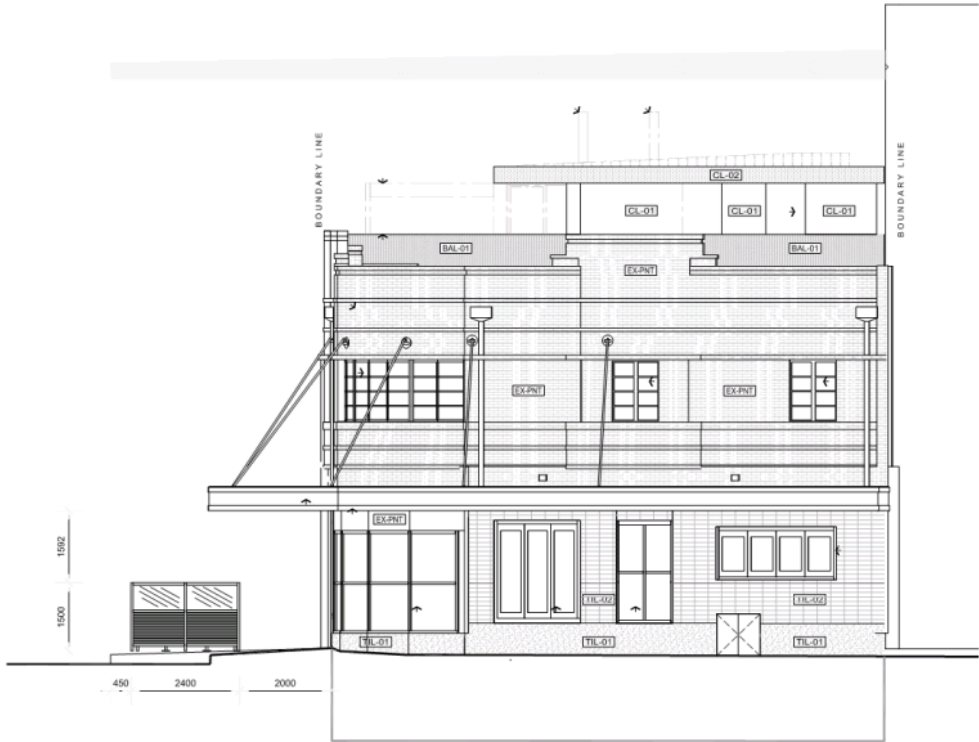
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Project No. 2112
Project Stage NOT FOR CONSTRUCTION
Date MAY 2022
Scale 1:100 @ A3
Drawn AH
Checked CB

Drawing No. TP-105
Revision
Drawing Title
PROPOSED ELEVATION



GENERAL NOTES:
ALL TABLES, SEATS AND BARRIERS TO BE
CONSTRUCTED TO ALLOW FOR FOOTPATH
SLOPE TO ACHIEVE LEVEL SEATING.

FO

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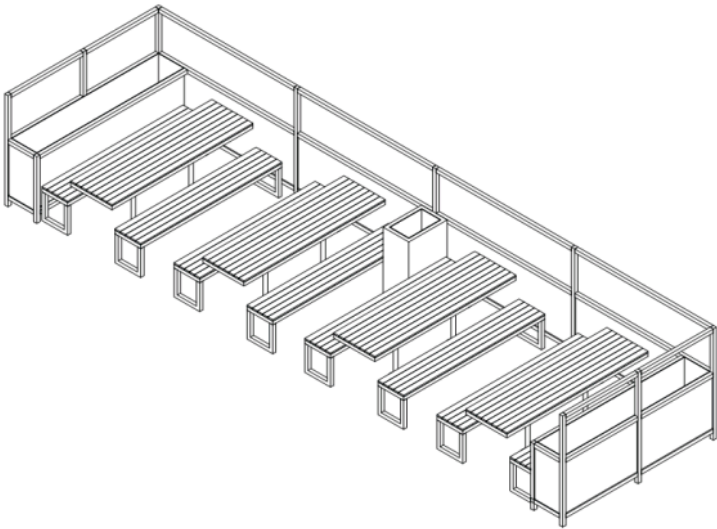


Project Type & Location
TELEGRAPH HOTEL - 19 MORRISON ST, HOBART, TASMANIA
Project No. 2112
Date MAY 2022
Project Stage NOT FOR CONSTRUCTION

Scale 1:100 @ A3
Drawn AH
Checked CB

Drawing No. TP-106
Revision
Drawing Title
PROPOSED ELEVATIONS

211219
TELEGRAPH HOTEL
EXTERIOR PLATFORM SEATING
19 MORRISON ST, HOBART, TASMANIA

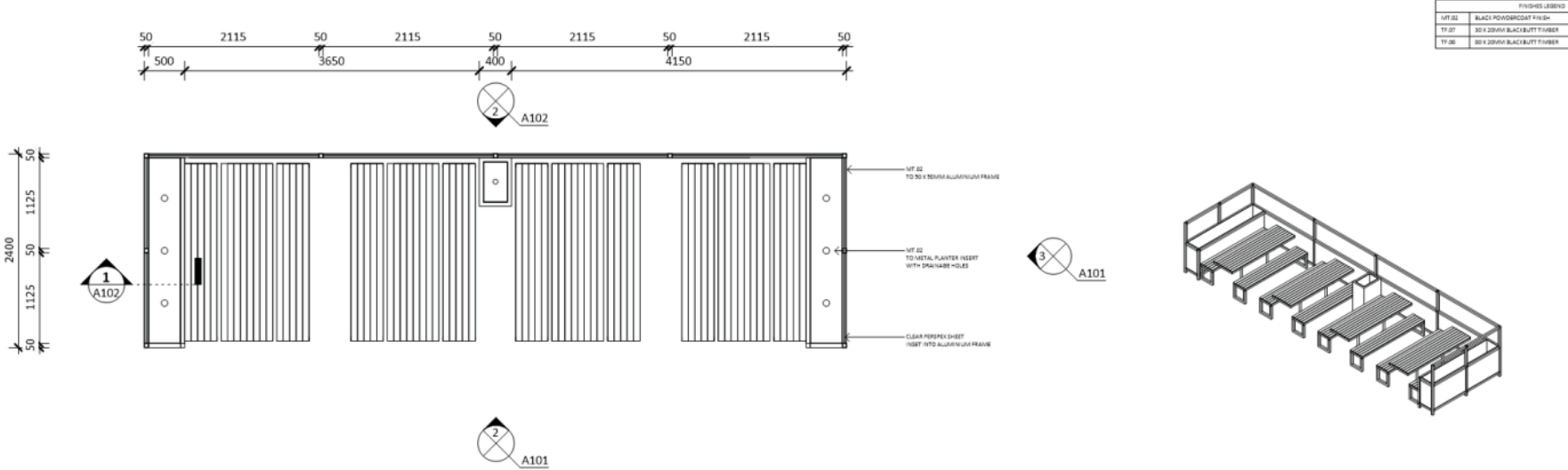


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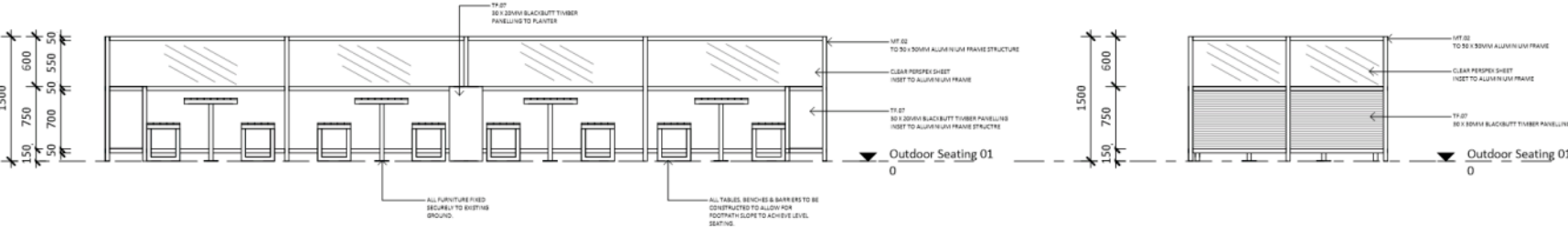
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Project Name & Location			
TELEGRAPH HOTEL - 19 MORRISON ST, HOBART, TASMANIA			
Project No.	Date	Scale	
211219	22/05/22		
Issue Status	Drawn	Checked	
	KN	Checker	

Drawing No.	Revision
A100	
Drawing Title	Area
Cover	



01 | DETAIL PLAN - OUTDOOR BARRIER 01
1:50 | A3



E01 | FRONT ELEVATION
1:50 | A3

E02 | RIGHT SIDE ELEVATION
1:50 | A3



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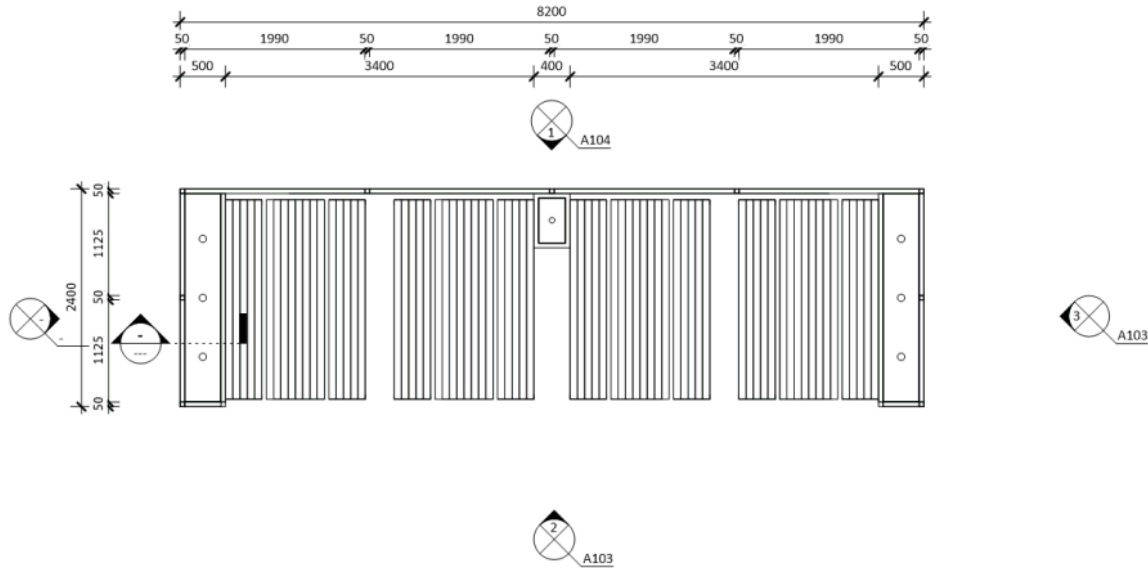
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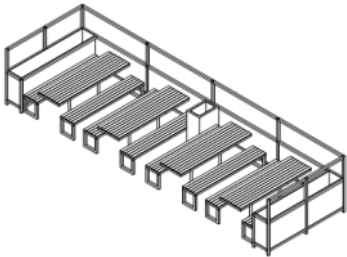
Project Name & Location
TELEGRAPH HOTEL - 19 MORRISON ST, HOBART, TASMANIA
Project No.
211219
Issue Status
Date
20/05/22
Scale
1 : 50
Drawn
KN
Checked
Checker

Drawing No.
A101
Revision
Area
Drawing Title
Barrier 01 - Plan & Elevation

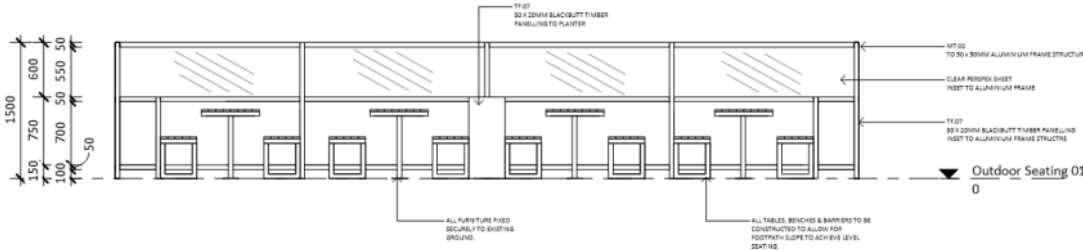
Drawing Title
Barrier 01 - Elevation & Section



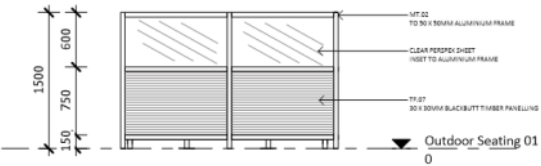
FINISHES LEGEND	
MT.02	BLACK POWDERCOAT FINISH
TT.07	30 X 20MM BLACK BUTT TIMBER
TT.06	30 X 20MM BLACK BUTT TIMBER



01 | DETAIL PLAN - OUTDOOR BARRIER 02
1:50 | A3



E01 | FRONT ELEVATION
1:50 | A3



E02 | RIGHT SIDE ELEVATION
1:50 | A3



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Project Name & Location

TELEGRAPH HOTEL - 19 MORRISON ST, HOBART, TASMANIA

Project No.

211219

Issue Status

06/20/22

Date

06/20/22

Scale

1 : 50

Drawn

KN

Checked

Checker

Drawing No.

A103

Drawing Title

Barrier 02 - Plan & Elevations

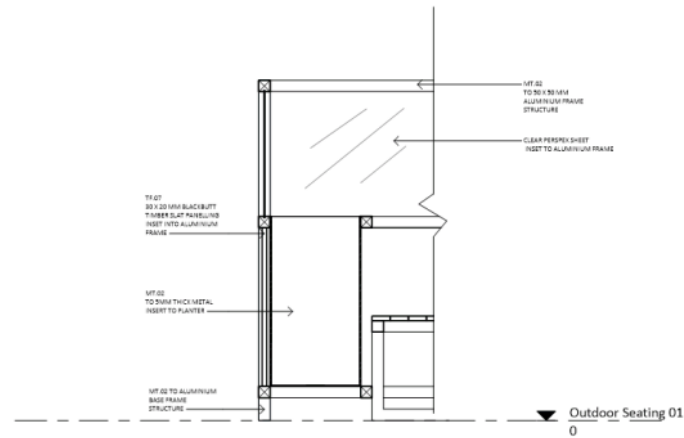
Revision

Area

FINISHES ABBREV	
BL04	3MM THICK CLEAR GLASS
MT 02	BLACK POWDERCOAT FINISH
TF 07	80 X 20MM BLACK BUTT TIMBER
TF 03	80 X 20MM BLACK BUTT TIMBER



E03 | BACK ELEVATION
1:50 | A3



S01 | SECTION DETAIL
1:20 | A3



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Project Name & Location

TELEGRAPH HOTEL - 19 MORRISON ST, HOBART, TASMANIA

Project No.

211219

Issue Status

Date

06/20/22

Scale

As indicated

Drawn

KN

Checked

Checker

Drawing No.

A104

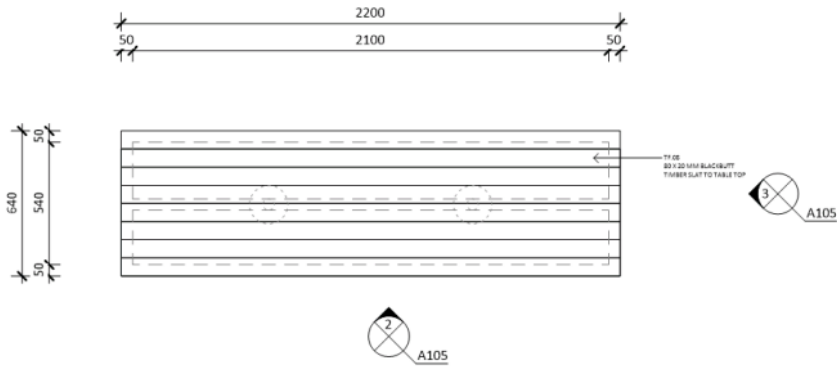
Drawing Title
Barrier 02 - Elevation & Section

Revision

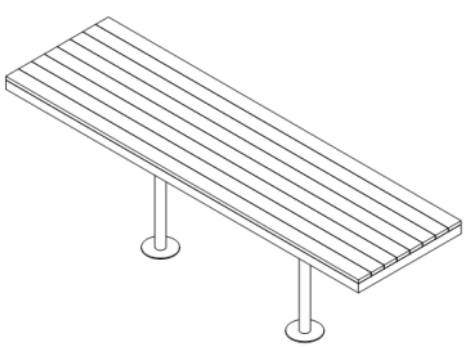
Area



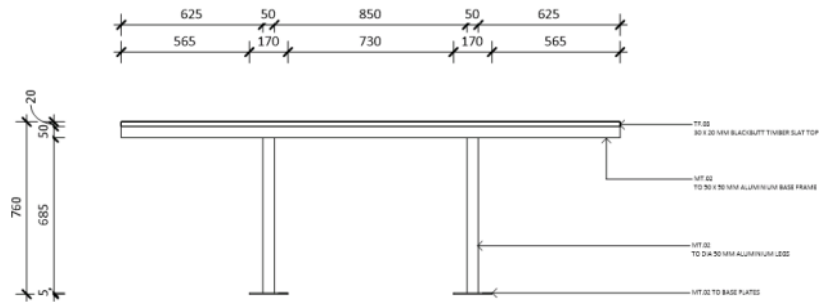
FINISHES ABBREV	
BL/04	SMOOTH/CLAR BLISS
MT/02	BLACK POWDERCOAT FINISH
TF/07	80 X 20MM BLACK BUTT TIMBER
TF/03	80 X 20MM BLACK BUTT TIMBER



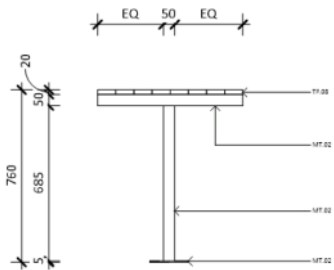
01 | DETAIL PLAN - FLOOR FIXED TABLE
1:20 | A3



A01 | FLOOR FIXED TABLE AXONOMETRIC
1:20 | A3



E01 | FRONT ELEVATION
1:20 | A3



E02 | RIGHT SIDE ELEVATION
1:20 | A3

0 1 2 3 4 5m



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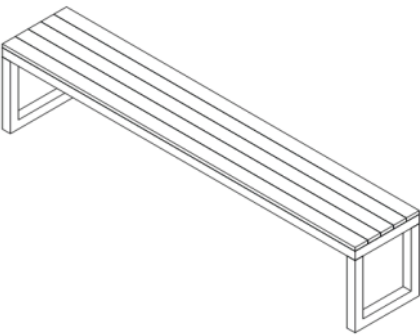
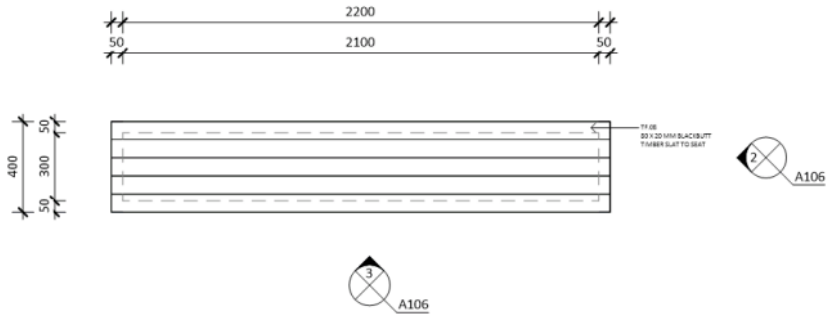
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Project Name & Location TELEGRAPH HOTEL - 19 MORRISON ST, HOBART, TASMANIA		
Project No. 211219	Date 20/05/22	Scale 1 : 20
Issue Status	Drawn KN	Checked Checker

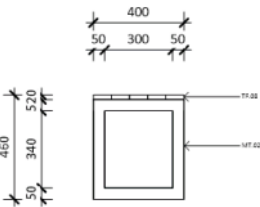
Drawing No. A105	Revision
Drawing Title Table Detail	Area

FINISHES LEGEND	
MF.02	BLACK POWDERCOAT FINISH
TF.07	50 X 25MM BLACKBUTT TIMBER
TF.08	50 X 25MM BLACKBUTT TIMBER



01 | DETAIL PLAN - FIXED BENCH SEAT
1:20 | A3

A01 | FIXED BENCH SEAT AXONOMETRIC
1:20 | A3



E01 | FRONT ELEVATION
1:20 | A3

E02 | RIGHT SIDE ELEVATION
1:20 | A3

0 1 2 3 4 5m



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Project Name & Location		
TELEGRAPH HOTEL - 19 MORRISON ST, HOBART, TASMANIA		
Project No.	Date	Scale
211219	20/05/22	1 : 20
Issue Status	Drawn	Checked
	KN	Checker

Drawing No.	Revision
A106	
Drawing Title	Area
Bench Seat Detail	



Enquiries to: City Life
Phone: (03) 6238 2711
Email: coh@hobartcity.com.au

8 June 2022

YVETTE NEILSON
L3 616 ST KILDA ROAD
MLBOURNE VIC 3004

mailto: yvette.neilson@ausvenueco.com.au

Dear Sir/Madam

**19 MORRISON STREET, HOBART - GMC - TEMPORARY CONSTRUCTION OF
OUTDOOR DINING NOTICE OF LAND OWNER CONSENT TO LODGE A PLANNING
APPLICATION - GMC-22-26**

Site Address:

19 Morrison Street and adjacent road reserve

Description of Proposal:

Outdoor dining furniture

Applicant Name:

Yvette Neilson
AVC Operations Pty Ltd

PLN (if applicable):

N/a

I write to advise that pursuant to Section 52 of the *Land Use Planning and Approvals Act 1993*, I grant my consent on behalf of the Hobart City Council as the owner/administrator of the above land for you to make application to the City for a planning permit for the development described above and as per the attached documents. I granted consent pursuant to delegation, a copy of which is enclosed.

Please note that the granting of the consent is only for the making of the application and in no way should such consent be seen as prejudicing any decision the Council is required to make

Hobart Town Hall
50 Macquarie Street
Hobart TAS 7000

Hobart Council Centre
16 Elizabeth Street
Hobart TAS 7000

City of Hobart
GPO Box 503
Hobart TAS 7001

T 03 6238 2711
F 03 6234 7109
E coh@hobartcity.com.au
W hobartcity.com.au

CityofHobartOfficial
ABN 39 055 343 428
Hobart City Council

as the statutory planning authority.

This consent does not constitute an approval to undertake any works and does not authorise the owner, developer or their agents any right to enter or conduct works on any Council managed land whether subject to this consent or not.

If planning approval is granted by the planning authority, you will be required to seek approvals and permits from the City as both landlord, land manager, or under other statutory powers (such as other legislation or City By-Laws) that are not granted with the issue of a planning permit under a planning scheme. This includes the requirement for you to reapply for a permit to occupy a public space under the City's Public Spaces By-law if the proposal relates to such an area.

Accordingly, I encourage you to continue to engage with the City about these potential requirements.

Yours faithfully



(Glenn Doyle)

HEAD OF CITY PROJECTS

Relevant documents/plans:

Cover, TP-000, TP-100 to TP-106 & A100 to A106 all by Mitchell & Eades

19 MORRISON ST, HOBART
TELEGRAPH HOTEL

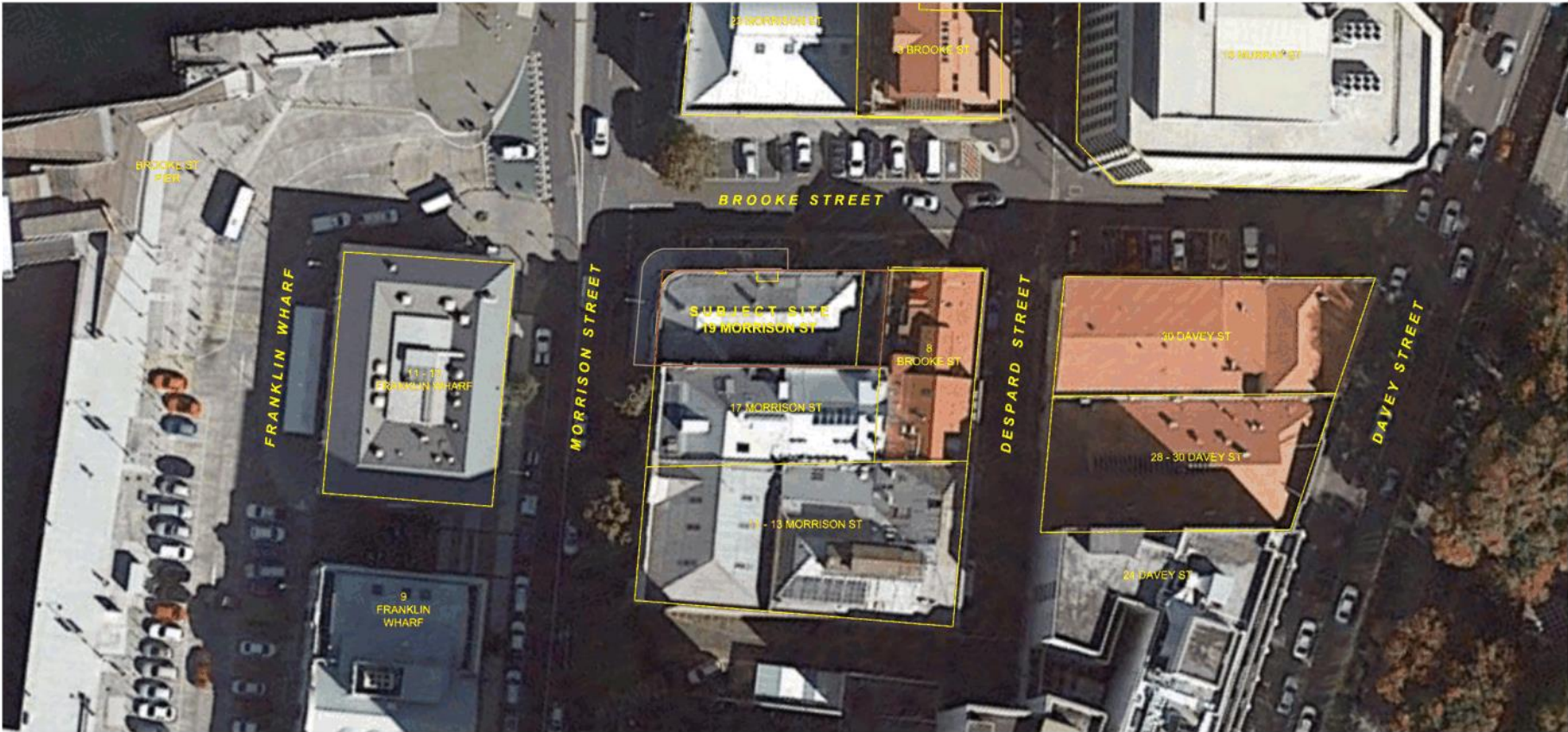
MARCH 2022

EXISTING

- 000 SITE CONTEXT PLAN
- 100 EXISTING GROUND FLOOR PLAN
- 101 EXISTING ELEVATIONS
- 102 EXISTING ELEVATIONS

PROPOSED

- 103 SITE PLAN
- 104 GROUND FLOOR PLAN
- 105 PROPOSED ELEVATIONS
- 106 PROPOSED ELEVATIONS



EXISTING CONTEXT PLAN
1:500@A3

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GMC-22-26 08/06/2022

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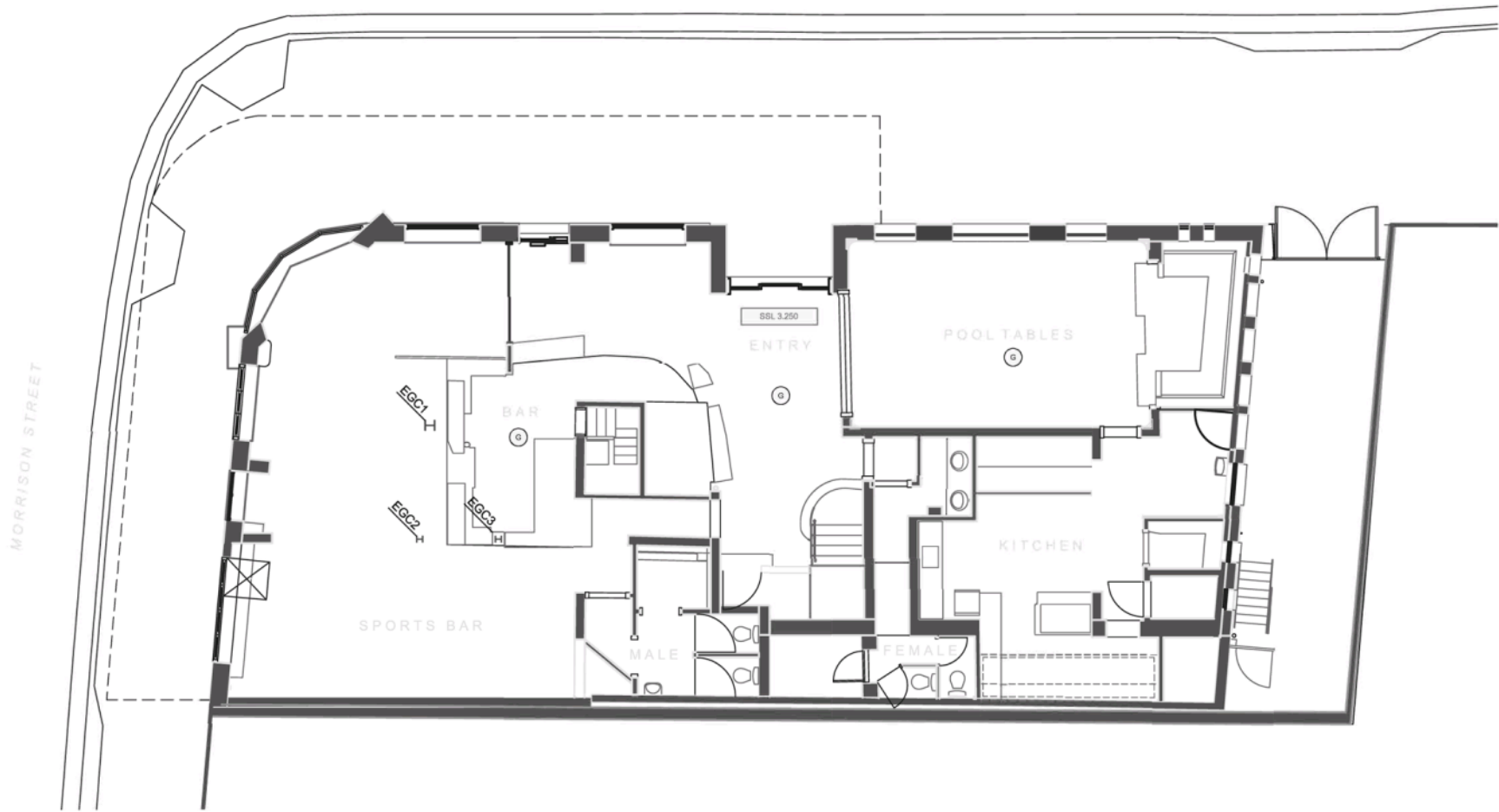
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Project Type & Location			
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Project No.	Date	Scale	
2112	MAY 2022	1:500 @ A3	
Project Stage	Drawn	Checked	
NOT FOR CONSTRUCTION	AH	CB	

Drawing No.	Revision
TP-000	
Drawing Title	
SITE CONTEXT PLAN	



EXISTING GROUND FLOOR PLAN
1:100@A3

Approved - General
Manager Consent Only
GMC-22-26 08/06/2022

- EXISTING FINISHES LEGEND
- A BRICKWORK - PAINTED
 - B MASONRY - PAINTED
 - C METAL ROOF SHEETING
 - D VERTICAL CLADDING
 - E WALL TILES
 - F LIGHTWEIGHT CLADDING
 - G CONCRETE FLOOR

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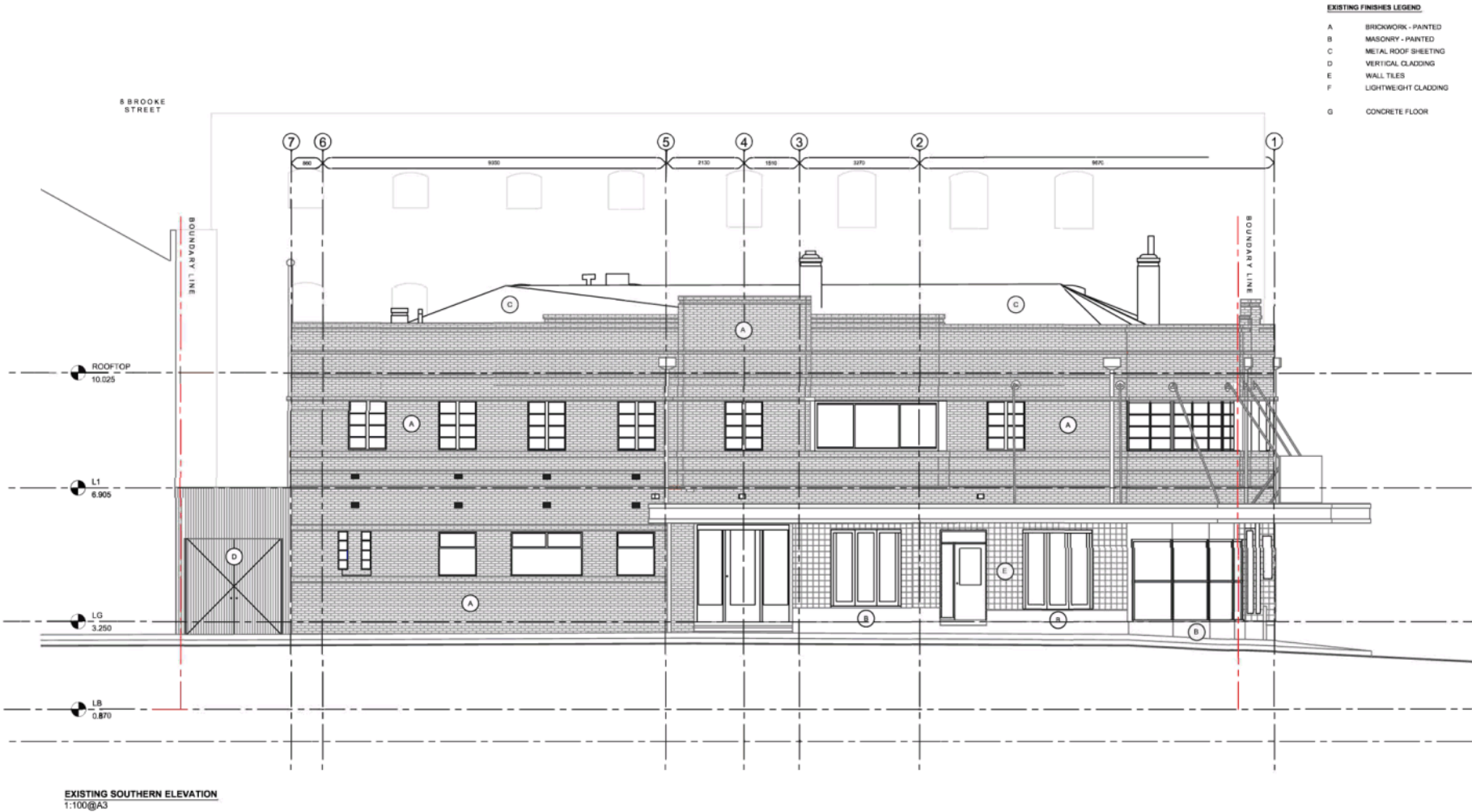
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Project No.	Date	Scale	
2112	MAY 2022	1:100 @ A3	
Project Stage	Drawn	Checked	
NOT FOR CONSTRUCTION	AH	CB	

Drawing No.	Revision
TP-100	
EXISTING GROUND FLOOR PLAN	



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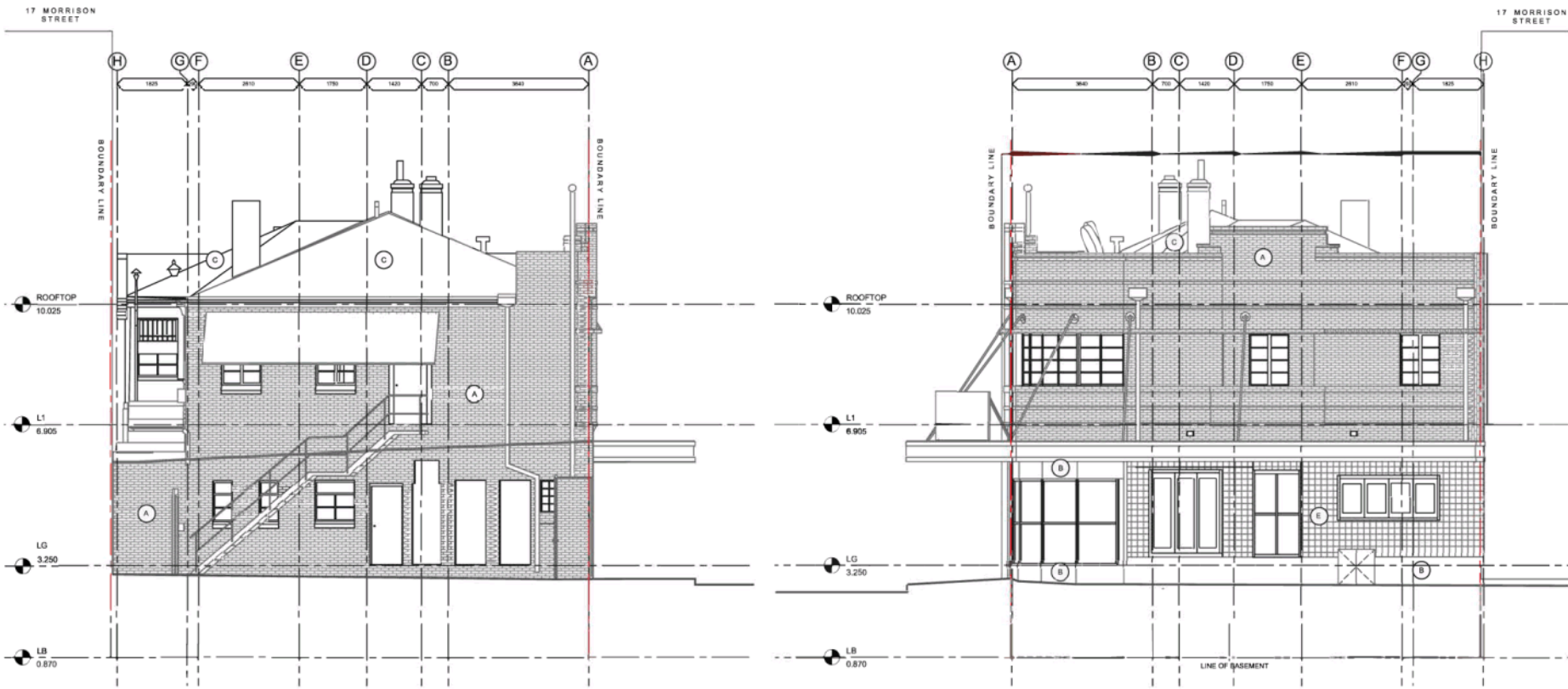
Project Type & Location
TELEGRAPH HOTEL - 19 MORRISON ST, HOBART, TASMANIA

Project No. 2112	Date MAY 2022	Scale 1:100 @ A3
Project Stage NOT FOR CONSTRUCTION	Drawn AH	Checked CB

Drawing No.
TP-101

Revision

Drawing Title
EXISTING ELEVATION



EXISTING WESTERN ELEVATION
1:100@A3

EXISTING EASTERN ELEVATION
1:100@A3

EXISTING FINISHES LEGEND

- A BRICKWORK - PAINTED
- B MASONRY - PAINTED
- C METAL ROOF SHEETING
- D VERTICAL CLADDING
- E WALL TILES
- F LIGHTWEIGHT CLADDING
- G CONCRETE FLOOR

Approved - General
Manager Consent Only
GMC-22-26 08/06/2022

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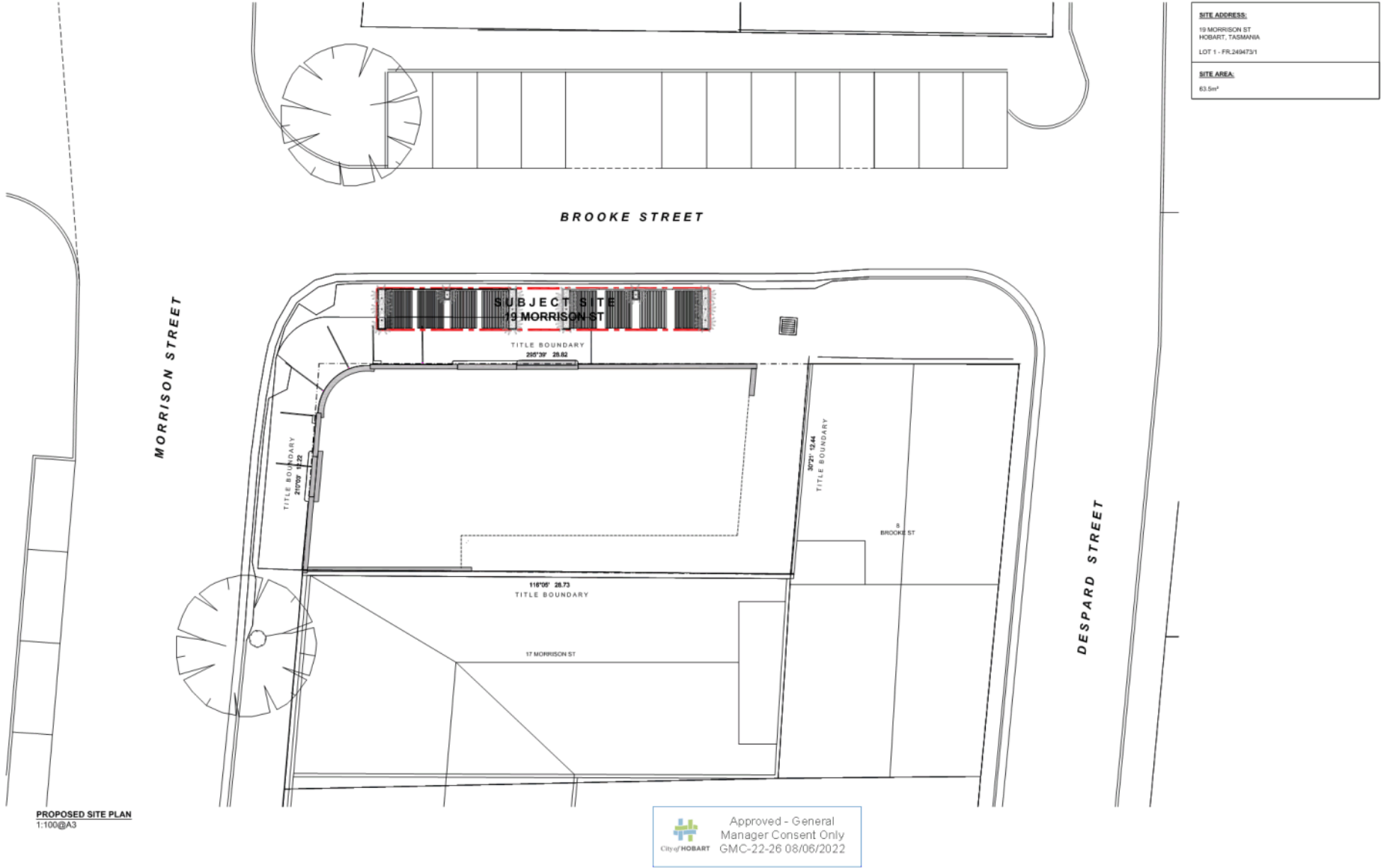
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Project Type & Location
TELEGRAPH HOTEL - 19 MORRISON ST, HOBART, TASMANIA
Project No. 2112 Date MAY 2022 Scale 1:100 @ A3
Project Stage NOT FOR CONSTRUCTION Drawn AH Checked CB

Drawing No. TP-102
Revision
Drawing Title
EXISTING ELEVATIONS



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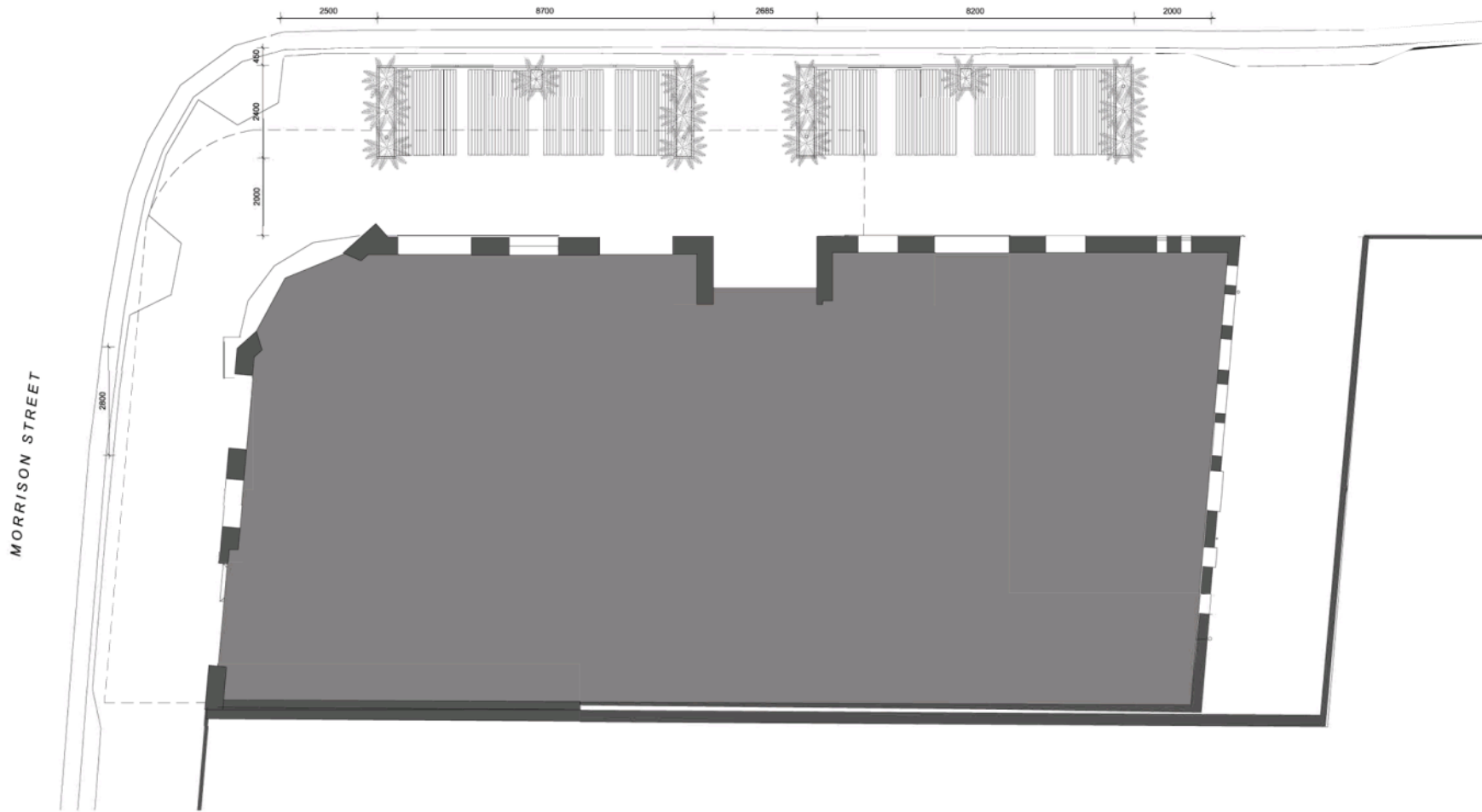
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Project Type & Location			
TELEGRAPH HOTEL - 19 MORRISON ST, HOBART, TASMANIA			
Project No.	Date	Scale	
2112	MAY 2022	1:100 @ A3	
Project Stage	Drawn	Checked	
NOT FOR CONSTRUCTION	AH	CB	

Drawing No.	Revision
TP-103	
PROPOSED SITE PLAN	



GROUND FLOOR PLAN
1:100 @ A3

City of HOBART
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Manager Consent Only
GMC-22-26 08/06/2022

GENERAL NOTES:

WRITTEN DIMENSIONS TAKE PREFERENCE OVER SCALE.
CONFIRM ALL LEVELS & DIMENSIONS ON SITE BEFORE COMMENCEMENT OF ANY WORKS.
ALL WORKS TO COMPLY WITH B.C.A. REGULATIONS AND LOCAL COUNCIL REQUIREMENTS. ALL WORKS TO COMPLY WITH ALL RELEVANT S.A.A. CODES.

SETDOWN IN SLAB ABATHROOM TO ALLOW FOR CEMENT SCREED BED AND FALL OF TILES TOWARDS FLOOR WASTE.
BRADFORD SOUNDSCREEN PLUS ACOUSTIC INSULATION TO INTERNAL WALLS SURROUNDING RESROOMS.
NEW PAINTING TO ALL INTERNAL WALLS & CEILING - REFER TO FINISHES SCHEDULE.
FLOORS TO WET AREAS TO HAVE IMPERVIOUS FLOOR FINISH AND BE FULLY TANKED TO AS 3740 - 2010.

CONSULTANT NOTES

REFER ELECTRICAL CONSULTANT DOCUMENTATION FOR ALL ELECTRICAL EQUIPMENT LOCATIONS AND SPECIFICATIONS.
REFER MECHANICAL CONSULTANT DOCUMENTATION FOR ALL HVAC/MECHANICAL EQUIPMENT LOCATIONS AND SPECIFICATIONS.
REFER HYDRAULIC ENGINEER DOCUMENTATION FOR ALL DRAINAGE AND WASTE POINTS.
REFER INTERIOR DESIGNER DOCUMENTATION FOR DETAILS OF JOINERY, INTERNAL FINISHES AND FIXTURES.

FO

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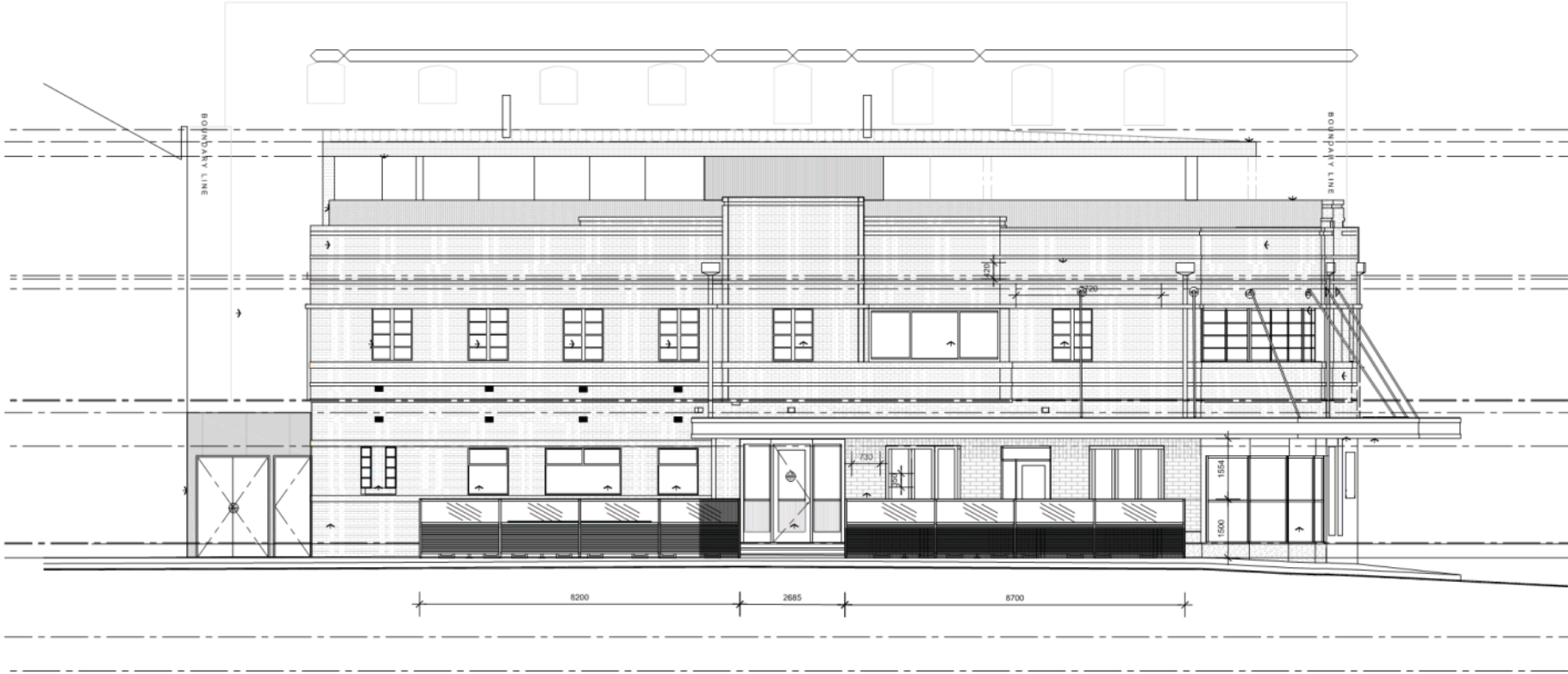
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Project No.	Date	Scale	
2112	MAY 2022	1:100 @ A3	
Project Stage	Drawn	Checked	
NOT FOR CONSTRUCTION	AH	CB	

Drawing No.	Revision
TP-104	
Drawing Title	
GA - GROUND FLOOR PLAN	



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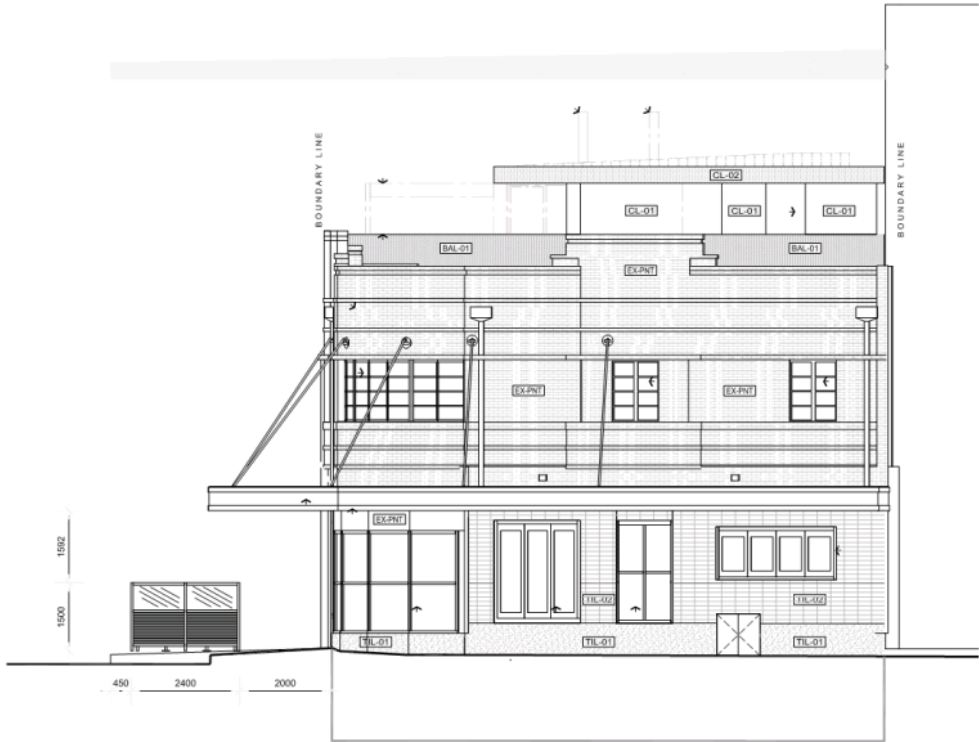
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Project Type & Location			
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Project No.	Date	Scale	
2112	MAY 2022	1:100 @ A3	
Project Stage	Drawn	Checked	
NOT FOR CONSTRUCTION	AH	CB	

Drawing No.	Revision
TP-105	
Drawing Title	
PROPOSED ELEVATION	



GENERAL NOTES:
ALL TABLES, SEATS AND BARRIERS TO BE
CONSTRUCTED TO ALLOW FOR FOOTPATH
SLOPE TO ACHIEVE LEVEL SEATING.

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GMC-22-26 08/06/2022

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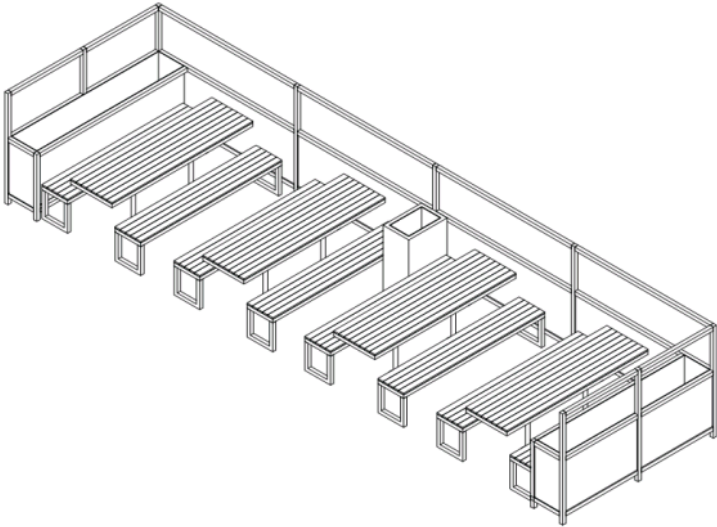
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Project Type & Location			
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Project No.	Date	Scale	
2112	MAY 2022	1:100 @ A3	
Project Stage	Drawn	Checked	
NOT FOR CONSTRUCTION	AH	CB	

Drawing No.	Revision
TP-106	
Drawing Title	
PROPOSED ELEVATIONS	

211219
TELEGRAPH HOTEL
EXTERIOR PLATFORM SEATING
19 MORRISON ST, HOBART, TASMANIA

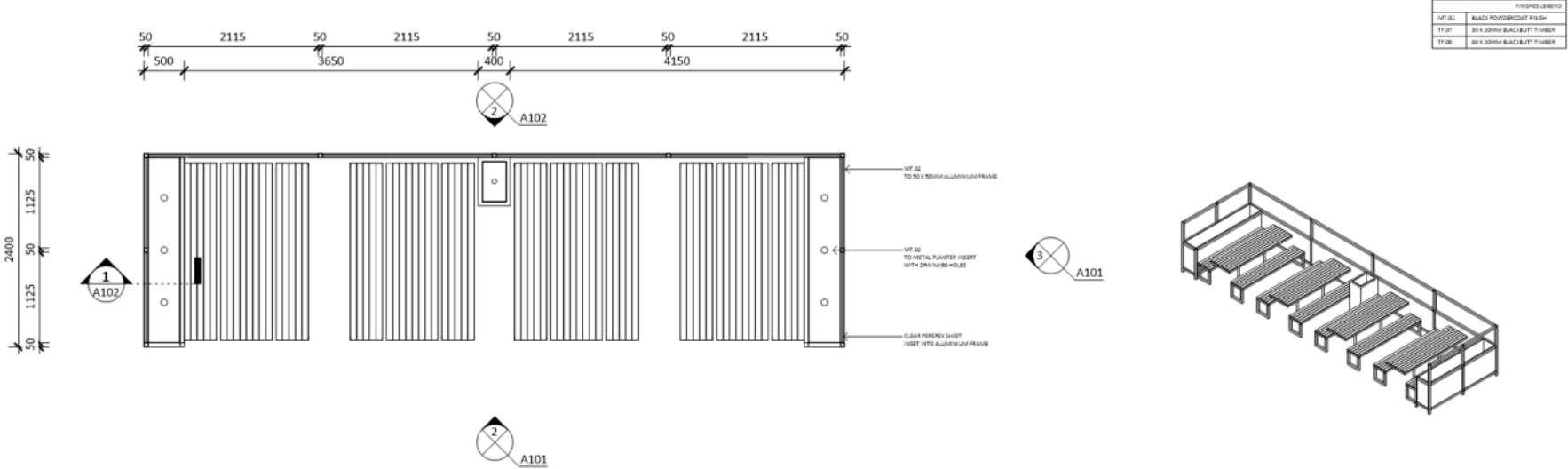


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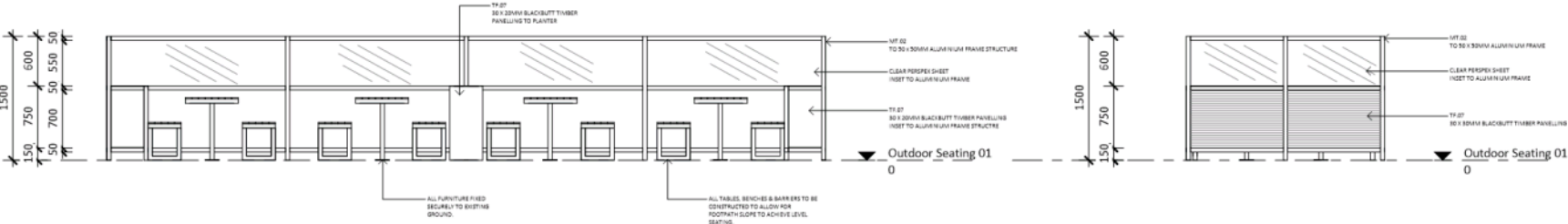
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Project Name & Location			
TELEGRAPH HOTEL - 19 MORRISON ST, HOBART, TASMANIA			
Project No.	Date	Scale	
211219	22/05/22		
Issue Status	Drawn	Checked	
	KN	Checker	

Drawing No.	Revision
A100	
Drawing Title	Area
Cover	



01 | DETAIL PLAN - OUTDOOR BARRIER 01
1:50 | A3



E01 | FRONT ELEVATION
1:50 | A3

E02 | RIGHT SIDE ELEVATION
1:50 | A3

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GMC-22-26 08/06/2022



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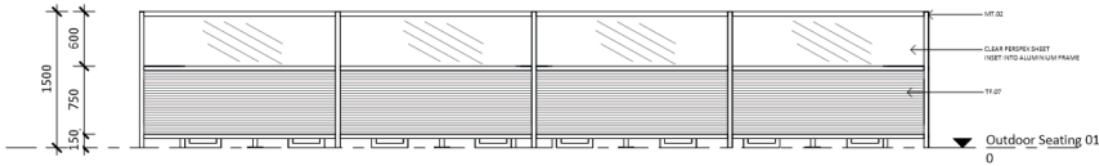
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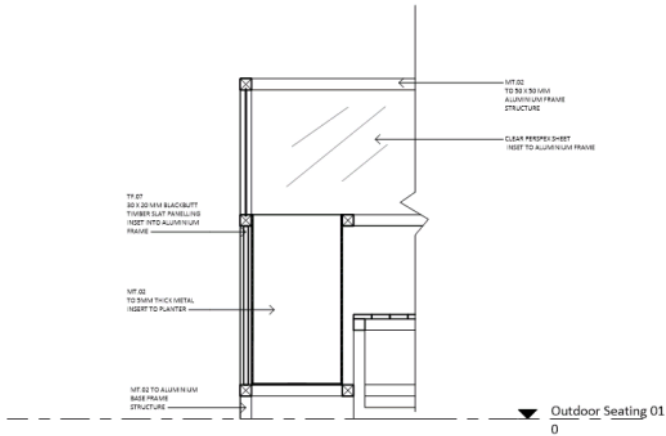
Project Name & Location
TELEGRAPH HOTEL - 19 MORRISON ST, HOBART, TASMANIA
Project No.
211219
Issue Status
Date
20/05/22
Scale
1 : 50
Drawn
KN
Checked
Checker

Drawing No.
Revision
A101
Drawing Title
Barrier 01 - Plan & Elevation
Area

MATERIALS	
GL 04	5MM THICK CLEAR GLASS
MT 02	BLACK POWDERCOAT FINISH
TY 07	80 X 20MM BLACK-BUTT TIMBER
TY 03	80 X 20MM BLACK-BUTT TIMBER



E03 | BACK ELEVATION
1:50 | A3



S01 | SECTION DETAIL
1:20 | A3

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GMC-22-26 08/06/2022

0 1 2 3 4 5m



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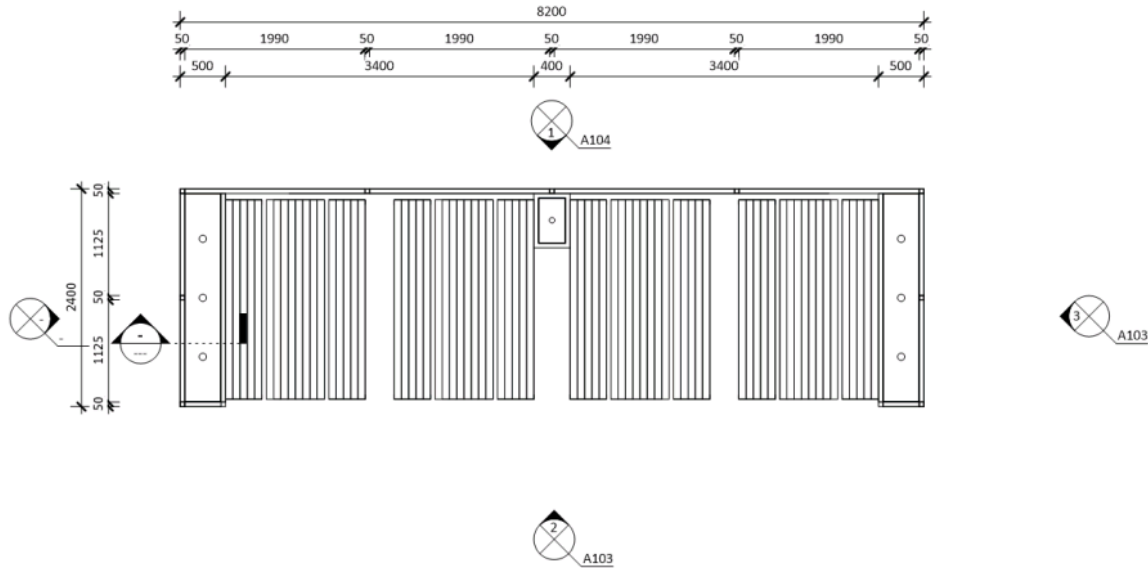
Project Name & Location
TELEGRAPH HOTEL - 19 MORRISON ST, HOBART, TASMANIA

Project No.	Date	Scale
211219	20/05/22	As indicated
Issue Status	Drawn	Checked
	KN	Checker

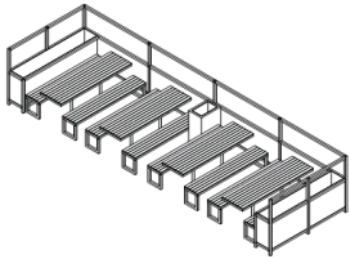
Drawing No. Revision

A102

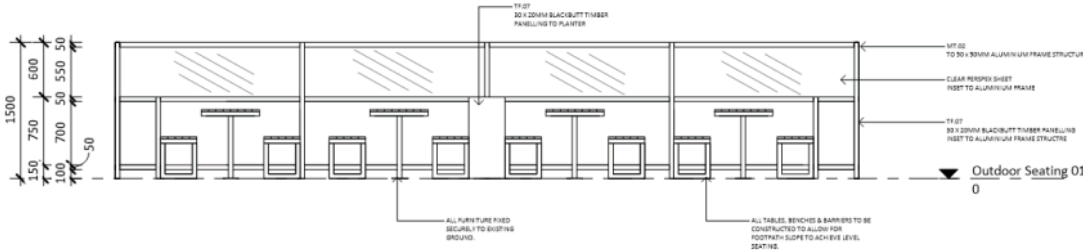
Drawing Title
Barrier 01 - Elevation & Section



FINISHES LEGEND	
MT.02	BLACK POWDERCOAT FINISH
TY.07	30 X 20MM BLACK BUTT TIMBER
TY.06	30 X 20MM BLACK BUTT TIMBER



01 | DETAIL PLAN - OUTDOOR BARRIER 02
1:50 | A3



E01 | FRONT ELEVATION
1:50 | A3

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City of HOBART GMC-22-26 08/06/2022

E02 | RIGHT SIDE ELEVATION
1:50 | A3

0 1 2 3 4 5m



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Project Name & Location

TELEGRAPH HOTEL - 19 MORRISON ST, HOBART, TASMANIA

Project No.

211219

Issue Status

Date

06/20/22

Scale

1 : 50

Drawn

KN

Checked

Checker

Drawing No.

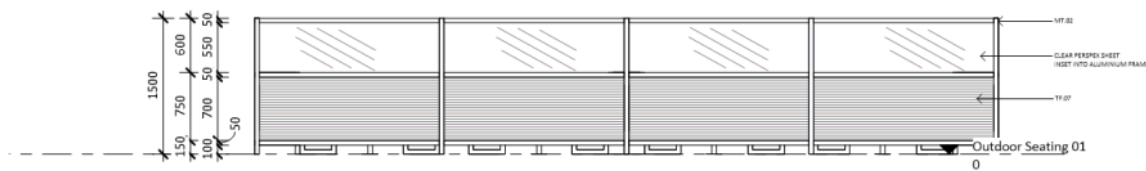
A103

Drawing Title
Barrier 02 - Plan & Elevations

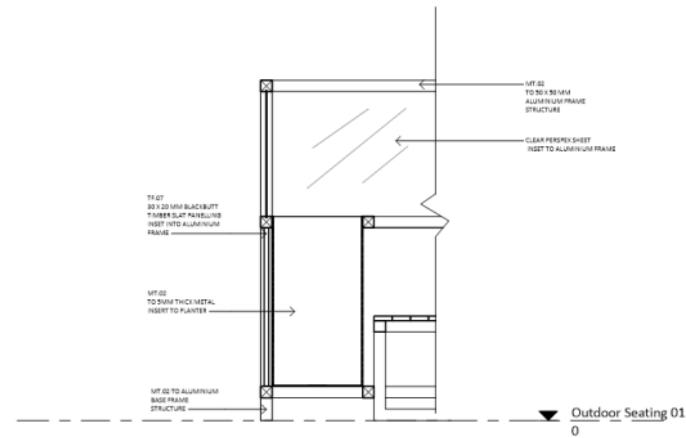
Revision

Area

FINISHES ABBREV	
BL04	3MM THICK CLEAR GLASS
MT 02	BLACK POWDERCOAT FINISH
TF 07	80 X 20MM BLACK BUTT TIMBER
TF 03	80 X 20MM BLACK BUTT TIMBER



E03 | BACK ELEVATION
1:50 | A3



S01 | SECTION DETAIL
1:20 | A3



0 1 2 3 4 5m



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Project Name & Location

TELEGRAPH HOTEL - 19 MORRISON ST, HOBART, TASMANIA

Project No.

211219

Issue Status

Date

06/20/22

Scale

As indicated

Drawn

KN

Checked

Checker

Drawing No.

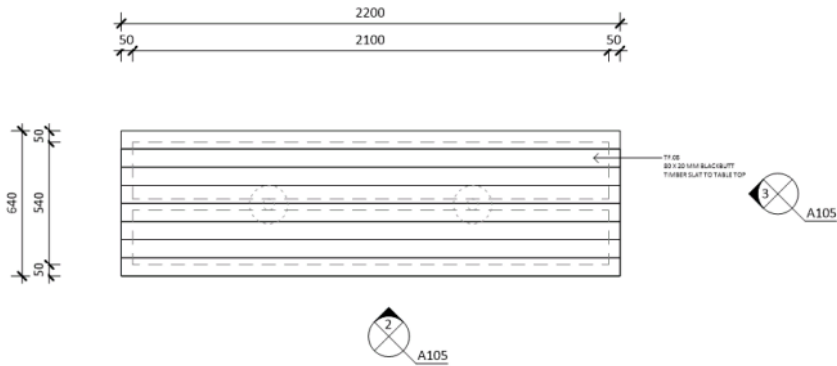
A104

Revision

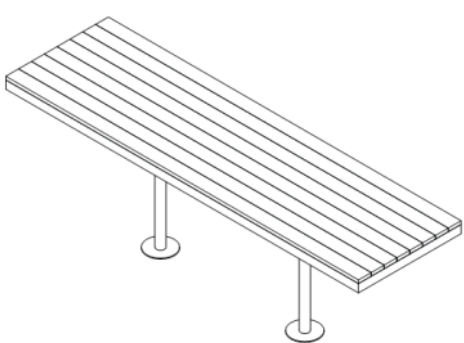
Drawing Title
Barrier 02 - Elevation & Section

Area

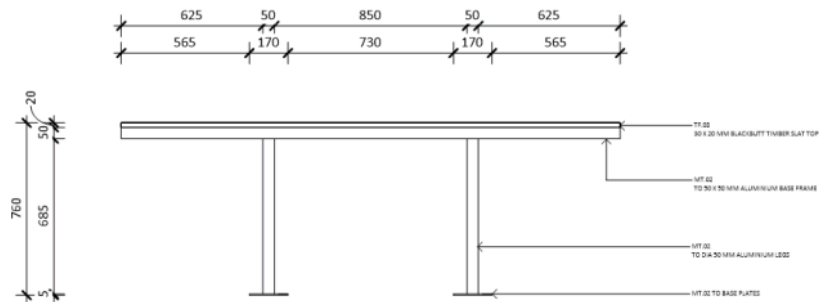
FINISHES ABBREV	
BL-04	2MM THICK CLEAR GLASS
MT-02	BLACK POWDERCOAT FINISH
TF-07	80 X 20MM BLACK BUTT TIMBER
TF-03	80 X 20MM BLACK BUTT TIMBER



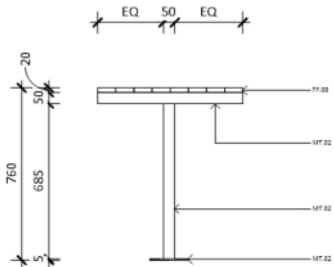
01 | DETAIL PLAN - FLOOR FIXED TABLE
1:20 | A3



A01 | FLOOR FIXED TABLE AXONOMETRIC
1:20 | A3



E01 | FRONT ELEVATION
1:20 | A3



E02 | RIGHT SIDE ELEVATION
1:20 | A3

Approved - General
Manager Consent Only
GMC-22-26 08/06/2022



0 1 2 3 4 5m



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Project Name & Location

TELEGRAPH HOTEL - 19 MORRISON ST, HOBART, TASMANIA

Project No.

211219

Issue Status

20/05/22

Date

20/05/22

Scale

1:20

Drawn

KN

Checked

Checker

Drawing No.

A105

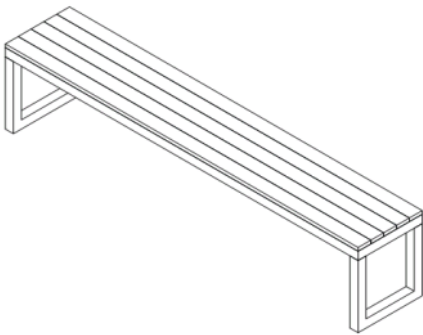
Drawing Title

Table Detail

Revision

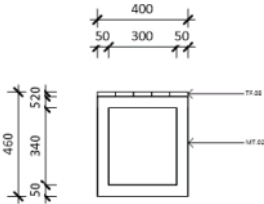
Area

FINISHES LEGEND	
MF.02	BLACK POWDERCOAT FINISH
TF.07	50 X 25MM BLACKBUTT TIMBER
TF.08	50 X 25MM BLACKBUTT TIMBER



01 | DETAIL PLAN - FIXED BENCH SEAT
1:20 | A3

A01 | FIXED BENCH SEAT AXONOMETRIC
1:20 | A3



E01 | FRONT ELEVATION
1:20 | A3

E02 | RIGHT SIDE ELEVATION
1:20 | A3



0 1 2 3 4 5m



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Project Name & Location		
TELEGRAPH HOTEL - 19 MORRISON ST, HOBART, TASMANIA		
Project No.	Date	Scale
211219	20/05/22	1 : 20
Issue Status	Drawn	Checked
	KN	Checker

Drawing No.	Revision
A106	
Drawing Title	Area
Bench Seat Detail	

7.2 APPLICATIONS UNDER THE HOBART INTERIM PLANNING SCHEME 2015

7.2.1 325 ELIZABETH STREET, 321-323A ELIZABETH STREET AND 16A LEFROY STREET, NORTH HOBART - PARTIAL DEMOLITION, ALTERATIONS, PARTIAL CHANGE OF USE TO CARPARK AND ASSOCIATED WORKS PLN-22-266 - FILE REF: F22/82778

Address:	325 Elizabeth Street, 321-323A Elizabeth Street and 16A Lefroy Street, North Hobart
Proposal:	Partial Demolition, Partial Change of Use to Carpark and Associated Works
Expiry Date:	30 August 2022
Extension of Time:	Not applicable
Author:	Deanne Lang

RECOMMENDATION

That pursuant to the *Hobart Interim Planning Scheme 2015*, the Council approve the application for partial demolition, alterations, partial change of use to car park, and associated works at 325 Elizabeth Street and 321-323A Elizabeth Street and 16A Lefroy Street, North Hobart 7000. for the reasons outlined in the officer's report and a permit containing the following conditions be issued:

GEN

The use and/or development must be substantially in accordance with the documents and drawings that comprise PLN-22-266 325 ELIZABETH STREET NORTH HOBART TAS 7000 - Final Planning Documents except where modified below.

Reason for condition

To clarify the scope of the permit.

TW

The use and/or development must comply with the requirements of TasWater as detailed in the form Submission to Planning Authority Notice, Reference No. TWDA 2022/00686-HCC dated 18 May 2022 as attached to the permit.

Reason for condition

To clarify the scope of the permit.

PLN 17

The lighting within the car park at 321-323A and 325 Elizabeth Street must operate in accordance with Australian Standard AS 4282 - Control of the obtrusive effects of outdoor lighting.

Reason for condition

To ensure that the non-residential use does not unreasonably impact residential amenity.

ENG 12

Prior to commencement of any work on site (including demolition and/or site disturbance), a Construction Waste Management Plan must be submitted and approved as a Condition Endorsement.

The Construction Waste Management Plan must include;

- Provisions for the handling, transport, and disposal, of demolition material, including any contaminated waste and recycling opportunities, and
- Provisions for commercial waste services (e.g., service areas) for the handling, storage, transport and disposal of post-construction solid waste and recycle bins from the development.

The approved Construction Waste Management Plan must be implemented throughout construction, and all work required must be undertaken in accordance with the approved plan.

Advice:

This condition requires further information to be submitted as a Condition Endorsement. Refer to the Condition Endorsement advice at the end of this permit.

It is recommended that the developer liaise with the Council's City Resilience Unit regarding reducing, reusing and recycling materials associated with demolition on the site to minimise solid waste being directed to landfill. Further information can also be found on the Council's [website](#).

Reason for condition

To ensure that solid waste management from the site meets the Council's requirements and standards.

ENG sw1

Prior to first occupation or commencement of use (whichever occurs first), all stormwater from the proposed development (including but not limited to; roofed areas, ag drains, retaining wall ag drains, and impervious surfaces, such as roadways or paved areas) must be drained to the Council's stormwater infrastructure.

Any private or private shared stormwater system passing through third-party land must have sufficient receiving capacity.

Advice:

Under section 23 of the Urban Drainage Act 2013 it is an offence for a property owner to direct stormwater onto a neighbouring property.

Reason for condition

To ensure that stormwater from the site will be discharged to a suitable Council approved outlet.

SW 1

Prior to the issue of any approval under the *Building Act 2016* or the commencement of work on the site (whichever occurs first), a pre-construction structural condition assessment and visual record (eg video and photos) of the Hobart City Council's stormwater infrastructure within/adjacent to the proposed development (including the mains and open Rivulet) must be submitted to the City of Hobart as a Condition Endorsement.

The condition assessment must include at least:

1. a site plan clearly showing the location of the investigation, with access points and all segments and nodes shown and labelled, with assets found to have a different alignment from that shown on the City of Hobart's plans to be marked on the ground and on the plan;
2. a digital recording of a CCTV inspection and written condition

assessment report in accordance with WSA 05-2013 Conduit Inspection Reporting Code of Australia, in a 'WinCan' compatible format; and

3. photos of any existing drainage structures connected to or modified as part of the development.

The pre-construction condition assessment will be relied upon to establish the extent of any damage caused to Hobart City Council's stormwater infrastructure during construction. If the owner/developer fails to provide the City of Hobart with an adequate pre-construction condition assessment then any damage to the City of Hobart's infrastructure identified in the post-construction condition assessment will be the responsibility of the owner/developer.

Advice:

This condition requires further information to be submitted as a Condition Endorsement. Refer to the Condition Endorsement advice at the end of this permit.

SW 2

Prior to occupancy or the commencement of the approved use (whichever occurs first), a post-construction structural condition assessment and visual record (eg video and photos) of the Hobart City Council's stormwater infrastructure within/adjacent to the proposed development (including mains and open R/vulet), must be submitted to the City of Hobart.

The condition assessment must include at least:

1. a site plan clearly showing the location of the investigation, with access points and all segments and nodes shown and labelled, with assets found to have a different alignment from that shown on the City of Hobart's plans shall be marked on the ground and on the plan;
2. a digital recording of a CCTV inspection and written condition assessment report in accordance with WSA 05-2013 Conduit Inspection Reporting Code of Australia, in a 'WinCan' compatible format; and
3. photos of any existing drainage structures connected to or modified as part of the development.

The pre-construction condition assessment will be relied upon to establish the extent of any damage caused to the Hobart City Council's stormwater infrastructure during construction. If the owner/developer fails to provide the City of Hobart with an adequate pre-construction condition assessment then any damage to the Hobart City Council's infrastructure identified in the post- construction CCTV will be deemed to be the responsibility of the owner/developer.

SW 5

An approved Construction Management Plan must be implemented.

A Construction Management Plan (CMP) must be submitted and approved prior to commencement of works. The CMP must be prepared by suitably qualified and experienced persons and must:

1. detail the proposed construction methodology and timing, including extent of earthworks;
2. identify all potential risks to the Rivulet and the wider environment from construction works including, but not limited to, construction loading, traffic loading, excavation works, footing construction, vibrations, undermining, flood, noise, pollution and environmental harm;
3. include:
 - identification and disposal of any potentially contaminated waste and asbestos;
 - proposed hours of work;
 - identification of potentially noisy construction phases, such as operation of rock- breakers, explosives or pile drivers, and proposed measures to minimise the potential for noise nuisance;
 - a soil and water management plan, generally consistent with the Soil and Water Management Plan by Pitt & Sherry dated 24 May 2022, but providing plans and details, and addressing the timing of in-stream works and need for flow diversion;
4. specify measures to eliminate or otherwise mitigate to as low as reasonably practicable all identified risks; and

5. include a monitoring regime. SW 9

SW 9

Prior to commencement of the approved use (whichever occurs first), stormwater pre-treatment for stormwater discharges from the development must be installed.

A stormwater management report and design must be submitted and approved as a Condition Endorsement, prior to the issue of any approval under the *Building Act 2016* or the commencement of work on the site (whichever occurs first). The stormwater management report and design must be prepared by a suitably qualified engineer and must:

1. include detailed design of the proposed treatment train, including final estimations of contaminant removal;
2. include detailed design and supporting calculations of the detention sized such that there is no increase in flows from the developed site up to 5% AEP event showing
 1. the layout, the inlet and outlet (including long section), outlet size, overflow mechanism and invert level;
 2. all assumptions must be clearly stated;
3. include a supporting maintenance plan, which specifies the required maintenance measures to check and ensure the ongoing effective operation of all systems, such as: inspection frequency; cleanout procedures; descriptions and diagrams of how the installed systems operate; details of the life of assets and replacement requirements. The likely lifecycle costs and requirements for any Council assets must be acceptable to the proposed asset owner.

All work required by this condition must be undertaken and maintained in accordance with the approved stormwater management report and design.

Advice:

This condition requires further information to be submitted as a Condition Endorsement. Refer to the Condition Endorsement advice at the end of this permit.

SW 11

Measures to minimise impact on the overland flow path and mitigate flood risk from the critical 1% AEP at 2100 event must be installed prior to occupancy or issue of any completion (whichever occurs first). All works within the flood zone, including the walls, bridge and lowered bed of the Rivulet, must be designed, constructed and maintained to ensure the long-term protection and access to the Rivulet void.

Detailed engineering drawings must be submitted as a Condition Endorsement prior to the issue of any approval under the *Building Act 2016* or the commencement of work on the site (whichever occurs first). These must include (but are not limited to):

1. certification from an accredited and qualified structural engineer that all proposed structures within the flood zone are designed to resist inundation, erosion, undermining and likely forces from a flood event (including debris loading such as vehicle impacts) and the long-term base flows of the Rivulet
2. detailed design of works within/over the Rivulet and mitigation measures such as permeable fencing, wall heights and kerb levels in accordance with the Pitt and Sherry Inundation Assessment Rev01 dated 30/6/22.
3. details of management of the flood zone including signage and measures to prevent blockage of the overland flow path (such as bollards and/or restrictions on use of the area);
4. a flood management summary plan from a suitably qualified and experienced expert that outlines the obligations for future property owners to flood and overland flow management, including:
 - a) the flood risk to the site, including depth, extent and hazard ratings for the 1% AEP at 2100 event;
 - b) identification of all measures to maintain and maximise the overland flow path through the site and their maintenance and;
 - c) identification of all measures within/over the flood zone, including the works over/within the Rivulet and the flood mitigation measures, and their required maintenance and inspections.

All work required by this permit must be undertaken and maintained in accordance with the approved documents.

Advice:

This condition requires further information to be submitted as a Condition Endorsement. Refer to the Condition Endorsement advice at the end of this permit.

Council notes separate consent under s13 of the Urban Drainage Act and s73 of the Building Act 2016 will be required for the works. This will require appropriate insurances, and ongoing indemnities.

SW 13

All structures within the flood zone, and over or within the Rivulet (including Rivulet wall, bridge, fencing, and kerbing) and flood mitigation measures must be inspected by a suitably qualified and accredited engineer.

Certification from a suitably qualified and accredited engineer that the installation has been constructed in accordance with the approved design must be provided to the City of Hobart prior to commencement of use or completion of these works (whichever occurs first).

SW 14

All structures within the flood zone and within one metre of/ over the Rivulet must be inspected by a registered surveyor.

Certification from a registered surveyor that the void space within the Rivulet (ie wall locations and bridge soffit and rivulet invert level) have not been reduced from those shown on the approved engineering drawings and Inundation Assessment must be provided to the City of Hobart prior to commencement of use or completion of these works (whichever occurs first).

ENG tr1

Prior to first occupation or commencement of use (whichever occurs first) the parking area (including circulation roadways, parking modules, aisles, and spaces, pedestrian pathways, including those

used by people with disabilities) approved by this permit must be signed and line marked in accordance with AS/NZS 2890.1:2004, or the design documentation (including reports and plans) which form part of this permit.

Reason for condition

In the interests of user safety and the amenity of the occupiers of the development.

ENG tr2

A Construction Traffic and Parking Management Plan must be submitted and approved as a Condition Endorsement prior to the issue of any approval under the *Building Act 2016* (including demolition) or commencement works (e.g., site disturbance) (whichever occurs first).

The Construction Traffic and Parking Management Plan must;

- Be prepared by a suitably qualified person,
- Develop a communications plan to advise the wider community (including but not limited to; users, permit holders, businesses, neighbors etc.) of the traffic and parking impacts during construction, Include start dates and finish dates of various stages of works,
- Include times that rigid vehicles (e.g., MRV) and other traffic associated with the works will be allowed to operate, and
- Nominate a superintendent (or the like) responsible for the implementation of the approved plan, who must also be available as a direct contact to the City of Hobart and/or
- community/public members regarding all relevant operations, any immediate traffic issues, and hazards that may arise.

The approved Construction Traffic and Parking Management Plan must be implemented throughout construction, and all work required must be undertaken in accordance with the approved plan.

Advice:

This condition requires further information to be submitted as a Condition Endorsement. Refer to the Condition Endorsement advice at the end of this permit.

Reason for condition

To ensure the safety of vehicles entering and leaving the development and the safety and access around the development site for the general public and adjacent businesses.

ENG 2a

Prior to first occupation or commencement of use (whichever occurs first), physical controls (as defined by AS/NZS 2890.1:2004) must be installed where and how required by the Australian Standard, and the design documentation (including reports and plans) which form part of this permit. This includes (vehicular) barriers compliant with the Australian Standard AS/NZS 1170.1:2002, to prevent vehicles running off the edge of a parking (trafficable) area. Physical controls installed must;

1. not limit the parking area approved by this permit, and
2. be in accordance with the Australian Standard AS/NZS 2890.1:2004.

Any departure from the design documentation (including reports and plans) which form part of this permit must be approved by the Director City Life via a condition endorsement application.

Reason for condition

To ensure the safety of users of the access driveway and parking module and compliance with the standard.

ENG 3a

Prior to first occupation or commencement of use (whichever occurs first), the parking area (including circulation roadways, parking modules, aisles, and spaces) must be constructed in accordance with AS/NZS 2890.1:2004, or the design documentation (including reports and plans) which form part of this permit.

Any departure from the design documentation (including reports and plans) which form part of this permit must be approved by the Director City Life via a condition endorsement application.

Reason for condition

To ensure the safety of users of the access and parking module, and compliance with the relevant Australian Standard.

ENG 4

Prior to first occupation or commencement of use (whichever occurs first), the parking area (including circulation roadways, parking modules, aisles, and spaces) approved by this permit must be constructed to a sealed standard (spray seal, asphalt, concrete, pavers, or equivalent Council approved) and surface(s) drained to the Council's stormwater infrastructure.

Reason for condition

To ensure the safety of users of the access driveway and parking module, and that it does not detract from the amenity of users, adjoining occupiers or the environment by preventing dust, mud and sediment transport.

ENG 5

The number of off-street car parking spaces;

- approved for use on site by this permit is Thirty-Six (36), and
- maintained on site by this permit is Thirty-two (32).

Prior to first occupation or commencement of use (whichever occurs first), all car parking spaces must be delineated by means of white or yellow lines

80mm to 100mm wide, or white or yellow pavement markers in accordance with Australian Standards AS/NZS 2890.1 2004.

Reason for condition

To ensure the provision of parking for the use is safe and efficient.

ENG 5b

Prior to first occupation or commencement of use (whichever occurs first), all bicycle parking must be constructed in accordance with with AS/NZS 2890.3:2015, or the design documentation (including reports and plans) approved by this permit.

Reason for condition

To ensure the safety of users of the access and parking module, and compliance with the relevant Australian Standard.

ENG 6

The number of bicycle parking spaces approved for use on site by this permit is Six (6).

Reason for condition

To clarify the scope of the permit.

ENG 9

Prior to first occupation or commencement of use (whichever occurs first), all car parking spaces for people with disabilities must be constructed and delineated in accordance with AS/NZS 2890.6: 2009.

Reason for condition

In the interests of vehicle user safety and the amenity of the development.

ENG s1

Prior to first occupation or commencement of use (whichever occurs first) the parking area (including, circulation roadways, parking aisles, parking spaces, pedestrian pathways, including those used by people with disabilities) approved by this permit must be adequately lit in accordance with the minimum lighting levels specified in AS/NZS 1158.3.1:2020, or the design documentation (including reports and plans) which form part of this permit.

Reason for condition

To ensure easy and efficient use, promote safety of users, minimize opportunities for crime or antisocial behavior, and prevent unreasonable light overspill impacts.

ENV 12

A weed management plan, prepared by a suitably qualified and experienced person, must be submitted and approved as a Condition Endorsement, prior to the commencement of work. The weed management plan must:

1. Detail the initial treatment of weeds declared under the *Tasmanian Weed Management Act 1999* and any other weeds

- that should be removed from the site
2. The control methods should be appropriate for this waterway site.
 3. A follow-up treatment is also to be specified.

All work required by this condition must be undertaken in accordance with the approved weed management plan.

Advice:

This condition requires further information to be submitted as a Condition Endorsement. Refer to the Condition Endorsement advice at the end of this permit.

Reason for condition

To ensure the use/development does not result in unnecessary or unacceptable loss of waterway and biodiversity values.

ENV 2

Sediment and erosion control measures, sufficient to prevent sediment leaving the site and in accordance with an approved soil and water management plan (SWMP), must be installed prior to the commencement of work and maintained until such time as all disturbed areas have been stabilised and/or restored or sealed to the Council's satisfaction.

A SWMP must be submitted as a Condition Endorsement prior to the issue of any approval under the *Building Act 2016* or the commencement of work, whichever occurs first. The SWMP must:

- be prepared in accordance with the Soil and Water Management on Building and Construction Sites fact sheets (Derwent Estuary Program, 2008), available [here](#).
- be prepared in accordance with the DPIPW Works in Wetlands and Waterways Manual 2003;
- reflect the recommendations of any Contaminated Site Assessment and the Pitt & Sherry Soil and Water Management Plan dated 24/5/22 submitted under this application; and
- be in accordance with the Construction Management Plan required in the above conditions.

All work required by this condition must be undertaken in accordance with the approved SWMP.

Advice:

This condition requires further information to be submitted as a Condition Endorsement. Refer to the Condition Endorsement advice at the end of this permit. The SWMP required under this condition must include plans clearly detailing and locating all protection measures required for each stage of the works (eg one for excavating and construction within the Rivulet, another for the carpark construction).

Reason for condition

To avoid the pollution and sedimentation of roads, drains and natural watercourses that could be caused by erosion and runoff from the development.

ENVHE 1

Recommendations in the following report must be implemented: Environmental Site Assessment, 321-323A and 325 Elizabeth Street, North Hobart, by Pitt and Sherry dated 17 December 2021, and Stormwater Management Plan, 321-323A Elizabeth Street Car Park, dated 25 March 2022 developed by Pitt and Sherry.

Reason for condition

To ensure that the risk to future occupants of the building remain low and acceptable.

OPS 4

The two *Eucalyptus pulchella* street trees along the Lefroy Street frontage must not be damaged to the satisfaction of the Director City Life. No vehicular access, excavation, placement of fill, storage of materials or soil disturbance is to occur within 4.5 m of the larger eucalypt or within 2.4 m of the smaller eucalypt along Lefroy Street. There must be no pruning, lopping or damage to the street trees including their trunks and roots.

Details of street tree protection measures must be clearly notated on all plans used as part of the contract specifications.

Advice:

Once the specification documents showing adequate tree protection have been approved, City Life will issue a condition endorsement (see general advice on how to obtain condition endorsement). It is recommended that documentation for condition endorsement be submitted well before submitting documentation for other approvals. Failure to address condition endorsement requirements may result in unexpected delays.

Reason for condition

To maintain the amenity value of street trees as per the City of Hobart Street Tree Strategy.

OPS 5

The Council must be compensated for the removal of the three trees from the Lefroy Street carpark in accordance with the following and to the satisfaction of the Director City Life:

1. The planting of three replacement trees on the site, within 12 months of the date of this permit, or a timeframe as otherwise agreed to by the Director City Life; and
2. Cash compensation in lieu of the planting of three further trees at a cost of \$880 per tree (\$2,640 total).

Advice:

Please call Council's Program Leader Arboriculture and Nursery, on 6238 2807, to arrange the details of the three replacement trees and to arrange payment of the cash compensation.

Once the replacement trees and the replacement fee has been arranged, City Life will issue a condition endorsement. It is recommended that documentation for condition endorsement be submitted well before submitting documentation for other approvals. Failure to address condition endorsement requirements may result in unexpected delays.

Reason for condition

Trees that are removed as part of Council projects are required to be replaced at a minimum 2 for 1 basis as per the City of Hobart Tree Removal Policy.

ADVICE

The following advice is provided to you to assist in the implementation of the planning permit that has been issued subject to the conditions above. The advice is not exhaustive and you must inform yourself of any other legislation, by-laws, regulations, codes or standards that will apply to your development under which you may need to obtain an approval. Visit the Council's [website](#) for further information.

Prior to any commencement of work on the site or commencement of use the following additional permits/approval may be required from the Hobart City Council.

CONDITION ENDORSEMENT

If any condition requires that further documents are submitted and approved, you will need to submit the relevant documentation to satisfy the condition via the Condition Endorsement Submission on Council's [online services e-planning portal](#). Detailed instructions can be found [here](#).

A fee of 2% of the value of the works for new public assets (stormwater infrastructure, roads and related assets) will apply for the condition endorsement application.

Once approved, the Council will respond to you via email that the condition has been endorsed (satisfied).

Where building approval is also required, it is recommended that documentation for condition endorsement be submitted well before submitting documentation for building approval. Failure to address condition endorsement requirements prior to submitting for building approval may result in unexpected delays.

BUILDING PERMIT

You may need building approval in accordance with the *Building Act 2016*. Click [here](#) for more information.

This is a Discretionary Planning Permit issued in accordance with section 57 of the *Land Use Planning and Approvals Act 1993*.

PLUMBING PERMIT

You may need plumbing approval in accordance with the *Building Act 2016*, *Building Regulations 2016* and the National Construction Code. Click [here](#) for more information.

BUILDING OVER AN EASEMENT

In order to build over the service easement, you will require the written consent of the person on whose behalf the easement was created, in accordance with section 74 of the *Building Act 2016*.

NEW SERVICE CONNECTION

Please contact the Hobart City Council's City Life Division to initiate the application process for your [new stormwater connection](#).

STORMWATER

Please note that in addition to a building and/or plumbing permit, development must be in accordance with the Hobart City Council's Infrastructure By law. Click [here](#) for more information.

STRUCTURES CLOSE TO COUNCILS' STORMWATER MAIN

The design of structures (including footings) must provide protection for the Council's infrastructure. For information regarding appropriate designs please contact the Council's City Life Division. You may need the General Manager's consent under section 13 of the *Urban Drainage Act 2013* and consent under section 73 or 74 of the *Building Act 2016*.

RIGHT OF WAY

The private right of way must not be reduced, restricted or impeded in any way, and all beneficiaries must have complete and unrestricted access at all times.

You should inform yourself as to your rights and responsibilities in respect to the private right of way particularly reducing, restricting or impeding the right during and after construction.

PRIVATE COVENANTS

Please be advised that this property is subject to covenants contained within the schedule of easements.

The approved development may require consent and/or a modification to the covenant to ensure it is undertaken lawfully. You must not act on this planning permit until you have obtained any necessary consent or modification to the covenant which is required for the approved development.

If you proceed with the development inconsistent with the terms of the covenant, the parties with the benefit of the covenant may be entitled to make an application in the Courts to restrain a breach. The grant of this planning permit does not constitute a waiver, modification or release of the terms of the covenant nor approval under the terms of the covenant to undertake the proposed development.

WEED CONTROL

Effective measures are detailed in the Tasmanian Washdown Guidelines for Weed and Disease Control: Machinery, Vehicles and Equipment (Edition 1, 2004). The guidelines can be obtained from the Department of Primary Industries, Parks, Water and Environment [website](#).

NOISE REGULATIONS

Click [here](#) for information with respect to noise nuisances in residential areas.

WASTE DISPOSAL

It is recommended that the developer liaise with the Council's Cleansing and Solid Waste Unit regarding reducing, reusing and recycling materials associated with demolition on the site to minimise solid waste being directed to landfill.


Further information regarding waste disposal can also be found on the Council's [website](#).


FEES AND CHARGES

Click [here](#) for information on the Council's fees and charges.

DIAL BEFORE YOU DIG

Click [here](#) for dial before you dig information.

Attachment A: PLN-22-266 - 325 ELIZABETH STREET NORTH
HOBART TAS 7000 - Planning Committee or
Delegated Report ↓ 

Attachment B: PLN-22-266 - 325 ELIZABETH STREET NORTH
HOBART TAS 7000 - CPC Agenda Documents ↓


**APPLICATION UNDER HOBART INTERIM PLANNING SCHEME 2015**

Type of Report:	Committee
Council:	29 August 2022
Expiry Date:	30 August 2022
Application No:	PLN-22-266
Address:	325 ELIZABETH STREET , NORTH HOBART 321 - 323A ELIZABETH STREET , NORTH HOBART 16 A LEFROY STREET , NORTH HOBART
Applicant:	(Hobart City Council, by their Agent Irenelnc Planning & Urban Design) C/O 49 Tasma Street
Proposal:	Partial Demolition, Alterations, Partial Change of Use to Car Park, and Associated Works
Representations:	One (1)
Performance criteria:	11.0 Inner Residential Zone Use Standards, E2.0 Potentially Contaminated Land Code, E5.0 Road and Railway Assets Code, E7.0 Stormwater Management Code, E11.0 Waterway and Coastal Protection Code, E15.0 Inundation Prone Areas Code Development Standards

1. Executive Summary

- 1.1 Planning approval is sought for Partial Demolition, Alterations, Partial Change of Use to Car Park, and Associated Works at 325 Elizabeth Street and 321-323A Elizabeth Street and 16A Lefroy Street, North Hobart.

- 1.2 More specifically the proposal includes:
- new double lane bridge over the Providence Rivulet which will connect the existing Lefroy Street carpark to the proposed carpark behind 321-323A and 325 Lefroy Street;
 - the existing Lefroy Street car park will be reduced from 34 to 33 spaces, with two DDA parking bays and 2 electric vehicle charging bays;
 - the new car parking area will consist of 36 car parking spaces, 28 public spaces and 8 private car parking spaces. Prior to 12 noon, three spaces will have 15minute restrictions;
 - the car park will operate between 8.30 am - 10pm;
 - the existing right of way between 329 and 325 Elizabeth Street will be converted to pedestrian access but is proposed to include a lockable bollard to allow for private permit vehicles, emergency and Council vehicles to access the car parking area to the rear of 321-323A and 325 Elizabeth Street;
 - landscaping within the existing and proposed car parking areas;
 - associated infrastructure within the car parking area, including voucher meters, bicycle parking racks and lighting
 - retaining wall along the southeastern bank of the Providence Rivulet;
 - demolition of an existing outbuilding and fence at 325 Elizabeth Street; and
 - demolition of the corrugated iron boundary fence between 321-323A and 317 Elizabeth Street and its replacement with a 2100mm high colorbond fence.
- 1.3 The proposal relies on performance criteria to satisfy the following standards and codes:
- 1.3.1 11.0 Inner Residential Zone - Use D11.2.0, Non Residential Use Standards D11.3.1P1-P3
 - 1.3.2 E2.0 Potentially Contaminated Land Code -E2.6.2P1 Excavation
 - 1.3.3 E5.0 Road and Railways Assets Code - Existing Road accesses and junctions E5.5.1P3
 - 1.3.4 E7.0 Stormwater Management Code - Development Standards (Stormwater Drainage and Disposal) E7.7.1P2
 - 1.3.5 E11.0 Waterway and Coastal Protection Code - Development Standards (Building and Works within a Waterway and Coastal Protection and Potable Water Supply Area) E.11.7.1P1, P4
 - 1.3.6 E15.0 Inundation Prone Areas Code Development Standards (within a Riverine Low, Medium, High Inundation Hazard Area) E15.7.5P1
- 1.4 One representation generally in support of the proposal was received within the statutory advertising period between 14 - 28 July 2022.
- 1.5 The proposal is recommended for approval subject to conditions.

- 1.6 The final decision is delegated to the Council, because the Council is the applicant, some of the works are within Council owned property which isn't a road.

2. Site Detail

- 2.1 The subject site is located within the North Hobart Shopping Precinct and consists of Council's Lefroy Street car park and private property at 321-323A and 325 Elizabeth Street which is currently used as car parking behind the existing retail shop and restaurant fronting Elizabeth Street. Access to the private parking area behind 325 and 321-323A Elizabeth Street is via a private right of way between 325 and 329 Elizabeth Street.

The area surrounding the properties are a combination of established dwellings, retail, cafes/restaurants and entertainment venues.

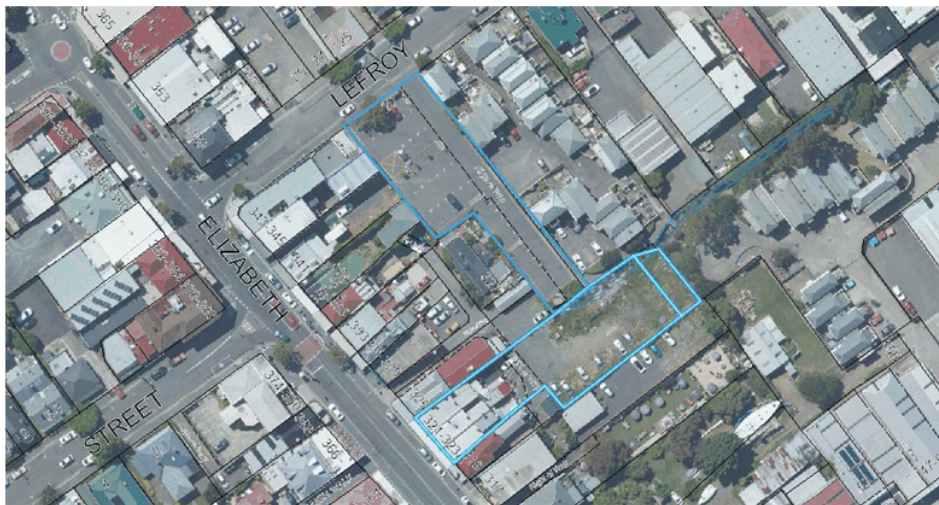


Fig. 1 - the subject site is bordered in blue



Fig. 2 - the Lefroy Street Car Park



Fig. 3 - the rear area within 325 and 321 - 323A Elizabeth Street which be upgraded to form the extension to the Lefroy Street carpark



Fig. 4 - proposed pedestrian access to the proposed car park from Elizabeth Street



Fig. 5-existing condition of the Providence Rivulet

3. Proposal

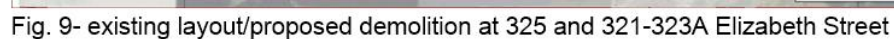
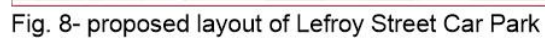
- 3.1 Planning approval is sought for Partial Demolition, Alterations, Partial Change of Use to Car Park, and Associated Works at 325 Elizabeth Street and 321-323A Elizabeth Street and 16A Lefroy Street, North Hobart.
- 3.2 More specifically the proposal is for:
- new double lane bridge over the Providence Rivulet which will connect the existing Lefroy Street carpark to the proposed carpark behind 321-323A and 325 Lefroy Street;
 - the existing Lefroy Street car park will be reduced from 34 to 33 spaces, with two DDA parking bays and 2 electric vehicle charging bays;
 - the new car parking area will consist of 36 car parking spaces, 28 public spaces and 8 private car parking spaces. Prior to 12 noon, three public spaces will have 15minute restrictions;
 - the car park will operate between 8.30 am - 10pm;
 - the existing right of way between 329 and 325 Elizabeth Street will be converted to pedestrian access but is proposed to include a lockable bollard to allow for private car spaces, emergency and Council vehicles to access the car parking area to the rear of 321-323A and 325 Elizabeth Street;
 - landscaping within the existing and proposed car parking areas;
 - associated infrastructure within the car parking area, including voucher meters, bicycle parking racks and lighting
 - retaining wall along the southeastern bank of the Providence Rivulet;
 - demolition of an existing outbuilding and fence at 325 Elizabeth Street; and
 - demolition of the corrugated iron boundary fence between 321-323A and 317 Elizabeth Street and its replacement with a 2100mm high colorbond fence.



Fig. 6 - proposed (final) car park layout



Fig. 7 Existing layout of the Lefroy Street Car Park



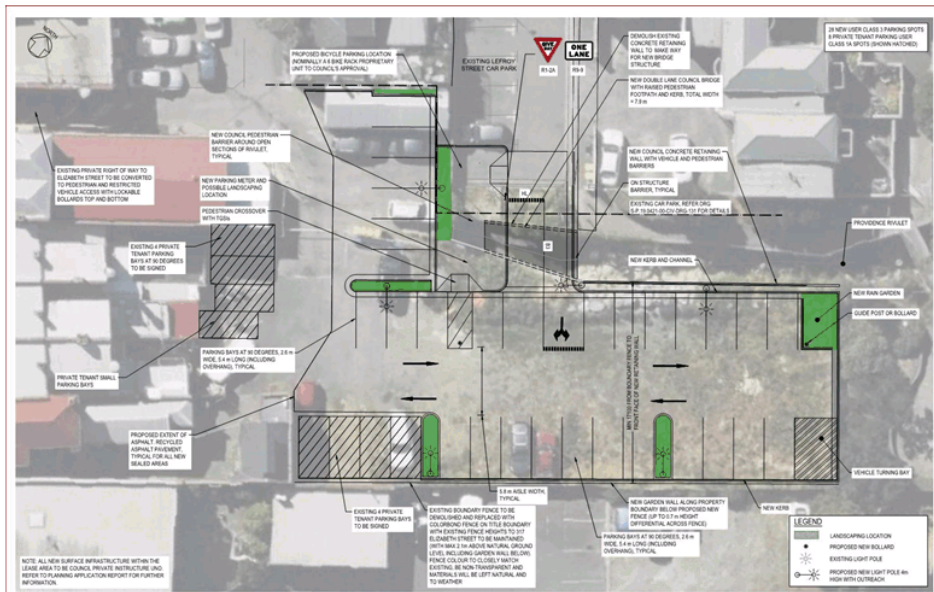


Fig. 10- Layout of the proposed car parking area behind 325 and 321-323A Elizabeth Street

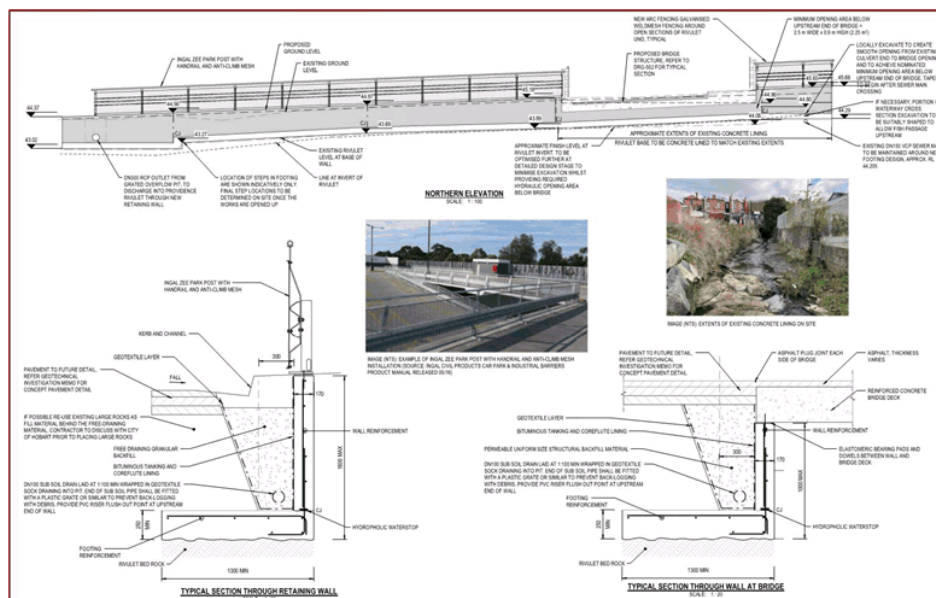


Fig. 11 - proposed bridge and retaining wall within the Providence Rivulet.

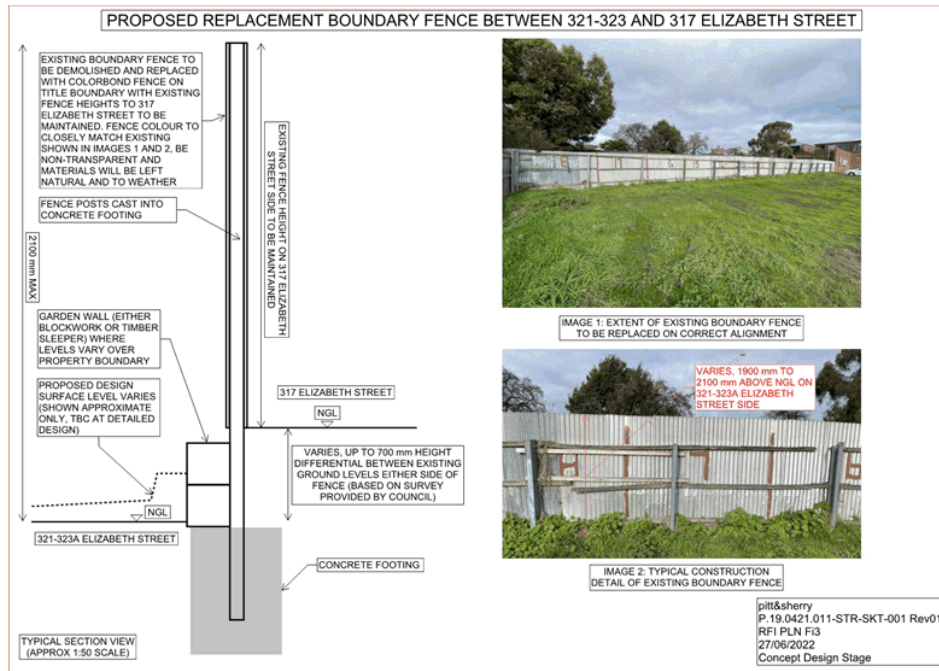


Fig. 12 - existing and proposed boundary between 317 and 321-323A Elizabeth Street

4. Background

- 4.1 A Planning Amendment PSA-20-2 requesting the insertion of car parking being a discretionary use in the Inner Residential Zone, with the following qualification was considered and supported by the City Planning Committee at its meeting of 18 January 2021 and approved by Council at their meeting of 27 January 2021.

Qualification:

Part D11.2 - Use Table under the Inner Residential Zone of the Hobart Interim Planning Scheme 2015 was amended on 15 June 2021 by inserting the use class "Vehicle Parking" after "Utilities" in the discretionary section of the table with the following qualifications:

Only if at:

- 321-323A Elizabeth Street (folio of the Register 137808/1 and 2); or
- 325 Elizabeth Street (folio of the Register 176661/1 and 137807/1); or
- 16A Lefroy Street (folio of the Register 112639/1 and 112639/2).

The amendment was advertised in accordance with the *Land Use Planning and Approvals Act 1993*. No objections were received within the statutory timeframe.

The Tasmanian Planning Commission approved the amendment on 3 June 2021.

- 4.2 An application to demolish and replace the existing rock lined embankment within the Rivulet running at the rear of 321-323A Elizabeth Street with a reinforced concrete wall was submitted to Council under PLN-20-570. The application was withdrawn on 31 January 2022.
- 4.3 A letter advising the occupant of an adjoining property of the current application (PLN-22-266) was returned to Council. A further letter was hand delivered to the property and the opportunity for the occupant of the property to lodge a representation was extended to 1 August 2022. The occupant of this property did not lodge a representation.
- 4.4 General Manager Consent to the lodging of the application was provided under GMC-22-35 on 10 May 2022, because the proposal involves the Council owned land at 16A Lefroy Street.

5. Concerns raised by representors

- 5.1 One (1) representation generally in support of the proposal was received within the statutory advertising period between 14 -28 July 2022.
- 5.2 The following table outlines the issues raised in the representation received. Those concerns which relate to a discretion invoked by the proposal are addressed in Section 6 of this report.

General Requests

We are in general agreement with the proposal and would like to submit the following;

1. Provision of a loading bay possibly in the bottom end of the lane between 325 and 329 Elizabeth Street which leads to Elizabeth Street.
2. Provision of a bollard at the top of the lane at Elizabeth Street. We require a key to temporarily remove the bollards to retain our legal rights of access over the laneway and utilise the requested loading bay.
3. We would like a sign providing direction to an approved visitor accommodation unit placed at the entrance to the existing car park in Lefroy Street.

6. Assessment

- 6.1 The *Hobart Interim Planning Scheme 2015* is a performance based planning scheme. To meet an applicable standard, a proposal must demonstrate compliance with either an acceptable solution or a performance criterion. Where a proposal complies with a standard by relying on one or more performance criteria, the Council may approve or refuse the proposal on that basis. The ability to approve or refuse the proposal relates only to the performance criteria relied on.
- 6.2 The existing Lefroy Street Carpark, is located within the *Inner Residential Zone of the Hobart Interim Planning Scheme 2015*.

The site at 325 and 321-323A Elizabeth is located in the Inner Residential Zone and the General Business Zone of the *Hobart Interim Planning Scheme 2015*. The buildings fronting Elizabeth Street and four (4) existing car parking permit spaces directly to the rear are within the General Business Zone. No works are proposed to these existing car parking spaces. The remainder of the site is

located within the Inner Residential Zone.

- 6.3 The existing use at 325 and 321- 323A Elizabeth Street consists of four commercial buildings and a rear open yard used for (non approved) car parking at the rear. As such, this car park is an existing non conforming use. The existing use of the buildings are general retail and hire and food services, which are permitted uses in the zone.

The existing use of 16A Lefroy Street is a public car park managed by Hobart City Council.

The proposed use is vehicle parking which is a discretionary use in the General Business Zone and these specific properties within the Inner Residential Zone.



Fig.13 Zoning Map under the Hobart Interim Planning Scheme 2015

- 6.4 The proposal has been assessed against:
- 6.4.1 Part D - 11 Inner Residential Zone
 - 6.4.2 Part D - 21 General Business Zone
 - 6.4.3 Part E 2.0 Potentially Contaminated Land Code
 - 6.4.4 Part E 5.0 Roads and Railway Assets Code
 - 6.4.5 E6.0 Parking and Access Code

- 6.4.6 E7.0 Stormwater Management Code
- 6.4.7 E.11.0 Waterway and Coastal Protection Code
- 6.4.8 E13.0 Historic Heritage Code
- 6.4.9 E15.0 Inundation Prone Areas Code
- 6.5 The proposal relies on the following performance criteria to comply with the applicable standards:
 - 6.5.1 Inner Residential Zone:
 - Use - Vehicle Parking*
 - Use Standards - Non Residential Use 11.3.1P1-P3- Hours of Operation, Noise Emissions, External Lighting*
 - 6.5.2 Potentially Contaminated Land Code
 - Excavation - E2.6.2P1*
 - 6.5.3 Railway and Road Assets Code
 - Existing road and access junctions - E5.5.1P3*
 - 6.5.4 Stormwater Management Code
 - Stormwater Drainage and Disposal - E7.7.1P2*
 - 6.5.5 Water Way and Coastal Protection Zone
 - Building and Works with a Waterway and Coastal Protection Area - E11.7.1P1*
 - Development involving a new stormwater point discharge into a watercourse E11.7.1P4*
 - 6.5.6 Inundation Prone Areas Code
 - Solid Walls greater than 5m in length in a Low, Medium, High Inundation Hazard Areas within a Riverine Investigation Area E15.7.5P1, P2*

6.6 Each performance criterion is assessed below.

6.7 Use Part D 11.2.Inner Residential Zone

6.7.1 The use (vehicle parking) is a discretionary use upon these sites within the Inner Residential Zone.

6.7.2 The property containing the Lefroy Street carpark and the vacant (grassed) area behind 325 and 321-323A Elizabeth Street are located in the Inner Residential Zone.

6.7.3 The use is discretionary on these sites within the Inner Residential zone and therefore requires assessment under Part B10.2 and Part D11.1.1

6.7.4 Part B 8.10.2 and Part D11.1.1 -6 provides as follows

In determining an application for a permit for a discretionary use the planning authority must, in addition to the matters referred to in subclause 8.10.1, have regard to:

- (a) the purpose of the applicable zone;*
- (b) any relevant local area objective or desired future character statement for the applicable zone;*
- (c) the purpose of any applicable code; and*
- (d) the purpose of any applicable specific area plan,*

but only insofar as each such purpose, local area objective or desired future character statement is relevant to the particular discretion being exercised.

The Zone Purpose Statements for the Inner Residential Zone are as follows:

11.1.1.1 To provide for a variety of residential uses and dwelling types close to services and facilities in inner urban and historically established areas, which uses and types respect the existing variation and pattern in lot sizes, set back, and height.

11.1.1.2 To provide for compatible non-residential uses that primarily serve the local community.

11.1.1.3 To encourage residential development at higher densities in

locations within walkable distance of services, facilities, employment and high frequency public transport corridors.

11.1.1.4 To encourage residential development that respects the neighbourhood character.

11.1.1.5 To provide a high standard of residential amenity.

11.1.1.6 To allow commercial uses which provide services for the needs of residents of a neighbourhood and do not displace an existing residential use or adversely affect their amenity particularly through noise, traffic generation and movement, and the impact of demand for on-street parking.

- 6.7.5 There are no Local Area Objectives or Desired Future Character Statements for the Inner Residential Zone.

In terms of Zone Purpose Statements the applicable clauses are 11.1.1.2 and 11.1.1.6.

There have been numerous requests over several years from the local community and North Hobart business owners to provide further car parking in the North Hobart Shopping Precinct. The Council has responded by undertaking negotiations with the owners of 325 and 321 - 323A Elizabeth Street to utilise the existing vacant land, which shares a boundary with Council's Lefroy Street carpark. Lefroy Street car park currently consists of 34 carparking spaces. The new section of the carpark to the rear of 325 and 321-323A Elizabeth Street will provide an additional twenty eight (28) public spaces and eight (8) private permit spaces.

Alterations of the existing Lefroy Street car park are also proposed, including the provision of 2 DDA spaces and 2 spaces providing car charging stations. Upon completion of the works, including the extension, the Lefroy Street car park will consist of 61 car parking spaces.

As stated above, the existing Lefroy Street Carpark is to be extended by utilising the existing undeveloped (grassed) area to the rear of 325 and 321-323A Elizabeth Street which adjoins the existing car park. Consequently, the extension does not displace any residential use.

There are a number of multiple dwellings which share a boundary with the subject site. The property which will continue to be most affected is known

as 45A Burnett Street, which has frontage both to Burnett and Lefroy Streets. The applicant has submitted a noise report and traffic impact assessment to support their proposal. Council's Environmental Development Planner has assessed the Noise Report and concluded that given the relatively high background noise levels (48-50dBA), the additional noise generated by the car park proposal would result in a negligible increase in noise levels for nearby residents and environmental nuisance is unlikely to be caused.

Council's Development Engineer has assessed the traffic impact assessment and supports the proposal, subject to conditions.

With the exception of eight private car parking spaces proposed to the rear of 325 and 321-323A Elizabeth Street, the proposed carpark is for public use to support the local community and business and services within the North Hobart Shopping Precinct. This then will reduce the demand for on-street parking in the immediate area.

6.7.6 The proposal complies with the performance criterion.

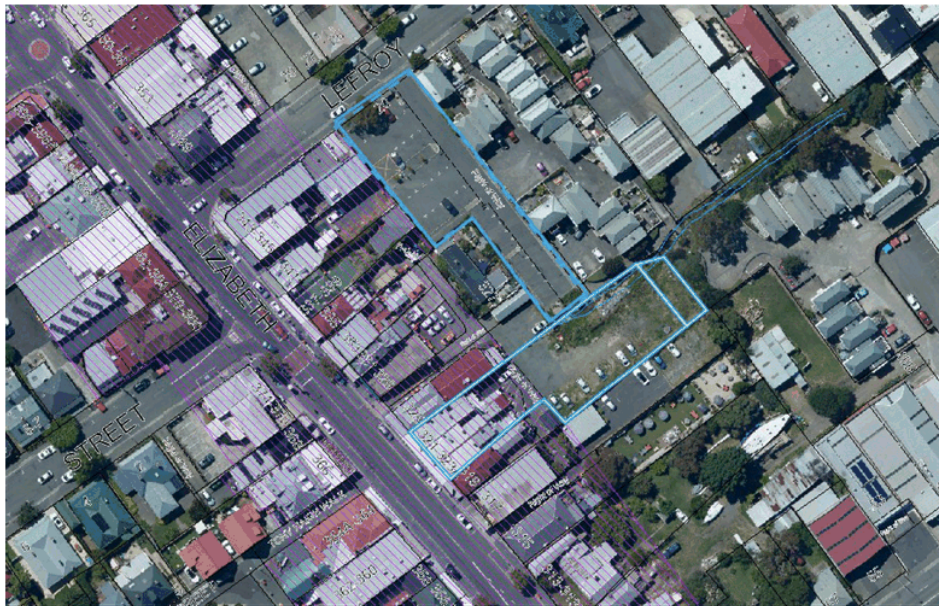


Fig. 14 With the exception of the proposed four private spaces directly behind the buildings in 325 and 323-323A Elizabeth, the subject sites are outside the area covered by the North Hobart Specific Area Plan

6.8 Use Standards Part D.11.4.3P1-P3 - Inner Residential Zone

6.8.1 The acceptable solution at clause 11.4.3A1-A3 requires the following:

A1 - hours of operation between 8am - 6pm

A2 Noise emissions measured at the boundary of the site must not exceed the following:

(a) 55 dB(A) (LAeq) between the hours of 8.00 am to 6.00 pm;

(b) 5dB(A) above the background (LA90) level or 40dB(A) (LAeq), whichever is the lower, between the hours of 6.00 pm to 8.00 am;

(c) 65dB(A) (LAmax) at any time.

A3 - External lighting must comply with all of the following:

(a) be turned off between 6:00 pm and 8:00 am, except for security lighting;

(b) security lighting must be baffled to ensure they do not cause emission of light into adjoining private land.

6.8.2 The proposal includes:

It is proposed to continue to operate the (paid) car park between 8.30 am - 10pm. The car park will continue to remain accessible beyond those hours.

Noise emissions. The Noise Report provided confirms that noise emissions at night will exceed the acceptable solution by 0.4-3.4dB(A)

There are five new lights within the car park within 325 and 321-323A Elizabeth Street and one new light within the existing Lefroy Street car park. The lights will remain on throughout the night. The applicant has not confirmed whether or not the lighting will be baffled.

6.8.3 The proposal does not comply with the acceptable solution; therefore assessment against the performance criterion is relied on.

6.8.4 The performance criterion at clause 11.3.1P1-P3 provides as follows:

11.3.1P1 - Hours of Operation

Hours of operation must not have an unreasonable impact upon the residential amenity through commercial vehicle movements, noise or other emissions that are unreasonable in their timing, duration or extent.

11.3.1P2 - Noise Emissions

Noise emissions measured at the boundary of the site must not cause environmental harm.

11.3.1P3 - External Lighting

External lighting must not adversely affect existing or future residential amenity, having regard to all of the following:

(a) level of illumination and duration of lighting;

(b) distance to habitable rooms in an adjacent dwelling.

- 6.8.5 The objectives relating to standards for non-residential use within the Inner Residential Zone is to ensure that non-residential use does not unreasonably impact residential amenity.

In terms of the hours of operation there is no change the status quo to the existing Lefroy car park, however the extension to the car park to include a further 36 car parking spaces within 325 and 321-323A Elizabeth Street will approximately double the number of vehicles accessing the site. The proposed carpark extension shares the northeast and northwestern boundaries with 45A Burnett Street which contains multiple dwellings.

The proposed car park at 325 and 321-323A Elizabeth Street will have separation distance of 10m - 20m from the dwellings within 45A Burnett Street. The planning report submitted with the application confirms that prior to noon, three of the public car parking spaces will have a 15 minute restriction to allow for deliveries to commercial premises. As such, it is reasonable to assume that deliveries using commercial vehicles will be undertaken during normal business hours and will not take place after 6pm. Based on this assumption and the separation distance between existing dwellings within 45A Burnett Street and the existing and proposed carpark, it is considered the hours of operation between 6pm - 10pm are not unreasonable.

As stated above, Council's Environmental Development Planner has assessed the Noise Report, which includes modelling results for the expanded car park operation. The modelling indicates that night time criteria (40dBA) would be slightly exceeded at several locations and that Lmax criteria (65dBA) would be exceeded at one location. Council's Officer concluded that given the relatively high background noise levels (48-50dBA), the additional noise generated by the car park proposal would result in a negligible increase in noise levels for nearby residents and environmental nuisance is unlikely to be caused.

It is proposed to erect five (5) 4m high light poles erected in the proposed car park within 321-323A Elizabeth Street and one new light within the existing Lefroy Street car park.

The additional light within the Lefroy Street car park will be located between the two DDA car parking spaces which are to be positioned on the carpark's frontage to Lefroy Street. The closest residence is approximately 20m east of this light pole and the elevation facing the light pole has two highlight windows. The other adjoining properties are a mix of food services or professional business uses without a residential component. Therefore the location of this light will not result in any detrimental impact on the aforementioned dwelling within 45A Burnett Street.

As stated above it is proposed to install five (5) new 4m high light posts within the new car parking area at 325 and 321-323A Elizabeth Street. The new lights will be setback approximately 4.4m from the dwelling within 317 Elizabeth Street and 8.5m from the dwellings to the northwest within 45A Burnett Street. A site inspection confirmed that there were habitable room windows within the dwellings at 45A Burnett St which face the proposed car park.

Additional information was requested in relation to light spill and habitable room windows within those dwellings facing the new lights within the proposed carpark at 321 and 323-323A Elizabeth Street. The applicant did not provide any photos or use of the rooms with windows which faced 325 and 321-323A Elizabeth Street as requested. However, the applicant has provided written information which confirmed that a high level desktop study on the potential for spillage of light from the new lighting on habitable rooms of residential buildings was undertaken. The report stated that a more detailed assessment will need to be undertaken at the detailed design stage to confirm that the spill lighting on all relevant properties is within the limits set by AS/NZS 4282. The report advises

that lighting could be dimmable and able to reduce the intensity of the light spill by approximately 50% during times of inactivity during late night/early morning hours.

Council's Development Engineer has imposed a condition requiring the car parking area which prevents unreasonable impact on the amenity of adjoining users through light overspill and which is appropriate to the hours of operation of the use. It is considered reasonable that a further condition will be imposed requiring the lighting within 321 and 323-323A Elizabeth Street to meet Australian Standard AS 4282 - Control of the obtrusive effects of outdoor lighting.

6.8.6 The proposal complies with the performance criterion.

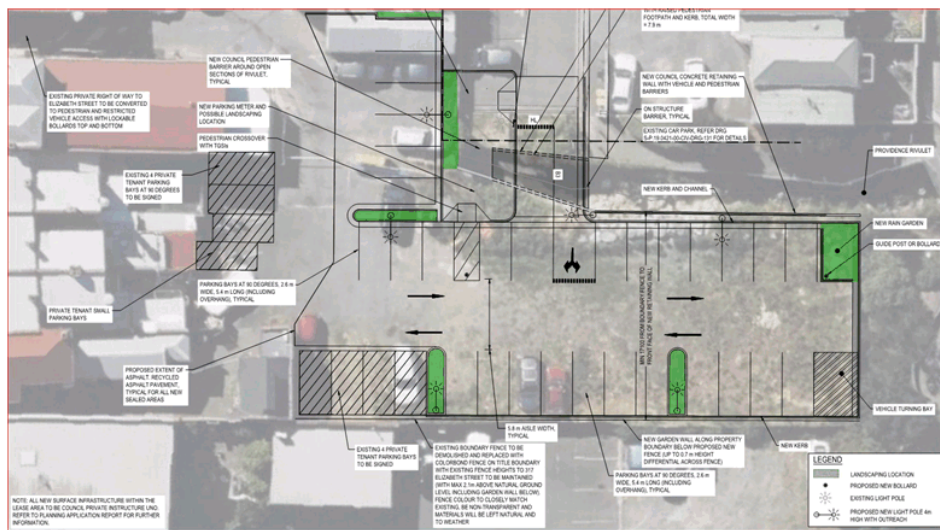


Fig.15 location of new lights within the proposed car park at 321 and 323-323A Elizabeth Street

6.9 E: 2.0 Potentially Contaminated Land Code Part E2.6.2P1

- 6.9.1 There is no acceptable solution for for works involving excavation of potentially contaminated land.
- 6.9.2 The proposal includes excavation of contaminated land at 16A Lefroy Street.
- 6.9.3 There is no acceptable solution; therefore assessment against the performance criterion is relied on.

- 6.9.4 The performance criterion at clause E2.6.2P1 provides as follows:

Excavation does not adversely impact on health and the environment, having regard to:

(a) an environmental site assessment that demonstrates there is no evidence the land is contaminated; or

(b) a plan to manage contamination and associated risk to human health and the environment that includes:

(i) an environmental site assessment;

(ii) any specific remediation and protection measures required to be implemented before excavation commences; and

(iii) a statement that the excavation does not adversely impact on human health or the environment.

- 6.9.5 The objective of the criteria relating to excavation of potentially contaminated land is to ensure that it does not adversely impact on human health and the environment..

An environmental site assessment report, which included a site contamination report and recommendations was submitted by the applicant to support their proposal.

The application, including the site contamination report was referred to Council's Environmental Health Officer, who provided the following report:

Excavation Standards applies to the proposed development. An Environmental Site Assessment (conducted in accordance with the National Environment Protection (Assessment of Site Contamination) Measure 1999 (NEPM) has been submitted with the application. The report (prepared by Pitt and Sherry, dated 17 Dec 2021) recommends:

- the site surface be sealed during the redevelopment; and
- all waste soils be segregated and treated as outlined in page 63 of the ESA and a Stormwater Management Plan be developed to demonstrate that the proposed excavation does not adversely impact on health and the environment.

A Stormwater Management Plan was submitted with the application (prepared by Pitt and Sherry, dated 25 March 2022) and recommends a number of stormwater systems be installed to the adjacent existing Lefroy

Street as well as to the proposed development. Refer to page 14 of this report for details.

6.9.6 The proposal complies with the performance criterion.

6.10 Roads and Railway Assets Code Part E5.5.1P3

6.10.1 The acceptable solution at clause 5.5.1P3 allows an average daily traffic of vehicle movements to and from a site using an existing access in an area subject to a speed limit of 60km/hr or less, to result in an a maximum increase of 20% or 40 vehicle movements per day whichever is the greater.

6.10.2 The proposal includes an extension to the Council managed 34 space car park, which will continue to use the existing access from Lefroy Street, which is within a 50km/hr zone. The works will result in an additional 28 public spaces and 8 permit spaces becoming available.

The proposed development is expected to increase the total number of vehicle movements to and from the site by more than 100%, producing 73 vehicle movements during the weekday AM, PM and midday peak hours and 40 vehicle movements during the weekend peak hour alone, it is unable to comply with Acceptable Solution A3

6.10.3 The proposal does not comply with the acceptable solution; therefore assessment against the performance criterion is relied on.

6.10.4 The performance criterion at clause E5.5.1P3 provides as follows:

Any increase in vehicle traffic at an existing access or junction in an area subject to a speed limit of 60km/h or less, must be safe and not unreasonably impact on the efficiency of the road, having regard to:

- (a) the increase in traffic caused by the use;*
- (b) the nature of the traffic generated by the use;*
- (c) the nature and efficiency of the access or the junction;*
- (d) the nature and category of the road;*
- (e) the speed limit and traffic flow of the road;*
- (f) any alternative access to a road;*
- (g) the need for the use;*
- (h) any traffic impact assessment; and*
- (i) any written advice received from the road authority.*

- 6.10.5 The objective of the provisions relating to the use of existing road accesses and junctions is to ensure that the safety and efficiency of roads is not reduced by increased use of existing accesses and junctions.

The application was referred to Council's Development Engineer who provided the following report:

(a) the increase in traffic caused by the use;

Based on the SIDRA (software) modelling results presented within the report, the traffic generated by the development is not expected to result in safety or operational issues in the road networks surrounding the site. Furthermore, given the proposed conversion of the existing right of way from Elizabeth Street, the development is expected to improve overall vehicle and pedestrian safety by limiting possible conflict points." - Page 31, Pitt & Sherry T.I.A dated 29 March 2022 Rev 00

(b) the nature of the traffic generated by the use;

- "The proposed development is expected to generate predominantly light vehicle traffic which is already catered for on the surrounding road network." - Page 31, Pitt & Sherry T.I.A dated 29 March 2022 Rev 00

(c) the nature and efficiency of the access or the junction;

- "Based on the SIDRA (software) modelling results, the car park access is expected to continue operating at LOS A post development and 10-years post development." - Page 31, Pitt & Sherry T.I.A dated 29 March 2022 Rev 00

(d) the nature and category of the road;

- "Based on the SIDRA (software) modelling results, all intersections in the vicinity of the site currently operate well and are expected to continue operating at LOS A post development and 10-years post development." - Page 31, Pitt & Sherry T.I.A dated 29 March 2022 Rev 00

(e) the speed limit and traffic flow of the road;

- "Lefroy Street and Argyle Street are subject to the Tasmanian Urban Speed Limit of 50km/h. Elizabeth Street is subject to a speed limit of 40km/h in the vicinity of the site. The speeds and existing traffic flow are consistent with safe and efficient access to the proposed development." -

Page 31, Pitt & Sherry T.I.A dated 29 March 2022 Rev 00

(f) any alternative access to a road;

- "No alternative accesses are proposed for the development." - Page 31, Pitt & Sherry T.I.A dated 29 March 2022 Rev 00

(g) the need for the use;

- "The need for the use has not been assessed and is this report. The development will offer increased car parking availability within North Hobart." - Page 31, Pitt & Sherry T.I.A dated 29 March 2022 Rev 00

(h) any traffic impact assessment; and

- "This TIA has been prepared for the development and identifies that the development is not expected to have any major impacts on the safety and operation of the surrounding road network." - Page 31, Pitt & Sherry T.I.A dated 29 March 2022 Rev 00

(i) any written advice received from the road authority.

- "The City of Hobart own and maintain the road network in the vicinity of the site. As the car park development is a Council project, they have had involvement in the design process." - Page 31, Pitt & Sherry T.I.A dated 29 March 2022 Rev 00

Based on the statements provided by the applicant's suitably qualified expert (Engineer), the proposed/identified intensification of the Lefroy Street access may be accepted under a performance based solution by the City. This particularly due to no significant impacts regarding safety and efficiency being introduced to the immediate and surrounding road network's Level of Service.

6.10.6 The proposal complies with the performance criterion.

6.11 Stormwater Management Code Part E7.7.1P2

6.11.1 The acceptable solution at clause E7.7.1A2 requires a stormwater system for new development incorporating sensitive urban principles for the treatment and disposal of stormwater if the size of the new impervious area is more than 600sqm and new parking is provided for more than 6 cars.

- 6.11.2 The proposal includes a new car parking area, resulting in an additional 36 car parking spaces. The new parking area behind 325 and 321-323A Elizabeth Street is approximately 900sqm in area.

The proposed stormwater system does not incorporate waster sensitive urban principles for the treatment and disposal of stormwater

- 6.11.3 The proposal does not comply with the acceptable solution; therefore assessment against the performance criterion is relied on.

- 6.11.4 The performance criterion at clause E7.7.1P2 provides as follows:

A stormwater system for a new development must incorporate a stormwater drainage system of a size and design sufficient to achieve the stormwater quality and quantity targets in accordance with the State Stormwater Strategy 2010, as detailed in Table E7.1 unless it is not feasible to do so.

- 6.11.5 The objective of the provisions relating to stormwater treatment and disposal aim to ensure that stormwater quality and quantity is managed appropriately.

The proposal was referred to Council's Environmental Technical Officer who provided the following assessment.

The existing treatment on Lefroy St carpark (raingarden) is to be removed and replaced with mesh insert and SpelFilter. Council's Stormwater unit does not accept mesh inserts as part of the public stormwater system. This will be Council owned, but part of the private carpark drainage. New raingarden proposed for new carpark.

- 6.11.6 The proposal complies with the performance criterion.

6.12 Waterway and Coastal Protection Code Part E11.7.1P1 and P4

- 6.12.1 The acceptable solution at clause 11.4.7.1A1 requires works within a Waterway and Coastal Protection Area be within a building area on a plan of subdivision approved under this planning scheme.

The acceptable solution at clause 11.4.7A4 requires development to not involve a new stormwater point discharge into a watercourse.

- 6.12.2 The proposal includes works which are not located within a building area shown on the subdivision plan and include a new stormwater point discharging into a water course.
- 6.12.3 The proposal does not comply with the acceptable solution; therefore assessment against the performance criterion is relied on.
- 6.12.4 The performance criterion at clause 11.4.7.1P1 and 11.4.7.1P4 provides as follows:

11.4.7.1P1

Building and works within a Waterway and Coastal Protection Area must satisfy all of the following:

- (a) avoid or mitigate impact on natural values;*
- (b) mitigate and manage adverse erosion, sedimentation and runoff impacts on natural values;*
- (c) avoid or mitigate impacts on riparian or littoral vegetation;*
- (d) maintain natural streambank and streambed condition, (where it exists);*
- (e) maintain in-stream natural habitat, such as fallen logs, bank overhangs, rocks and trailing vegetation;*
- (f) avoid significantly impeding natural flow and drainage;*
- (g) maintain fish passage (where applicable);*
- (h) avoid landfilling of wetlands;*
- (i) works are undertaken generally in accordance with 'Wetlands and Waterways Works Manual' (DPIWE, 2003) and 'Tasmanian Coastal Works Manual' (DPIPWE, Page and Thorp, 2010), and the unnecessary use of machinery within watercourses or wetlands is avoided.*

11.4.7.1P4

Development involving a new stormwater point discharge into a watercourse, wetland or lake must satisfy all of the following:

- (a) risk of erosion and sedimentation is minimised;*
- (b) any impacts on natural values likely to arise from erosion, sedimentation and runoff are mitigated and managed;*
- (c) potential for significant adverse impact on natural values is avoided.*

- 6.12.5 The objective of the building and works provisions under the Waterway and Coastal Protection Code is to ensure that buildings and works in

proximity to a waterway, the coast, identified climate change refugia and potable water supply areas will not have an unnecessary or unacceptable impact on natural values.

The application was referred to Council's Environmental Development Planner, who undertook a comprehensive assessment of the proposal. A summary of their assessment is as follows:

Approval is sought to construct a formal car park at 321-323A Elizabeth Street, North Hobart. The proposed development would include the construction of a bridge over Providence Rivulet, to provide access from the existing Council car park at 16A Lefroy Street, and partial landfilling of the Rivulet (supported by a vertical retaining wall) to increase the land available for car parking.

As the northern bank of the Rivulet is already lined with a vertical retaining wall, the development would effectively finish the creeks' conversion to a drain through this section. The Rivulet would generally be narrowed from its existing condition, and also deepened at the south-western (upstream) end through excavation. The approximate location of the proposed retaining wall is shown in Figure 1 below.



Image 1: Approximate location of the proposed retaining wall



Image 2: Current condition looking downstream

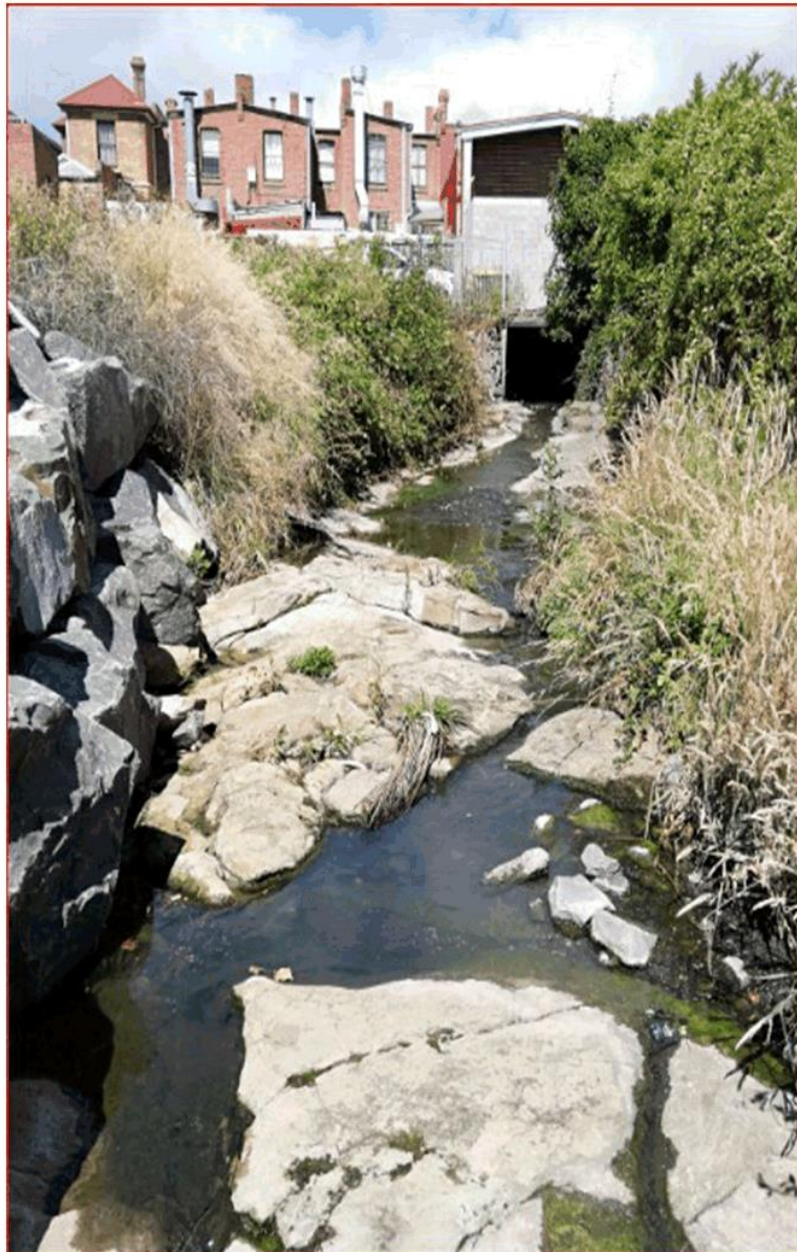


Image 3 - Current condition looking upstream

Providence Rivulet is open for approximately 90m through this site and another property downstream to the north-east. Downstream from this point, the Rivulet is fully piped until it reaches Park Street Rivulet at the Brooker Highway (also fully piped) which flows to Hobart Rivulet near Macquarie Point. Upstream it is also fully piped and it is fed by the

stormwater network.

The biodiversity values of the Rivulet on the site are very limited. Base flows are very low, with only a few small, exposed shallow pools. Water quality appears to be poor, with high turbidity and considerable algae growth suggesting high nutrient levels.

Riparian vegetation consists primarily of some native grasses (plantings) and blackberry. Given the low flows, the riparian vegetation generally does not provide habitat for any aquatic species, and is not considered significant habitat for terrestrial species given the small amount of vegetation present and the site's isolation from other natural areas.

Environmental flows would not be significantly impacted by the proposed development.

The watercourse and catchment has been so heavily modified that the existing streambed and streambank condition can't be considered natural. For most of its length, there is no streambed or streambank as it is piped. At this site, the entire north 'bank' is a vertical concrete wall and most of the southern bank has been constructed or modified with imported bluestone rock.

The creation of a solid concrete wall would effectively reduce bank erosion/accretion to zero at the site. While erosion would currently be low due to the placement of boulders and rock retaining walls, some erosion would be occurring during larger storm events.

The first 8m (approx.) of the stream bed from the upstream culvert is concrete, with the remainder exposed sandstone bedrock with small quantities of cobbles, pebbles, gravel and sand/silt. As most of the stream bed is exposed sandstone bedrock, current erosion would be relatively low. The proposed wall may increase flow velocity slightly increasing bed erosion, particularly of the pebbles, gravels and sediments, and may have an impact on stream morphology downstream.

Existing hydrological processes would not be significantly affected.

Water quality would not be significantly impacted, subject to the proposed stormwater treatment systems and a comprehensive soil and water management plan, nor overall river condition.

Erosion, sedimentation and runoff impacts on natural values can be

adequately minimised and managed with the proposed stormwater treatment systems and a comprehensive soil and water management plan.

The application is considered consistent with the Waterways Code subject to the recommended CMP and SWMP conditions.

6.12.6 The proposal complies with the performance criterion.

6.13 Inundation Prone Areas Code Part E15.7.5P1

6.13.1 There is no acceptable solution for landfill or solid wall greater than 5m in length and 0.5m in height.

There is no acceptable solution if mitigation measures are required.

6.13.2 The proposal includes a retaining wall which is greater in 5m in length and 0.5m in height. Mitigation measures are required.

6.13.3 There is no acceptable solution; therefore assessment against the performance criterion is relied on.

6.13.4 The performance criterion at clause E15.7.5P1 and E15.7.5P2 provides as follows:

E15.7.5P1

Landfill, or solid walls greater than 5 m in length and 0.5 m in height, must satisfy all of the following:

- (a) no adverse affect on flood flow over other property through displacement of overland flows;*
- (b) the rate of stormwater discharge from the property must not increase;*
- (c) stormwater quality must not be reduced from pre-development levels.*

E15.7.2P2

Mitigation measures, if required, must satisfy all of the following:

- (a) be sufficient to ensure habitable rooms will be protected from flooding and will be able to adapt as sea levels rise;*

(b) not have a significant effect on flood flow.

6.13.5 The objective of the provisions relating to works within riverine low, medium and high inundation areas is to ensure that:

- landfill and mitigation works do not unreasonably increase the risk from riverine, watercourse and inland flooding, and risk from coastal inundation; and
- that the risk to waste water management from riverine, watercourse and inland flooding, and risk from coastal inundation is appropriately managed

The proposal was referred to Council's Environmental Engineering Technical Officer, who provided the following comments:

A number of assumptions have been made in the modelling. This includes the conservative assumption that the current shape of the Rivulet (post May 2018 erosion and temp repairs) as the base case. This is however balanced by the locations of the cross-sections not including the points of greatest contraction of the Rivulet void.

The model shows a negligible increase in depth and velocity on third-party land. The depth increase of 15-20mm at 45A Burnett St is well within the limitations of flood modelling, and is not considered to pose an actual adverse affect as the land in question would in this scenario already be significantly inundated to an unsafe level (H3 - vehicles & vulnerable people). This was supported by chest-height depths observed in May 2018 in this area. The slight increase in velocity does not alter the current (high) erosion potential.

Flows are returned more efficiently to the Rivulet - this is not considered to be a negative outcome, and will in fact slightly protect the upper part of 45A Burnett St.

The applicant's argument regarding water quality from the site in minor and major storm events are noted and agreed with. The site is currently a sediment source. Sealing and treating will improve this. Within the Rivulet itself, the current erosion in major events is a sediment source, which this wall will stop. The site has a varied history of planting/ clearing. The effect of the removal of the vegetation (or potential for future vegetation) in base flow conditions is better considered under the Waterways Code.

A number of mitigation measures to safely convey the OFP back to the

Rivulet are proposed in the Inundation Report. This includes the kerb along the NE boundary of the site, permeable fencing along rivulet boundary and bridge, as well as final levels of walls and kerbs. As discussed above, they do not have a significant negative effect on flood flow through third-party land.

The rivulet at the Brooker Highway (also fully piped) which flows to Hobart Rivulet near Macquarie Point. Upstream it is also fully piped and it is fed by the stormwater network.

The project is therefore considered to meet the Inundation Code.

6.13.6 The proposal complies with the performance criterion.

7. Discussion

7.1 Planning approval is sought for Partial Demolition, Alterations, Partial Change of Use to Car Park, and Associated Works at 325 Elizabeth Street and 321-323A Elizabeth Street and 16A Lefroy Street, North Hobart.

7.2 In summary, the proposal is to allow for the extension to the Lefroy St carpark by using the privately owned land behind 325 and 321-323A Elizabeth Street. Works include a new bridge linking the two properties, roadworks/sealing/installation of lighting, parking meters, bollards, retaining walls and associated landscaping.

All vehicle access to the public car park would be via the existing entrance/exit in Lefroy Street.

The works would result in a total of 61 public car parking spaces and a further eight (8) private permit spaces upon 325 and 321 -323A Elizabeth Street.

7.3 The application was advertised and received one (1) representation. The representation stated that they were generally in support of the proposal however, requested the following items be installed during construction of the works:

1. provision of a loading bay possibly in the bottom end of the lane between 325 and 329 Elizabeth Street;

2. Installation of a (removable) bollard at the top of the lane at Elizabeth Street. The representor also requested that they are provided with a key for a number of reasons including the ability to utilise the requested loading bay; and

3. a sign providing direction to an approved visitor accommodation unit placed at the entrance to the existing car park in Lefroy Street.

7.4 The application, including the planning report and traffic impact assessment, have specified that prior to noon, three of the public car parking spaces are proposed to have a 15-minute restriction to allow for deliveries to existing commercial premises who currently use the right of way as their only access for deliveries. A bollard is planned for the access via Elizabeth Street, to prevent public vehicular access. Relevant business owners will be provided with a key to allow them to access that right of way which is intended to be blocked with a bollard.

Any signage would have to be separately assessed against the planning scheme.

- 7.5 Council's Acting Manager - City Mobility has advised that from a City Mobility perspective, the proposal will have no real impact on the movement of people and goods on the City of Hobart managed road reserves. The additional off-street parking will increase the intensity of the use of the driveway crossover from the existing Lefroy Street car park onto Lefroy Street. The applicant's Traffic Impact Assessment has demonstrated that this intersection will satisfactorily be able to cater to this increased use. The closure of the existing right of way to Elizabeth Street to general day to day vehicle movements would be expected to improve the amenity of pedestrians on the Elizabeth Street footpath. Overall the City Mobility Unit has no issue with the proposal.

The proposal has also been assessed by other Council officers including

- Development Engineer;
- Cultural Heritage Officer;
- Environmental Health Officer;
- Environmental Development Planner;
- Park Planner;
- Senior Engineer - Roads and Traffic;
- Roads Technical Officer; and
- Technical Officer-Environmental

Each officer has undertaken a rigorous assessment of the proposal and have raised no objection to the proposal, subject to conditions.

The application was referred to TasWater who supports the proposal subject to conditions.

- 7.6 The proposal has been assessed against the relevant provisions of the planning scheme and is considered to perform well.
- 7.7 The proposal is recommended for approval.

8. Conclusion

- 8.1 The proposed Partial Demolition, Alterations, Partial Change of Use to Car Park, and Associated Works at 325 Elizabeth Street and 321-323A Elizabeth Street and 16A Lefroy Street, North Hobart, satisfies the relevant provisions of the *Hobart Interim Planning Scheme 2015*, and as such is recommended for approval.

9. Recommendations

That: Pursuant to the *Hobart Interim Planning Scheme 2015*, the Council approve the application for Partial Demolition, Alterations, Partial Change of Use to Car Park, and Associated Works at 325 Elizabeth Street and 321-323A Elizabeth Street and 16A Lefroy Street, North Hobart. for the reasons outlined in the officer's report and a permit containing the following conditions be issued:

GEN

The use and/or development must be substantially in accordance with the documents and drawings that comprise PLN-22-266 325 ELIZABETH STREET NORTH HOBART TAS 7000 - Final Planning Documents except where modified below.

Reason for condition

To clarify the scope of the permit.

TW

The use and/or development must comply with the requirements of TasWater as detailed in the form Submission to Planning Authority Notice, Reference No. TWDA 2022/00686-HCC dated 18 May 2022 as attached to the permit.

Reason for condition

To clarify the scope of the permit.

PLN 17

The lighting within the car park at 321-323A and 325 Elizabeth Street must operate in accordance with Australian Standard AS 4282 - Control of the obtrusive effects of outdoor lighting.

Reason for condition

To ensure that the non-residential use does not unreasonably impact residential amenity.

ENG 12

Prior to commencement of any work on site (including demolition and/or site disturbance), a Construction Waste Management Plan must be submitted and approved as a Condition Endorsement.

The Construction Waste Management Plan must include;

- Provisions for the handling, transport, and disposal, of demolition material, including any contaminated waste and recycling opportunities, and
- Provisions for commercial waste services (e.g., service areas) for the handling, storage, transport and disposal of post-construction solid waste and recycle bins from the development.

The approved Construction Waste Management Plan must be implemented throughout construction, and all work required must be undertaken in accordance with the approved plan.

Advice:

This condition requires further information to be submitted as a Condition Endorsement. Refer to the Condition Endorsement advice at the end of this permit.

It is recommended that the developer liaise with the Council's City Resilience Unit regarding reducing, reusing and recycling materials associated with demolition on the site to minimise solid waste being directed to landfill. Further information can also be found on the Council's [website](#).

Reason for condition

To ensure that solid waste management from the site meets the Council's requirements and standards.

ENG sw1

Prior to first occupation or commencement of use (whichever occurs first), all stormwater from the proposed development (including but not limited to; roofed areas, ag drains, retaining wall ag drains, and impervious surfaces, such as roadways or paved areas) must be drained to the Council's stormwater infrastructure.

Any private or private shared stormwater system passing through third-party land must have sufficient receiving capacity.

Advice:

Under section 23 of the Urban Drainage Act 2013 it is an offence for a property owner to direct stormwater onto a neighbouring property.

Reason for condition

To ensure that stormwater from the site will be discharged to a suitable Council approved outlet.

SW 1

Prior to the issue of any approval under the *Building Act 2016* or the commencement of work on the site (whichever occurs first), a pre-construction structural condition assessment and visual record (eg video and photos) of the Hobart City Council's stormwater infrastructure within/adjacent to the proposed development (including the mains and open Rivulet) must be submitted to the City of Hobart as a Condition Endorsement.

The condition assessment must include at least:

1. a site plan clearly showing the location of the investigation, with access points and all segments and nodes shown and labelled, with assets found to have a different alignment from that shown on the City of Hobart's plans to be marked on the ground and on the plan;
2. a digital recording of a CCTV inspection and written condition assessment report in accordance with WSA 05-2013 Conduit Inspection Reporting Code of Australia, in a 'Wincan' compatible format; and
3. photos of any existing drainage structures connected to or modified as part of the development.

The pre-construction condition assessment will be relied upon to establish the extent of any damage caused to Hobart City Council's stormwater infrastructure during construction. If the owner/developer fails to provide the City of Hobart with an adequate pre-construction condition assessment then any damage to the City of Hobart's infrastructure identified in the post-construction condition assessment will be the responsibility of the owner/developer.

Advice:

This condition requires further information to be submitted as a Condition Endorsement. Refer to the Condition Endorsement advice at the end of this permit.

SW 2

Prior to occupancy or the commencement of the approved use (whichever occurs first), a post-construction structural condition assessment and visual record (eg video and photos) of the Hobart City Council's stormwater infrastructure within/adjacent to the proposed development (including mains and open Rivulet), must be submitted to the City of Hobart.

The condition assessment must include at least:

1. a site plan clearly showing the location of the investigation, with access points and all segments and nodes shown and labelled, with assets found to have a different alignment from that shown on the City of Hobart's plans shall be marked on the ground and on the plan;
2. a digital recording of a CCTV inspection and written condition assessment report in accordance with WSA 05-2013 Conduit Inspection Reporting Code of Australia, in a 'Wincan' compatible format; and
3. photos of any existing drainage structures connected to or modified as part of the development.

The pre-construction condition assessment will be relied upon to establish the extent of any damage caused to the Hobart City Council's stormwater infrastructure during construction. If the owner/developer fails to provide the City of Hobart with an adequate pre-construction condition assessment then any damage to the Hobart City Council's infrastructure identified in the post-construction CCTV will be deemed to be the responsibility of the owner/developer.

SW 5

An approved Construction Management Plan must be implemented.

A Construction Management Plan (CMP) must be submitted and approved prior to commencement of works. The CMP must be prepared by suitably qualified and experienced persons and must:

1. detail the proposed construction methodology and timing, including extent of earthworks;
2. identify all potential risks to the Rivulet and the wider environment from construction works including, but not limited to, construction loading, traffic loading, excavation works, footing construction, vibrations, undermining,

flood, noise, pollution and environmental harm;

3. include:

- identification and disposal of any potentially contaminated waste and asbestos;
- proposed hours of work;
- identification of potentially noisy construction phases, such as operation of rock- breakers, explosives or pile drivers, and proposed measures to minimise the potential for noise nuisance;
- a soil and water management plan, generally consistent with the Soil and Water Management Plan by Pitt & Sherry dated 24 May 2022, but providing plans and details, and addressing the timing of in-stream works and need for flow diversion;

4. specify measures to eliminate or otherwise mitigate to as low as reasonably practicable all identified risks; and

5. include a monitoring regime.

SW 9

Prior to commencement of the approved use (whichever occurs first), stormwater pre-treatment for stormwater discharges from the development must be installed.

A stormwater management report and design must be submitted and approved as a Condition Endorsement, prior to the issue of any approval under the *Building Act 2016* or the commencement of work on the site (whichever occurs first). The stormwater management report and design must be prepared by a suitably qualified engineer and must:

1. include detailed design of the proposed treatment train, including final estimations of contaminant removal;
2. include detailed design and supporting calculations of the detention sized such that there is no increase in flows from the developed site up to 5% AEP event showing
 1. the layout, the inlet and outlet (including long section), outlet size, overflow mechanism and invert level;
 2. all assumptions must be clearly stated;
3. include a supporting maintenance plan, which specifies the required

maintenance measures to check and ensure the ongoing effective operation of all systems, such as: inspection frequency; cleanout procedures; descriptions and diagrams of how the installed systems operate; details of the life of assets and replacement requirements. The likely lifecycle costs and requirements for any Council assets must be acceptable to the proposed asset owner.

All work required by this condition must be undertaken and maintained in accordance with the approved stormwater management report and design.

Advice:

This condition requires further information to be submitted as a Condition Endorsement. Refer to the Condition Endorsement advice at the end of this permit.

SW 11

Measures to minimise impact on the overland flow path and mitigate flood risk from the critical 1% AEP at 2100 event must be installed prior to occupancy or issue of any completion (whichever occurs first). All works within the flood zone, including the walls, bridge and lowered bed of the Rivulet, must be designed, constructed and maintained to ensure the long-term protection and access to the Rivulet void.

Detailed engineering drawings must be submitted as a Condition Endorsement prior to the issue of any approval under the *Building Act 2016* or the commencement of work on the site (whichever occurs first). These must include (but are not limited to):

- (1) **certification from an accredited and qualified structural engineer that all proposed structures within the flood zone are designed to resist inundation, erosion, undermining and likely forces from a flood event (including debris loading such as vehicle impacts) and the long-term base flows of the Rivulet;**
- (2) **detailed design of works within/over the Rivulet and mitigation measures such as permeable fencing, wall heights and kerb levels in accordance with the Pitt and Sherry Inundation Assessment Rev01 dated 30/6/22.**
- (3) **details of management of the flood zone including signage and measures to prevent blockage of the overland flow path (such as bollards and/or restrictions on use of the area);**
- (4) **a flood management summary plan from a suitably qualified and**

experienced expert that outlines the obligations for future property owners to flood and overland flow management, including:

- (a) the flood risk to the site, including depth, extent and hazard ratings for the 1% AEP at 2100 event;
- (b) identification of all measures to maintain and maximise the overland flow path through the site and their maintenance;
- (c) identification of all measures within/over the flood zone, including the works over/within the Rivulet and the flood mitigation measures, and their required maintenance and inspections.

All work required by this permit must be undertaken and maintained in accordance with the approved documents.

Advice:

This condition requires further information to be submitted as a Condition Endorsement. Refer to the Condition Endorsement advice at the end of this permit.

Council notes separate consent under s13 of the Urban Drainage Act and s73 of the Building Act will be required for the works. This will require appropriate insurances, and ongoing indemnities.

SW 13

All structures within the flood zone, and over or within the Rivulet (including Rivulet wall, bridge, fencing, and kerbing) and flood mitigation measures must be inspected by a suitably qualified and accredited engineer.

Certification from a suitably qualified and accredited engineer that the installation has been constructed in accordance with the approved design must be provided to the City of Hobart prior to commencement of use or completion of these works (whichever occurs first).

SW 14

All structures within the flood zone and within one metre of/ over the Rivulet must be inspected by a registered surveyor.

Certification from a registered surveyor that the void space within the Rivulet (ie wall locations and bridge soffit and rivulet invert level) have not been reduced from those shown on the approved engineering drawings and Inundation Assessment must be provided to the City of Hobart prior to commencement of use or completion of these works (whichever occurs first).

ENG tr1

Prior to first occupation or commencement of use (whichever occurs first) the parking area (including circulation roadways, parking modules, aisles, and spaces, pedestrian pathways, including those used by people with disabilities) approved by this permit must be signed and line marked in accordance with AS/NZS 2890.1:2004, or the design documentation (including reports and plans) which form part of this permit.

Reason for condition

In the interests of user safety and the amenity of the occupiers of the development.

ENG tr2

A Construction Traffic and Parking Management Plan must be submitted and approved as a Condition Endorsement prior to the issue of any approval under the *Building Act 2016* (including demolition) or commencement works (e.g., site disturbance) (whichever occurs first).

The Construction Traffic and Parking Management Plan must;

- Be prepared by a suitably qualified person,
- Develop a communications plan to advise the wider community (including but not limited to; users, permit holders, businesses, neighbors etc.) of the traffic and parking impacts during construction,
- Include start dates and finish dates of various stages of works,
- Include times that rigid vehicles (e.g., MRV) and other traffic associated with the works will be allowed to operate, and
- Nominate a superintendent (or the like) responsible for the implementation of the approved plan, who must also be available as a direct contact to the City of Hobart and/or community/public members regarding all relevant operations, any immediate traffic issues, and hazards that may arise.

The approved Construction Traffic and Parking Management Plan must be implemented throughout construction, and all work required must be undertaken in accordance with the approved plan.

Advice:

This condition requires further information to be submitted as a Condition

Endorsement. Refer to the Condition Endorsement advice at the end of this permit.

Reason for condition

To ensure the safety of vehicles entering and leaving the development and the safety and access around the development site for the general public and adjacent businesses.

ENG 2a

Prior to first occupation or commencement of use (whichever occurs first), physical controls (as defined by AS/NZS 2890.1:2004) must be installed where and how required by the Australian Standard, and the design documentation (including reports and plans) which form part of this permit. This includes (vehicular) barriers compliant with the Australian Standard AS/NZS 1170.1:2002, to prevent vehicles running off the edge of a parking (trafficable) area. Physical controls installed must;

1. **not limit the parking area approved by this permit, and**
2. **be in accordance with the Australian Standard AS/NZS 2890.1:2004.**

Any departure from the design documentation (including reports and plans) which form part of this permit must be approved by the Director City Life via a condition endorsement application.

Reason for condition

To ensure the safety of users of the access driveway and parking module and compliance with the standard.

ENG 3a

Prior to first occupation or commencement of use (whichever occurs first), the parking area (including circulation roadways, parking modules, aisles, and spaces) must be constructed in accordance with AS/NZS 2890.1:2004, or the design documentation (including reports and plans) which form part of this permit.

Any departure from the design documentation (including reports and plans) which form part of this permit must be approved by the Director City Life via a condition endorsement application.

Reason for condition

To ensure the safety of users of the access and parking module, and compliance with the relevant Australian Standard.

ENG 4

Prior to first occupation or commencement of use (whichever occurs first), the parking area (including circulation roadways, parking modules, aisles, and spaces) approved by this permit must be constructed to a sealed standard (spray seal, asphalt, concrete, pavers, or equivalent Council approved) and surface(s) drained to the Council's stormwater infrastructure.

Reason for condition

To ensure the safety of users of the access driveway and parking module, and that it does not detract from the amenity of users, adjoining occupiers or the environment by preventing dust, mud and sediment transport.

ENG 5

The number of off-street car parking spaces;

- approved for use on site by this permit is **Thirty-Six (36)**, and
- maintained on site by this permit is **Thirty-two (32)**.

Prior to first occupation or commencement of use (whichever occurs first), all car parking spaces must be delineated by means of white or yellow lines 80mm to 100mm wide, or white or yellow pavement markers in accordance with Australian Standards AS/NZS 2890.1 2004.

Reason for condition

To ensure the provision of parking for the use is safe and efficient.

ENG 5b

Prior to first occupation or commencement of use (whichever occurs first), all bicycle parking must be constructed in accordance with with AS/NZS 2890.3:2015, or the design documentation (including reports and plans) approved by this permit.

Reason for condition

To ensure the safety of users of the access and parking module, and compliance with

the relevant Australian Standard.

ENG 6

The number of bicycle parking spaces approved for use on site by this permit is Six (6).

Reason for condition

To clarify the scope of the permit.

ENG 9

Prior to first occupation or commencement of use (whichever occurs first), all car parking spaces for people with disabilities must be constructed and delineated in accordance with AS/NZS 2890.6: 2009.

Reason for condition

In the interests of vehicle user safety and the amenity of the development.

ENG s1

Prior to first occupation or commencement of use (whichever occurs first) the parking area (including, circulation roadways, parking aisles, parking spaces, pedestrian pathways, including those used by people with disabilities) approved by this permit must be adequately lit in accordance with the minimum lighting levels specified in AS/NZS 1158.3.1:2020, or the design documentation (including reports and plans) which form part of this permit.

Reason for condition

To ensure easy and efficient use, promote safety of users, minimize opportunities for crime or antisocial behavior, and prevent unreasonable light overspill impacts.

ENV 12

A weed management plan, prepared by a suitably qualified and experienced person, must be submitted and approved as a Condition Endorsement, prior to the commencement of work. The weed management plan must:

1. **Detail the initial treatment of weeds declared under the Tasmanian *Weed***

Management Act 1999 and any other weeds that should be removed from the site

2. The control methods should be appropriate for this waterway site.
3. A follow-up treatment is also to be specified.

All work required by this condition must be undertaken in accordance with the approved weed management plan.

Advice:

This condition requires further information to be submitted as a Condition Endorsement. Refer to the Condition Endorsement advice at the end of this permit.

Reason for condition

To ensure the use/development does not result in unnecessary or unacceptable loss of waterway and biodiversity values.

ENV 2

Sediment and erosion control measures, sufficient to prevent sediment leaving the site and in accordance with an approved soil and water management plan (SWMP), must be installed prior to the commencement of work and maintained until such time as all disturbed areas have been stabilised and/or restored or sealed to the Council's satisfaction.

A SWMP must be submitted as a Condition Endorsement prior to the issue of any approval under the *Building Act 2016* or the commencement of work, whichever occurs first. The SWMP must:

- be prepared in accordance with the Soil and Water Management on Building and Construction Sites fact sheets (Derwent Estuary Program, 2008), available [here](#).
- be prepared in accordance with the DPIPWE Works in Wetlands and Waterways Manual 2003
- reflect the recommendations of any Contaminated Site Assessment and the Pitt&Sherry Soil and Water Management Plan dated 24/5/22 submitted under this application
- be in accordance with the Construction Management Plan required in the above conditions.

All work required by this condition must be undertaken in accordance with the approved SWMP.

Advice:

This condition requires further information to be submitted as a Condition Endorsement. Refer to the Condition Endorsement advice at the end of this permit. The SWMP required under this condition must include plans clearly detailing and locating all protection measures required for each stage of the works (eg one for excavating and construction within the Rivulet, another for the carpark construction).

Reason for Condition

To avoid the pollution and sedimentation of roads, drains and natural watercourses that could be caused by erosion and runoff from the development.

ENVHE 1

Recommendations in the following report must be implemented:
Environmental Site Assessment, 321-323A and 325 Elizabeth Street, North Hobart, by Pitt and Sherry dated 17 December 2021, and
Stormwater Management Plan, 321-323A Elizabeth Street Car Park, dated 25 March 2022 developed by Pitt and Sherry.

Reason for condition

To ensure that the risk to future occupants of the building remain low and acceptable.

OPS 4

The two *Eucalyptus pulchella* street trees along the Lefroy Street frontage must not be damaged to the satisfaction of the Director City Life. No vehicular access, excavation, placement of fill, storage of materials or soil disturbance is to occur within 4.5 m of the larger eucalypt or within 2.4 m of the smaller eucalypt along Lefroy Street. There must be no pruning, lopping or damage to the street trees including their trunks and roots.

Details of street tree protection measures must be clearly notated on all plans used as part of the contract specifications.

Advice: Once the specification documents showing adequate tree protection have been approved, City Life will issue a condition endorsement (see general advice on how to obtain condition endorsement). It is recommended that documentation for condition endorsement be submitted well before submitting documentation for other

approvals. Failure to address condition endorsement requirements may result in unexpected delays.

Reason for condition

To maintain the amenity value of street trees as per the City of Hobart Street Tree Strategy.

OPS 5

The Council must be compensated for the removal of the three trees from the Lefroy Street carpark in accordance with the following and to the satisfaction of the Director City Life:

1. **The planting of three replacement trees on the site, within 12 months of the date of this permit, or a timeframe as otherwise agreed to by the Director City Life; and**
2. **Cash compensation in lieu of the planting of three further trees at a cost of \$880 per tree (\$2,640 total).**

Advice: Please call Council's Program Leader Arboriculture and Nursery, on 6238 2807, to arrange the details of the three replacement trees and to arrange payment of the cash compensation.

Once the replacement trees and the replacement fee has been arranged, City Life will issue a condition endorsement. It is recommended that documentation for condition endorsement be submitted well before submitting documentation for other approvals. Failure to address condition endorsement requirements may result in unexpected delays.

Reason for condition

Trees that are removed as part of Council projects are required to be replaced at a minimum 2 for 1 basis as per the City of Hobart Tree Removal Policy.

ADVICE

The following advice is provided to you to assist in the implementation of the planning permit that has been issued subject to the conditions above. The advice is not exhaustive and you must inform yourself of any other legislation, by-laws, regulations, codes or standards that will apply to your development under which you may need to obtain an approval. Visit the Council's [website](#) for further information.

Prior to any commencement of work on the site or commencement of use the following additional permits/approval may be required from the Hobart City Council.

CONDITION ENDORSEMENT

If any condition requires that further documents are submitted and approved, you will need to submit the relevant documentation to satisfy the condition via the Condition Endorsement Submission on Council's [online services e-planning portal](#). Detailed instructions can be found [here](#).

A fee of 2% of the value of the works for new public assets (stormwater infrastructure, roads and related assets) will apply for the condition endorsement application.

Once approved, the Council will respond to you via email that the condition has been endorsed (satisfied).

Where building approval is also required, it is recommended that documentation for condition endorsement be submitted well before submitting documentation for building approval. Failure to address condition endorsement requirements prior to submitting for building approval may result in unexpected delays.

BUILDING PERMIT

You may need building approval in accordance with the *Building Act 2016*. Click [here](#) for more information.

This is a Discretionary Planning Permit issued in accordance with section 57 of the *Land Use Planning and Approvals Act 1993*.

PLUMBING PERMIT

You may need plumbing approval in accordance with the *Building Act 2016*, *Building Regulations 2016* and the National Construction Code. Click [here](#) for more information.

BUILDING OVER AN EASEMENT

In order to build over the service easement, you will require the written consent of the person on whose behalf the easement was created, in accordance with section 74 of the *Building Act 2016*.

NEW SERVICE CONNECTION

Please contact the Hobart City Council's City Life Division to initiate the application process for your [new stormwater connection](#).

STORMWATER

Please note that in addition to a building and/or plumbing permit, development must be in accordance with the Hobart City Council's Infrastructure By law. Click [here](#) for more information.

STRUCTURES CLOSE TO COUNCILS' STORMWATER MAIN

The design of structures (including footings) must provide protection for the Council's infrastructure. For information regarding appropriate designs please contact the Council's City Life Division. You may need the General Manager's consent under section 13 of the *Urban Drainage Act 2013* and consent under section 73 or 74 of the *Building Act 2016*.

RIGHT OF WAY

The private right of way must not be reduced, restricted or impeded in any way, and all beneficiaries must have complete and unrestricted access at all times.

You should inform yourself as to your rights and responsibilities in respect to the private right of way particularly reducing, restricting or impeding the right during and after construction.

PRIVATE COVENANTS

Please be advised that this property is subject to covenants contained within the schedule of easements.

The approved development may require consent and/or a modification to the covenant to ensure it is undertaken lawfully. You must not act on this planning permit until you have obtained any necessary consent or modification to the covenant which is required for the approved development.

If you proceed with the development inconsistent with the terms of the covenant, the parties with the benefit of the covenant may be entitled to make an application in the Courts to restrain a breach. The grant of this planning permit does not constitute a waiver, modification or release of the terms of the covenant nor approval under the terms of the covenant to undertake the proposed development.

WEED CONTROL

Effective measures are detailed in the Tasmanian Washdown Guidelines for Weed and Disease Control: Machinery, Vehicles and Equipment (Edition 1, 2004). The guidelines can be obtained from the Department of Primary Industries, Parks, Water and Environment [website](#).

NOISE REGULATIONS

Click [here](#) for information with respect to noise nuisances in residential areas.

WASTE DISPOSAL

It is recommended that the developer liaise with the Council's Cleansing and Solid Waste Unit regarding reducing, reusing and recycling materials associated with demolition on the site to minimise solid waste being directed to landfill.

Further information regarding waste disposal can also be found on the Council's [website](#).

FEES AND CHARGES

Click [here](#) for information on the Council's fees and charges.

DIAL BEFORE YOU DIG

Click [here](#) for dial before you dig information.



(Deanne Lang)

Development Appraisal Planner

As signatory to this report, I certify that, pursuant to Section 55(1) of the Local Government Act 1993, I hold no interest, as referred to in Section 49 of the Local Government Act 1993, in matters contained in this report.



(Ben Ikin)

Senior Statutory Planner

As signatory to this report, I certify that, pursuant to Section 55(1) of the Local Government Act 1993, I hold no interest, as referred to in Section 49 of the Local Government Act 1993, in matters contained in this report.

Date of Report: 12 August 2022

Attachment(s):

Attachment B - CPC Agenda Documents

Attachment C - Submission To Planning Authority - TasWater

ireneinc
PLANNING & URBAN DESIGN



6 July 2022

Ben Ikin
GPO Box 53
HOBART, TAS 7001

Dear Ben,

FURTHER INFORMATION - PLN-22-266
325 ELIZABETH STREET & 321 - 323A ELIZABETH STREET & 16 A LEFROY
STREET, NORTH HOBART

I am writing in response to the letter received from Council on 18th May 2022 requesting further information in response to the proposed development at 325 Elizabeth Street & 321 - 323a Elizabeth Street & 16 A Lefroy Street, North Hobart (PLN-22-266).

The letter is accompanied by the following updated documentation:

- Updated drawing set - (S-P-19-0421-00-LEFROY STREET CAR PARK FULL SET-REV01)
- PLN Fi3 RFI Sketch Rev. 01
- Updated soil and water management plan
- Updated electrical and lighting concept design memorandum - (T-P.19.0421-05-ELE-REP-009-Rev01)
- Updated stormwater management plan report
- Updated inundation assessment report
- MUSIC model for stormwater design as requested by Council; and

The following is in response to those enquiries:

PLN Fi6

To enable the Council to assess the application against the (External Lighting) use in the Inner Residential Zone of the Hobart Interim Planning Scheme 2015, please provide:

- Amended site plan (General Arrangement - 321-325 Elizabeth Street Proposed Works) - Drawing No. S-P.19.0421-00-CIV-DRG-121 dated 23/3/2022 to identify any habitable room windows within the rear elevation of the dwellings within 14 Lefroy Street and the freestanding dwelling within 317 Elizabeth Street which face the proposed light poles (and light); and
- The distance between the lights and these habitable room windows must be notated on the plan

Please refer to the amended documentation prepared by Pitt & Sherry - specifically document T-P.19.0421-05-ELE-REP-009 (Rev01) - page 3 (section 3.2.1) and page 22-24.

ireneinc
49 Tasma St, North Hobart, TAS 7000
Tel (03) 6234 9281
Fax (03) 6231 4727
Mob 0418 346 283
Email planning@ireneinc.com.au

PLANNING TAS PTY LTD TRADING AS IRENEINC PLANNING & URBAN DESIGN

ABN 78 114 905 074

PLN Fi3

To enable the Council to assess the application against Part B: 5.0 of the Hobart Interim Planning Scheme 2015, please provide: Scaled and dimensioned site plan and elevation plan (or Design drawings) demonstrating the following:

- 1. the maximum height of the proposed fence above natural ground level along the shared property boundary of 321 - 323A Elizabeth Street and 317 Elizabeth Street*
- 2. the proposed construction materials and finish/ (colour) of the fence*
- 3. the width of the pickets and gaps or confirm that the fence will not have any transparency (ie palings).*

As outlined in document PLN-Fi3 Sketch (rev. 01) the fence is to be 2.1m in height and will consist of a colorbond fence, with fence colour to match the existing fence, as illustrated in the document referred above. The fence will not have any transparency.

Stormwater code**SW 1**

- 1. Discuss the long-term ownership and maintenance of all assets (including but not limited to wall, raingarden, fencing, pits, lighting), both during the lease and after. Clearly distinguish between public infrastructure (under the Urban Drainage Act), Council-owned, and private.*

With regard to point 1, please refer to the accompanying documents prepared by Pitt & Sherry.

- 2. Plans demonstrating how runoff from 325 Elizabeth St will be discharged appropriately to public infrastructure within its title boundaries. Clearly show any existing connections for that Lot.*

Please refer to sheet DRG-201 (rev. 01) for details.

- 3. Confirm the ag drain for the new wall will drain to the new overflow pit (ie that a separate outlet to the creek or public main is not proposed).*

Please refer to sheet DRG-201 (rev. 01) and DRG-503 (rev. 01) for details.

- 4. Clearly show that all new or upgraded connection to the Rivulet are hydraulically non-intrusive and detail any scour and erosion control needed.*

All three proposed connections to the rivulet are through concrete walls, with bedrock present in the channel. This constitutes a hydraulically non-intrusive outlet. Existing outlet photos are provided in both the stormwater management plan report and in the drawing set.

Refer to Page 12 of the accompanying stormwater report.

Sw 5

- 1. Please provide the MUSIC model for the proposed treatment, or all inputs, particularly the SpelFilter bypass rate.*

As outlined in the accompanying documentation - the Spelfilter Bypass Rate is 1.47l/s as noted in the stormwater report. Overflow is via a weir in the pit.

The MUSIC Model accompanies this submission.

2. *The proposed treatment train includes some maintenance requirements/ issues not accepted by Council for public stormwater treatment.*

Litter trap is proposed in the existing Lefroy Street car park. This is a proprietary product installed across various private and public systems around Australia. It is a suitable solution for the car park and as such proposed for the project. The relevant Council Department to accept and maintain the system as per the maintenance requirements.

3. *Please clarify any impact on the raingarden's maintenance or plant health from the proposed multi-purpose use (detention, treatment and overland flow path discharge) -ie depth, frequency & duration, including from the external overland flow.*

As discussed with Council's planning team during a meeting, the raingarden's maintenance and health will not be negatively impacted by the proposed location.

The "detention" provided above the pit spill level will only operate in large storms with the result being slightly deeper water. This will have no impact on the plants.

Significant overland flows are only anticipated in major storm events where the upstream Council network is overwhelmed. A well-established raingarden will resist the shallow flooding estimated in the flood assessment and will also help direct water back into the channel by providing a hydraulically rough surface.

4. *Discuss any possible interaction between the contaminated site and the ag drains or raingarden.*

An impervious HDPE liner will be incorporated into the raingarden. Drawing has been updated to suit.

Refer to drawing DRG-201 (rev. 01).

Sw 6

A stormwater drainage design prepared by a suitable qualified person which demonstrates compliance with the following:

- a) *accommodate a storm with an ARI of 20 years when the land serviced by the system is fully developed Council notes the current 5% and 1% including climate change have been modelled as contained within the channel. E7.7.1 A3 requires examination of 5% AEP events for a future fully developed catchment. Some discussion around this is required.*

Please refer to the updated stormwater report - specifically section 4.3.

SW 7

A stormwater drainage design prepared by a suitable qualified person which demonstrates designed to accommodate a storm with an ARI of 100 years. Please clarify the proposed height of kerbs along the Rivulet and the boundary with 45A Burnett, including freeboard.

The inundation study suggests the carpark will be graded towards the Rivulet with no protrusion >50mm. The stormwater report implies a kerb will run the length of the Rivulet to direct all water to the treatment.

The stated 1% flows in the Stormwater report appear to only include the site runoff, not the additional overland flow external to the site.

The 50mm protrusion has been removed and standard K&C proposed for the car park. Additional comment regarding the kerb capacity and the kerb on the North-eastern boundary provided in the updated stormwater report.

Refer Inundation Assessment report, Page 22 (Figure 21) and Section 3.

Inundation prone area code

The site is subject to both inland and watercourse flooding. To enable the Council to assess the application against the relevant provisions of the Inundation Prone Areas Code of Hobart Interim Planning Scheme 2015, please provide:

IND 1

A revised flood hazard report (as defined in HIPS E15.3) and inundation risk management plan (including associated calculations) prepared by a suitably qualified person in accordance with best practice guidelines that details:

- a. the relevant inundation levels and overland flow paths into, through and out of the site (based on a predicted 1% annual exceedance probability flood event for the year 2100 including consideration of climate change);*
- b. the impact of the proposed development upon the risk of inundation of other land, buildings and infrastructure from both the watercourse itself and any altered overland flow paths (including frequency, extent, depth and velocity, and all assumptions used in the modelling); and*
- c. any inundation control measures or design features proposed to be employed to reduce the risk, and the resultant level of risk.*

Please refer to the amended Inundation Assessment.

This must clarify:

- 1. the model cross-sections do not appear to reflect the proposed works, particularly when compared to General Arrangement Plan HB19500-S104 RevA, previously submitted to Council for a different application.*

A review of the surveyed (post-major erosion), proposed design section and flood modelled section has been undertaken. The Appendix to this letter shows 3 of the cross section widths from the flood model XS2, XS3, XS4.

At the location of the flood model cross sections there is a variation at cross section 3 (~250mm) from the survey and flood model extent. Additionally, there are intermediate cross sections between 3 and 4 where the base width does increase and then contracts again by cross section 4. This is where the majority of the bank erosion occurred in 2018 which explains the expansion then contraction.

As the estimated flood behaviour (as outlined in the amended Inundation Assessment) has considerable freeboard and it contracts by cross section 4 the flood impact result of remodelling this would be negligible and any change would be contained in the channel.

- 2. why the discharge from the DN1050 and DN900 is less than their Manning free-flow capacity, when Council records demonstrate the mains are pressurised during much less intense events*

As discussed at the meeting with Council, there is significant uncertainty in the flood and stormwater network behaviour above the site. Multiple scenarios could be modelled assuming less or more blockage/flow in the pipe network. P&S noted that, as described in the flood model cross sections, the channel has significantly more capacity available than the flow modelled.

Council agreed that this was not necessary to undertake multiple upstream blockage/flow scenarios. Refer to SW6.

3. *please clarify the increased depth of flooding on the NE end of 45A Burnett, and the current modelled flood depth (ie Figure 13 it is difficult to tell if transparent or 0.02-0.04 increase, and the downstream locations are not shown on Figure 8 or 9).*

P&S have noted the increase on the figure at 45A Burnett and re-worded the flood impact statement to clearly state that no change in flood hazard category will occur.

Refer Inundation Assessment report, Page 14 (Figure 11).

4. *whether the proposed bridge design (including soffit height and separation from the culvert) will affect Council's capacity to direct more floodwater to the rivulet.*

P&S reviewed and confirmed proposed capacity as per SW6.

5. *why the flood level is lower in the rivulet post-development by more than the lowered bed level.*

As outlined above and in the accompanying documentation, the flood depth is relatively lower as the shape of the bed is proposed to be altered.

Refer DRG-503-Rev01 for proposed alterations to rivulet channel at upstream bridge opening.

IND 2

1. *A clear contour site plan at scale of 1:100 at A3 and multiple cross-sections detailing the proposed extent and depth of fill, showing the 1% and 5% AEP flood levels. These must show the current bank, assumed pre-2018 bank (with supporting evidence) and proposed wall, and extend to top of bank on the Lefroy St side of the creek.*
2. *Clearly show the extent of Rivulet bed to be lowered.*

P&S can provide cross sections on drawings detailing rivulet pre-development and proposed and 5% and 1% flood levels and a contour plan but most of this information is already included in the flood study report.

Please refer to the response to IND 1 point 1 and the appendix to this letter.

IND 3

Council notes the comment that some increase in velocity was modelled at existing erosion spots downstream of the site, and suggestion that this could be mitigated by additional surface roughness. Please clarify the extent to which this would mitigate the increased velocity, which walls it would be applied to (and their ownership), any associated increase in water level, and that the development would not cause increased erosion or sedimentation.

The marginal increase in velocity is associated with the proposed works directing more water into the channel (and away from private property).

Refer Inundation Assessment report, Section 2.5.1.

Waterway and coastal protection code

To enable the Council to assess the application against the relevant provisions of the Waterway and Coastal Protection Code of the Hobart Interim Planning Scheme 2015 please provide:

WCPC1 An updated planning report more thoroughly addressing sub-clauses (c), (d) and (e) of performance criterion E11.7.1 of the Code.

Please refer to the amended planning report and amended Soil and Water Management Plan report - the sections of the SWMP that have been updated include Sections 4.2 and 4.3.

OPEN SPACE

Please provide an assessment by a suitably experienced arborist of the level of impact of the proposed works on the trees within the Lefroy Street Carpark. This assessment should specify the tree protection measures required to maintain the trees in good health.

Consideration should be given to the potential for impact from new underground services, parking space resurfacing and new infrastructure such as light poles and charging stations including associated footings.

Please notate the plans to say 'existing trees to be retained and protected from damage'

All works have been planned to ensure that any new infrastructure is outside of the tree protection zones. In the event that works are required within the tree protection zone, an experienced arborist will be provided to minimise impact to the existing trees.

If you have any further queries in relation to any of the above, please contact me on 6234 9281.

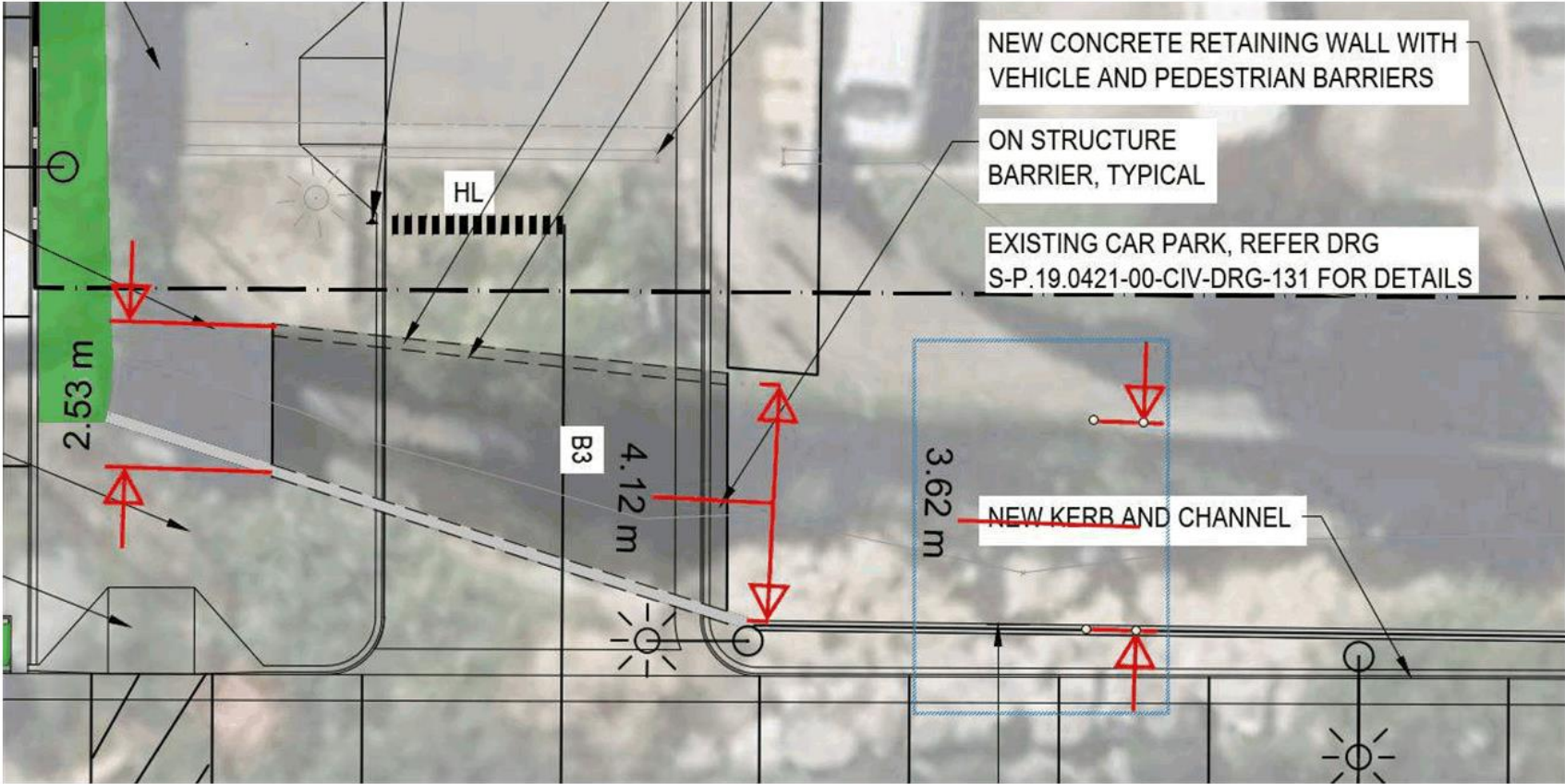
Yours sincerely,

Phil Gartrell

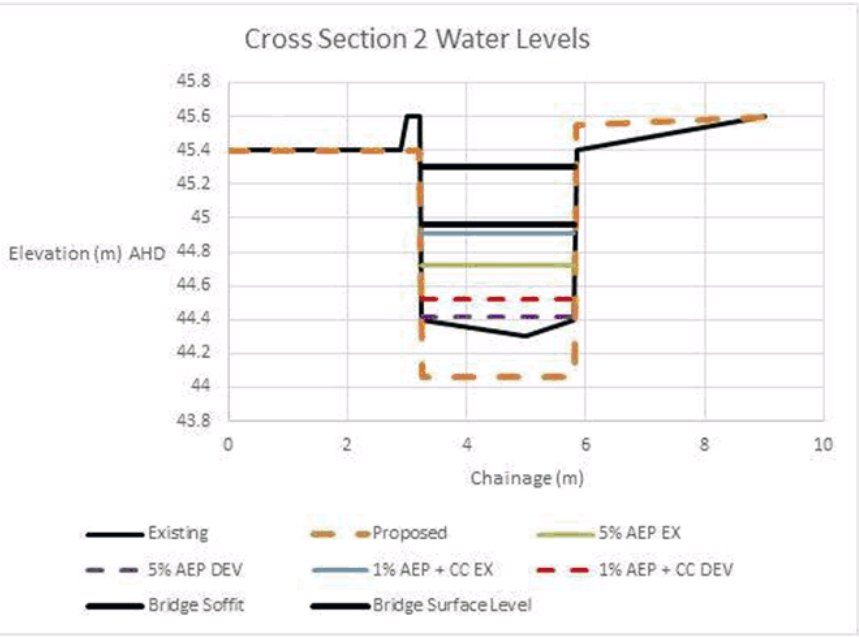
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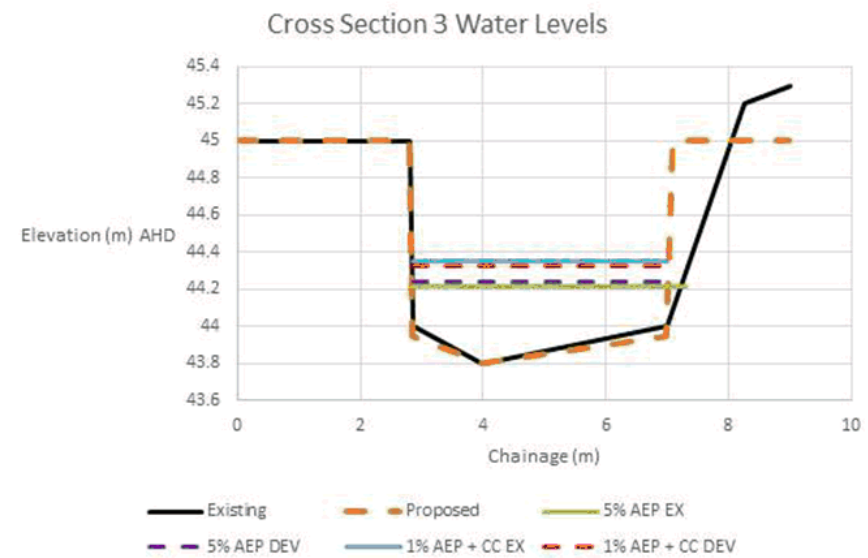
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APPENDIX A: MODELLED CROSS-SECTIONS

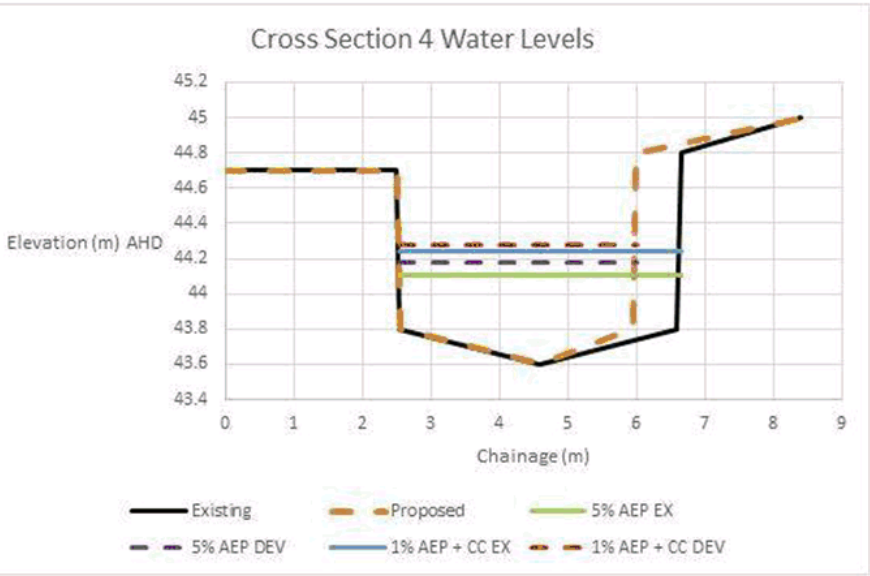
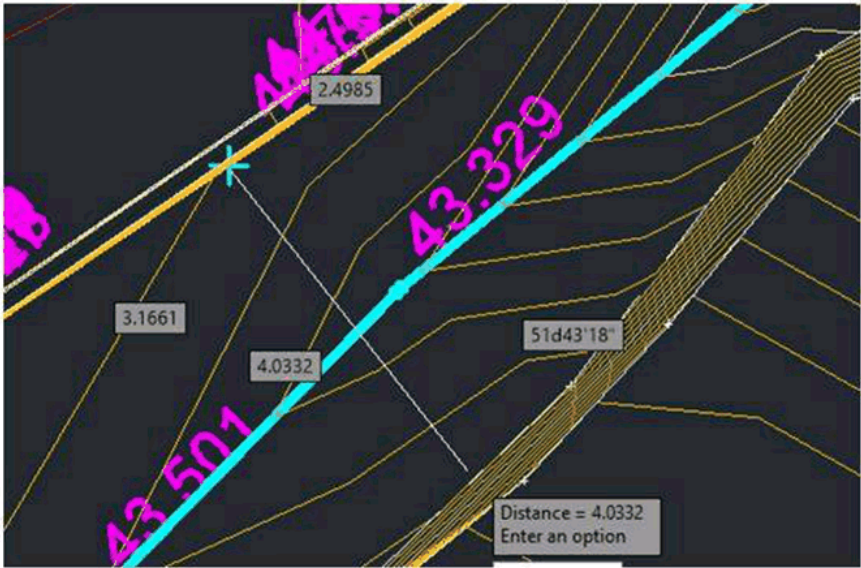


XS2





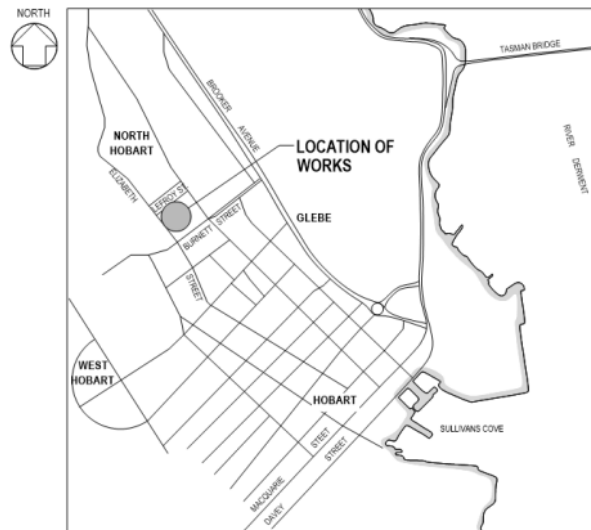
XS4



CITY OF HOBART

LEFROY STREET CAR PARK

UPGRADES AND EXTENSION



LOCATION PLAN
SCALE: NTS

TABLE OF CONTENTS		
DRAWING NUMBER	REV	DESCRIPTION
S-P 19 0421-00-CIV-DRG-001	1	COVER SHEET AND TABLE OF CONTENTS
S-P 19 0421-00-CIV-DRG-011	0	KEY PLAN
S-P 19 0421-00-CIV-DRG-101	1	321-325 ELIZABETH STREET EXISTING CONDITIONS GENERAL ARRANGEMENT
S-P 19 0421-00-CIV-DRG-111	1	16A LEFROY STREET EXISTING CONDITIONS GENERAL ARRANGEMENT
S-P 19 0421-00-CIV-DRG-121	1	321-325 ELIZABETH STREET PROPOSED WORKS GENERAL ARRANGEMENT
S-P 19 0421-00-CIV-DRG-131	1	16A LEFROY STREET PROPOSED WORKS GENERAL ARRANGEMENT
S-P 19 0421-00-CIV-DRG-201	1	321-325 ELIZABETH STREET DRAINAGE AND SERVICES PLAN
S-P 19 0421-00-CIV-DRG-202	1	321-325 ELIZABETH STREET STORMWATER MAIN LONGITUDINAL SECTION
S-P 19 0421-00-CIV-DRG-211	0	16A LEFROY STREET DRAINAGE AND SERVICES PLAN
B-P 19 0421-00-STR-DRG-502	1	321-325 ELIZABETH STREET TYPICAL SECTION THROUGH BRIDGE
B-P 19 0421-00-STR-DRG-503	1	321-325 ELIZABETH STREET RETAINING WALL ELEVATION AND TYPICAL SECTIONS
S-P 19 0421-00-ELE-DRG-601	1	16A LEFROY STREET ELECTRICAL SERVICES PLAN
S-P 19 0421-00-ELE-DRG-602	1	321-325 ELIZABETH STREET ELECTRICAL SERVICES PLAN
S-P 19 0421-00-ELE-DRG-603	0	321-325-ELIZABETH STREET - ELECTRICAL SINGLE LINE DIAGRAM - CAR PARK SWITCHBOARD

REFERENCE FILES ATTACHED:

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2	ISSUED FOR DEVELOPMENT APPLICATION	VIS	JAK	REVC	23/03/2022			
3	ISSUED FOR CLIENT REVIEW	VIS	JAK	REVC	25/02/2022			
4		WAF	JAK	REVC	14/10/2021	DATE		

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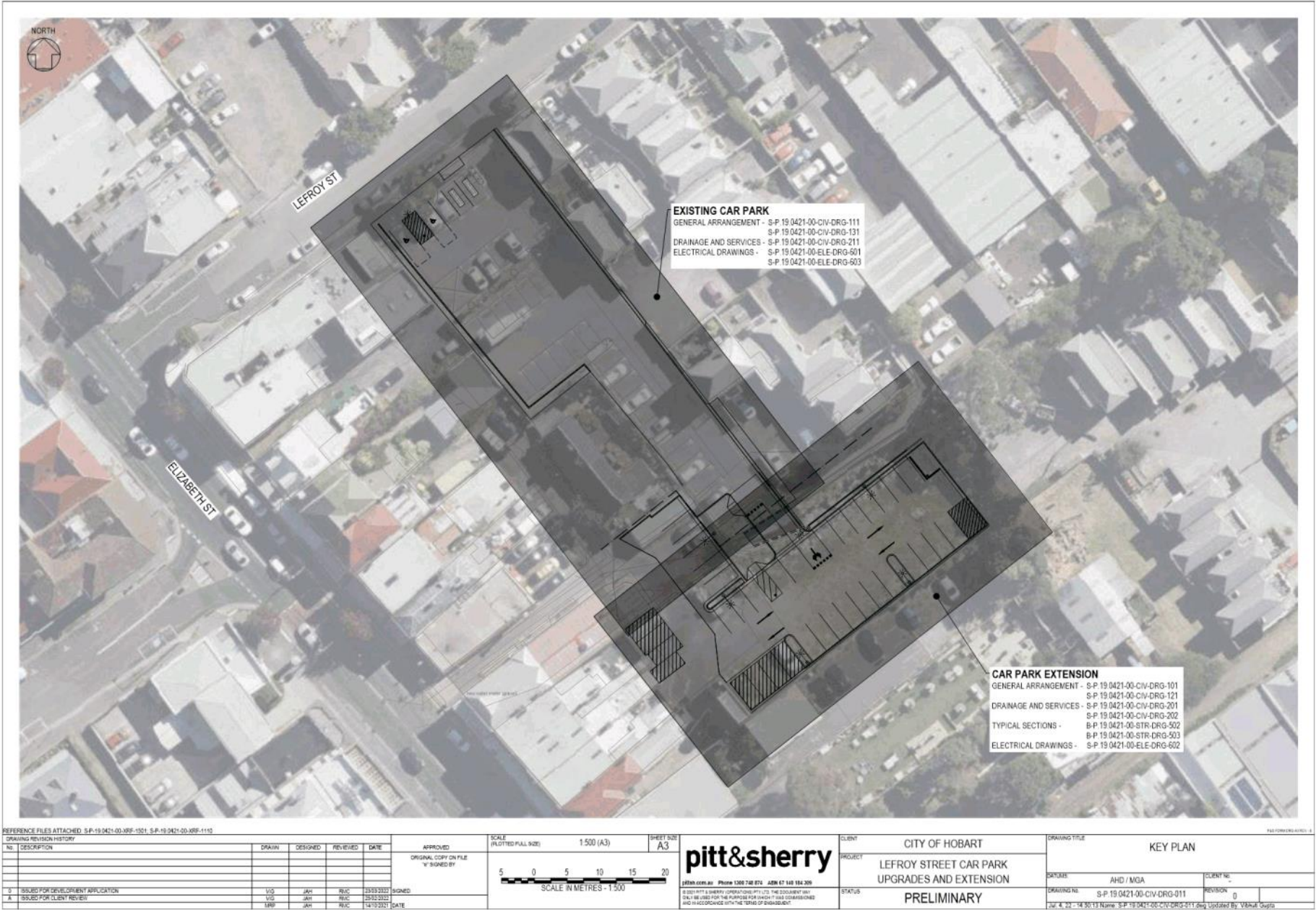
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UPGRADES AND EXTENSION
PRELIMINARY

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LEFROY STREET CAR PARK
UPGRADES AND EXTENSION
PRELIMINARY

COVER SHEET AND
TABLE OF CONTENTS

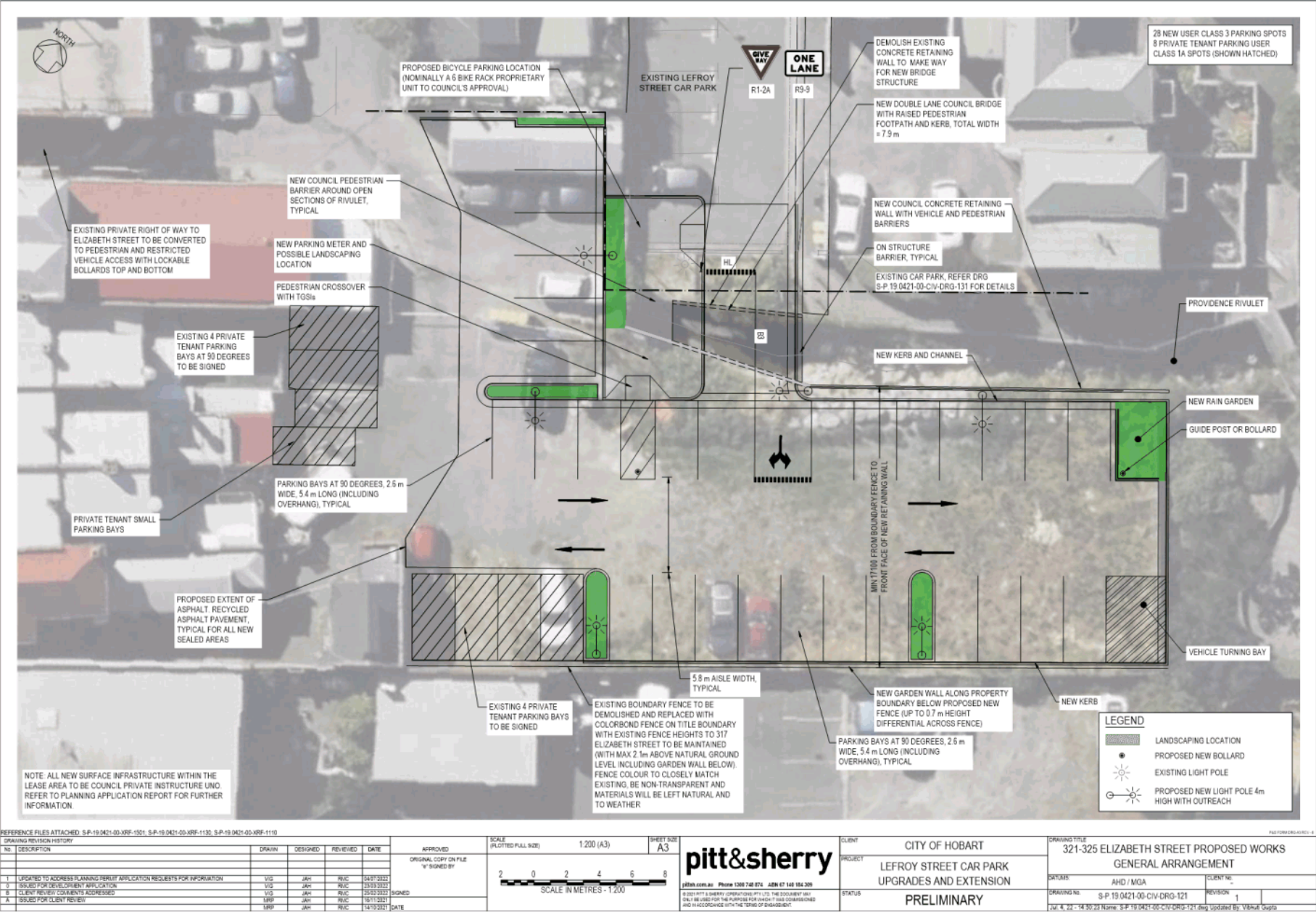
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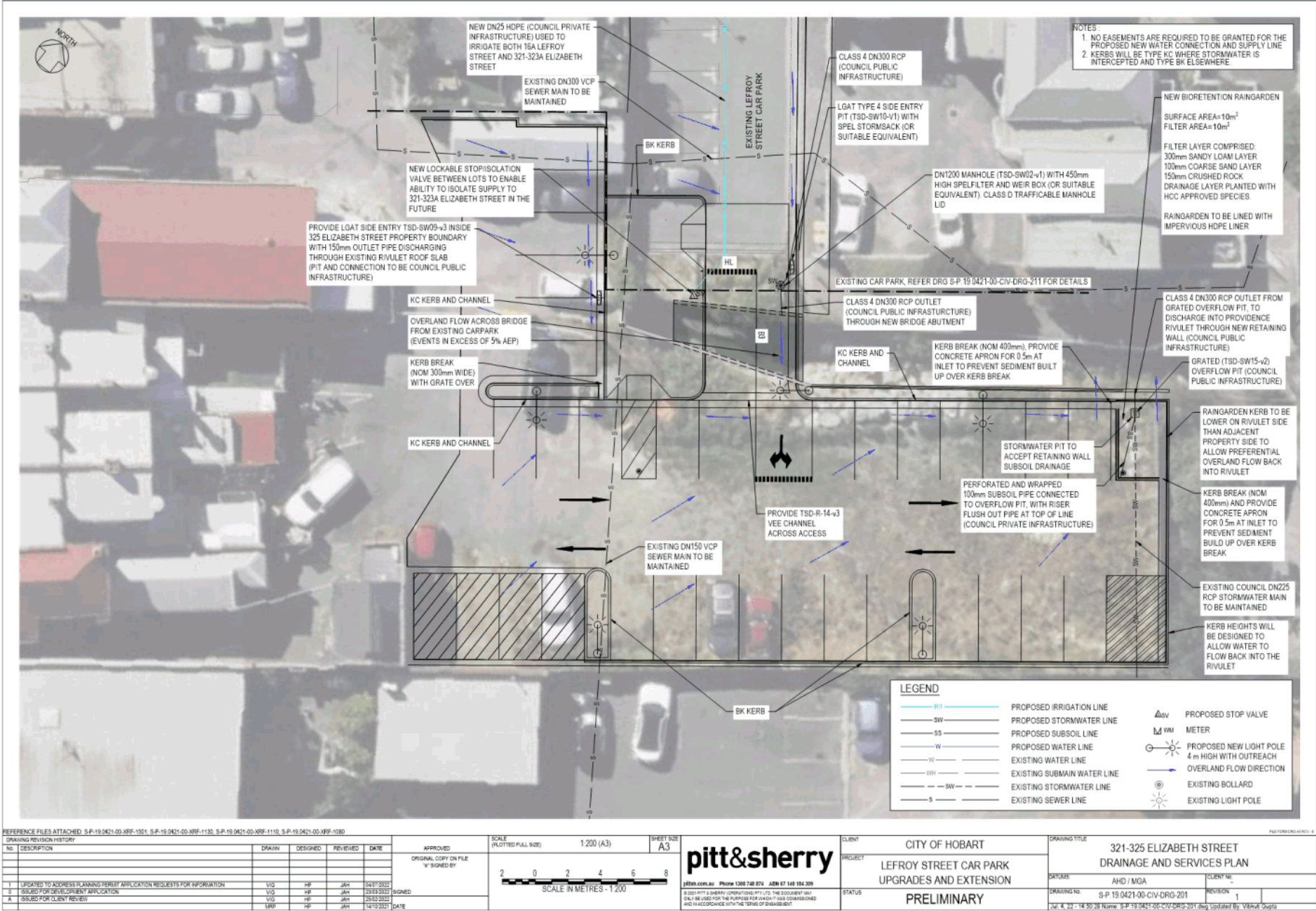


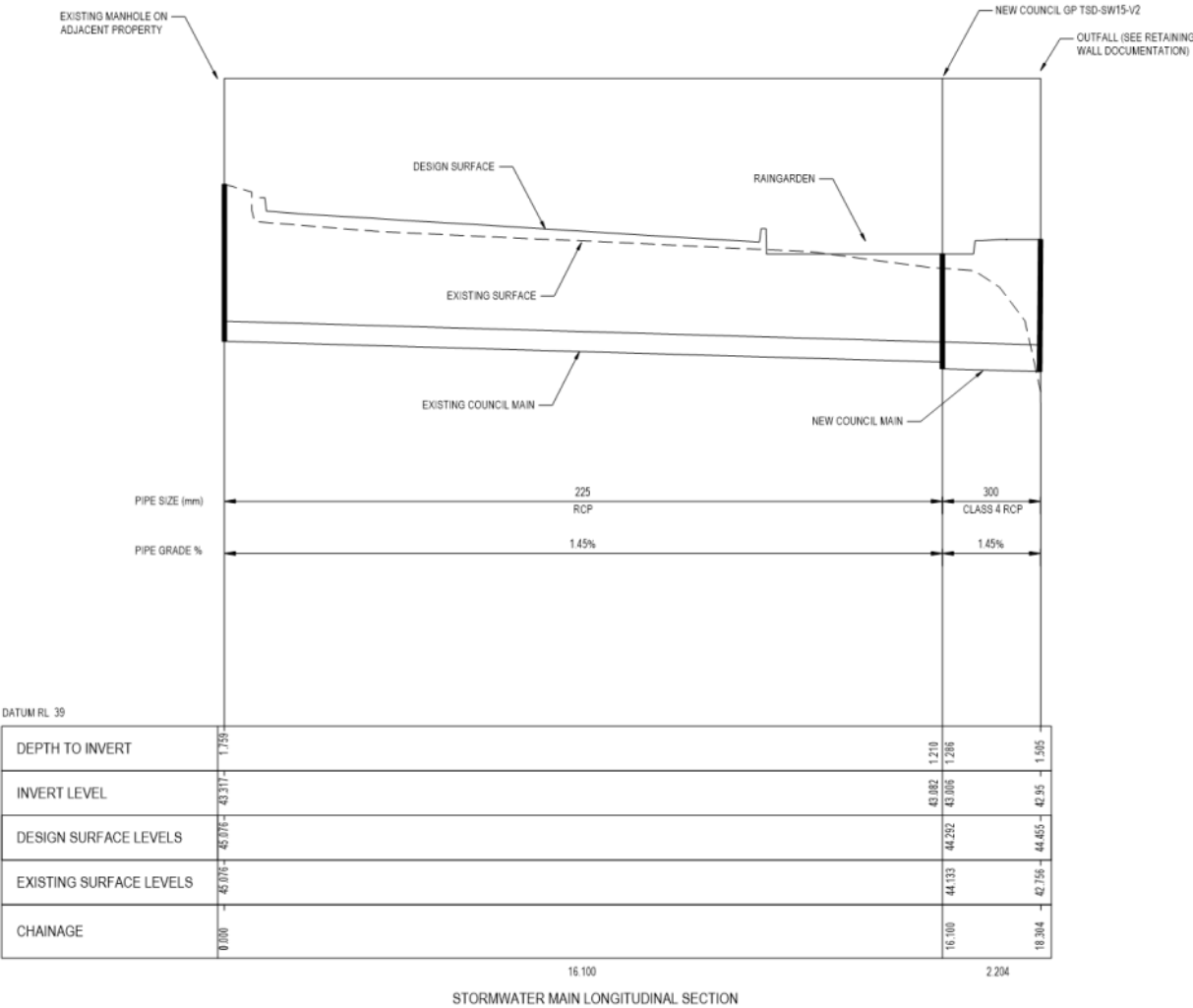






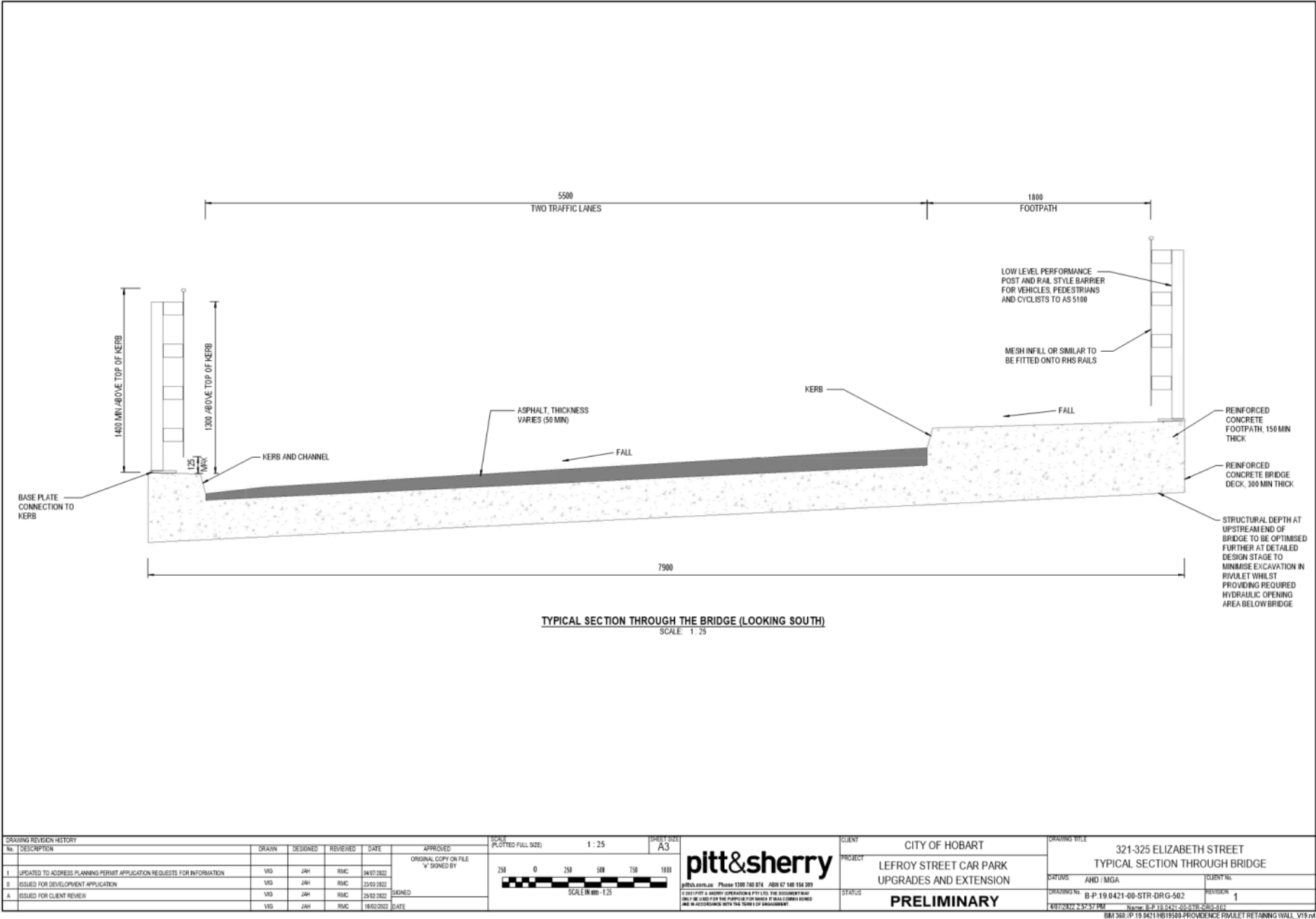


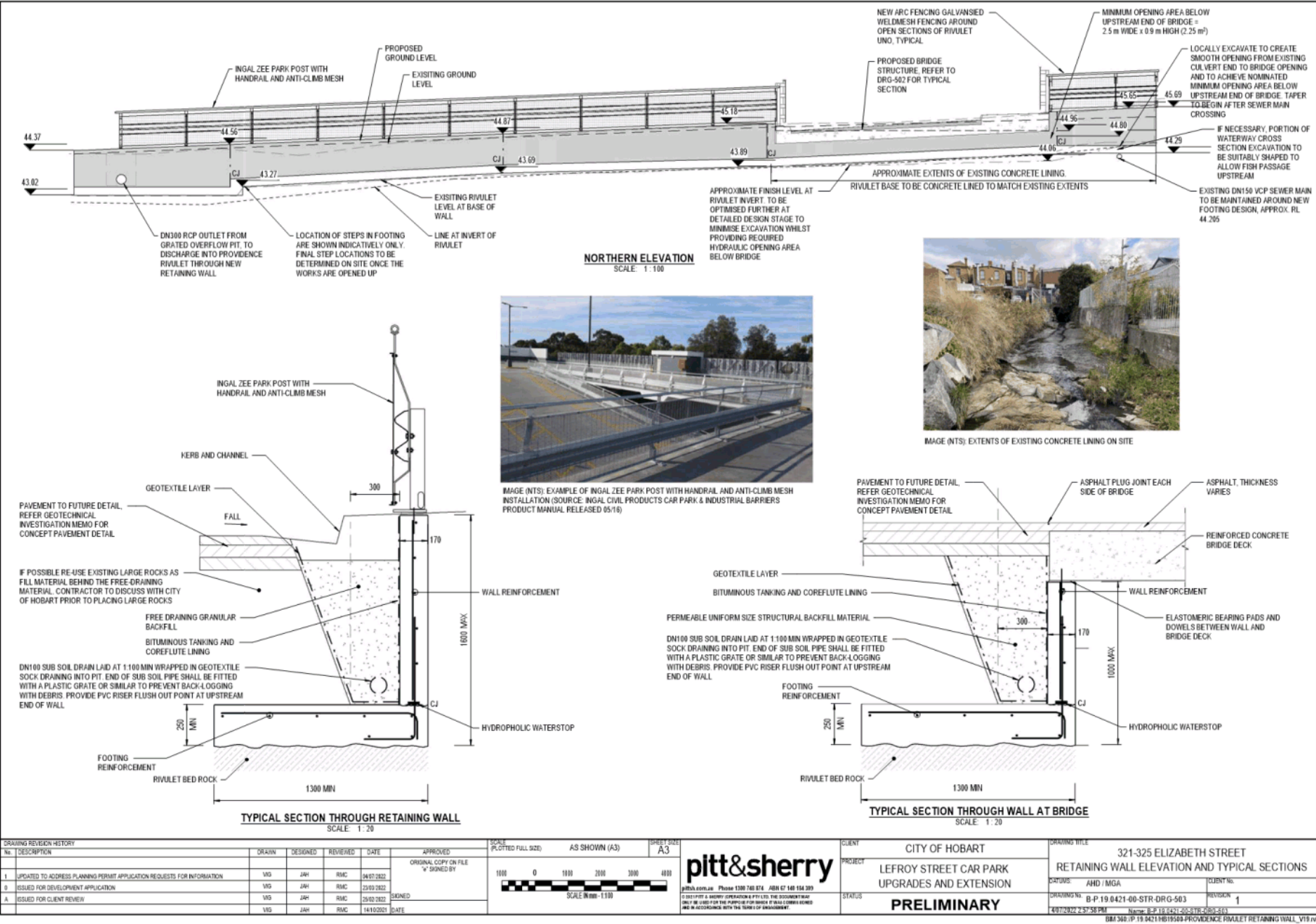




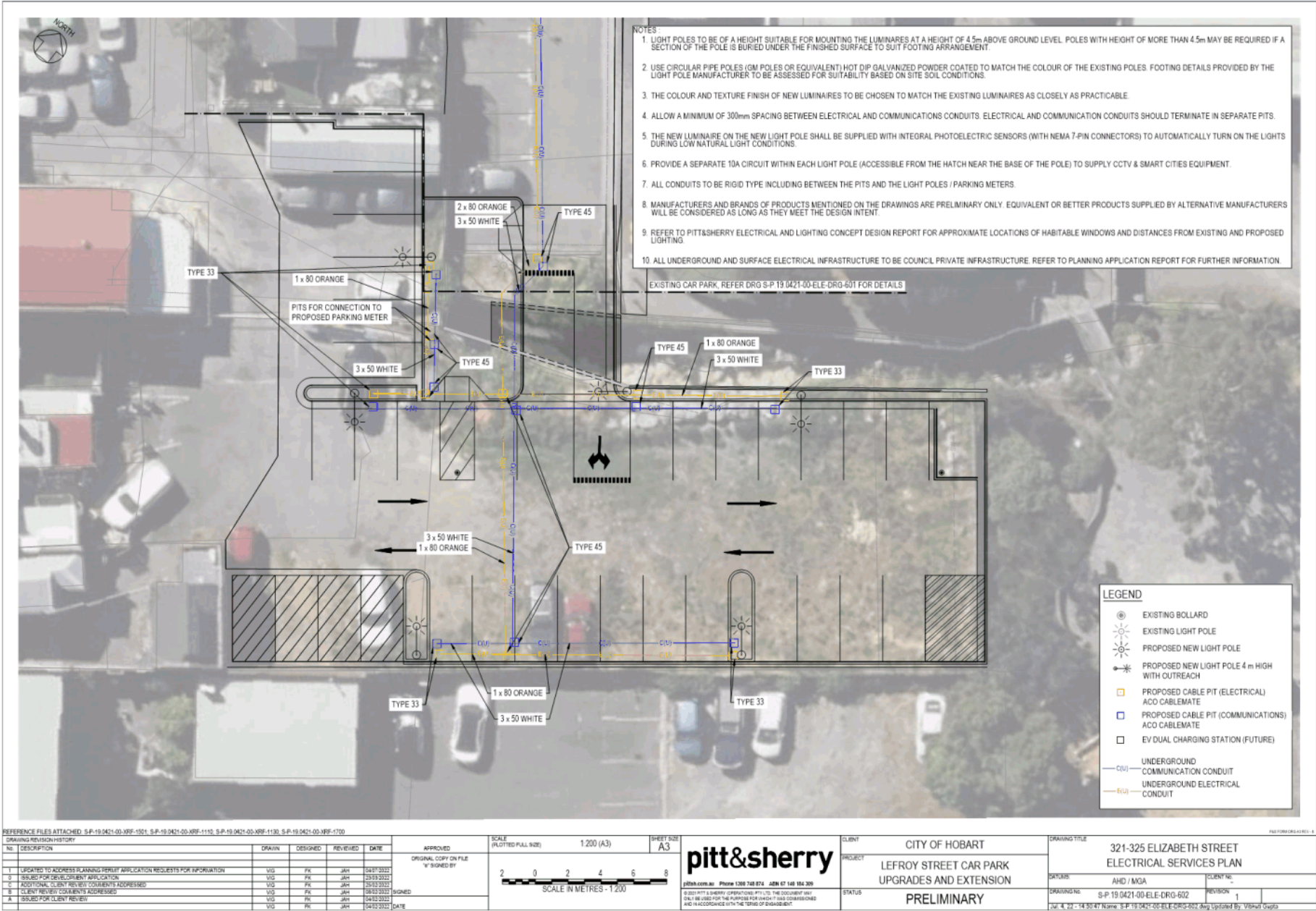
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2	SUBJECT FOR DEVELOPMENT APPLICATION	VIS	HF	JAH	23/03/2022						
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4	ISSUED FOR CLIENT REVIEW	VIS	HF	JAH	14/03/2021						





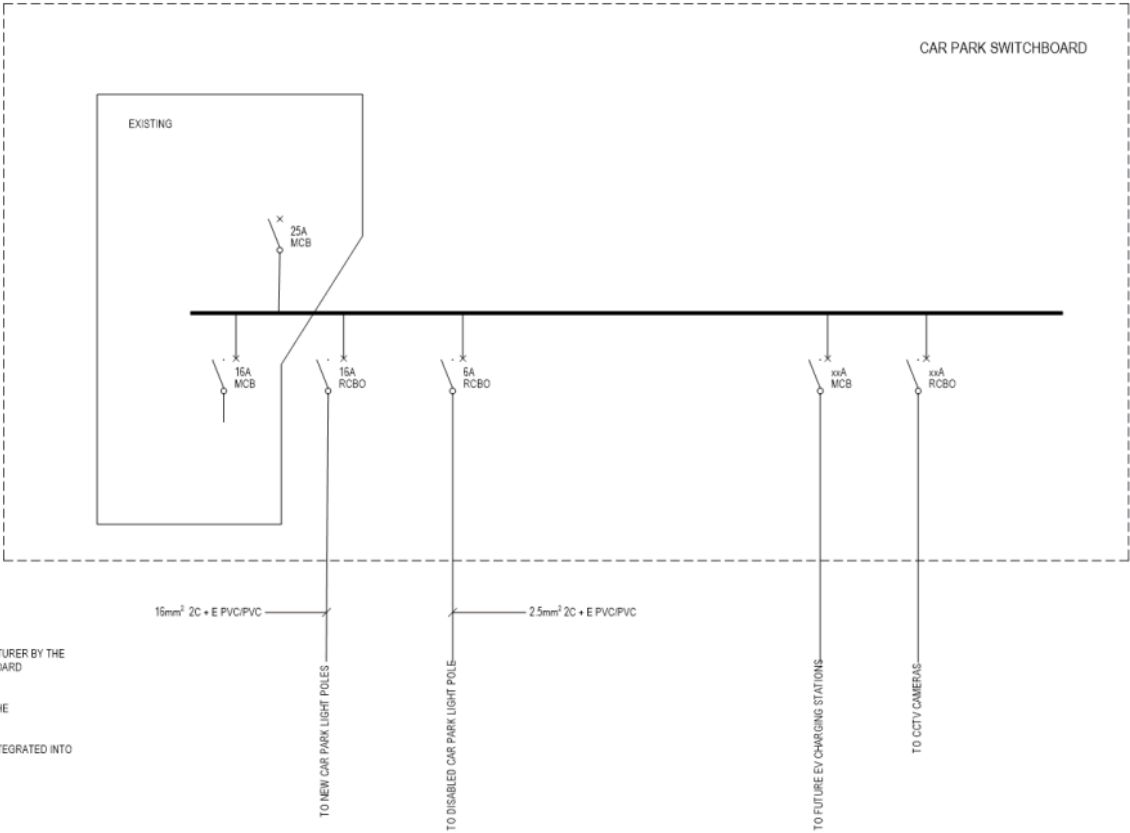








INSTALL RCBOs DOWNSTREAM OF
INCOMING MCB AS PER SCHEMATIC



NOTES:

1. THE ELECTRICAL DEMAND FOR THE EV CHARGING STATIONS ARE TO BE SOURCED FROM THE MANUFACTURER BY THE D&C CONTRACTOR. THIS WILL DETERMINE THE EXTENT OF THE UPGRADES REQUIRED TO THE SWITCHBOARD (INCLUDING THE INCOMING CABLE, INCOMING CIRCUIT BREAKER ETC.).
2. THE QUANTITY AND SIZE OF CIRCUIT BREAKERS FOR THE CCTV CAMERAS ARE TO BE DETERMINED BY THE SURVEILLANCE SYSTEM SUPPLIER.
3. THE LIGHTING CONTROL SCHEME FOR THE NEW LIGHTING SHALL COMPROMISE INDIVIDUAL PE CELLS INTEGRATED INTO INTO THE NEW LUMINAIRE. EACH LUMINAIRE WILL THEREFORE BE CONTROLLED INDIVIDUALLY.
4. ALL LIGHT POLES SHOULD BE EARTHED TO THE MAIN EARTH IN THE SWITCHBOARD USING THE EARTH CONDUCTOR IN THE SUBCIRCUIT CABLES.

REFERENCE FILES ATTACHED:

DRAWING REVISION HISTORY				
NO.	DESCRIPTION	DRAWN	DESIGNED	REVIEWED
1	ISSUED FOR DEVELOPMENT APPLICATION	VIG	PK	JAH
2	ADDITIONAL CLIENT REVIEW COMMENTS ADDRESSED	VIG	PK	JAH
3	CLIENT REVIEW COMMENTS ADDRESSED	VIG	PK	JAH
4	ISSUED FOR CLIENT REVIEW	VIG	PK	JAH

DATE	APPROVED
23/03/2022	
25/03/2022	
28/03/2022	
04/03/2022	
04/03/2022	

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CLIENT	CITY OF HOBBART
PROJECT	LEFROY STREET CAR PARK UPGRADES AND EXTENSION
STATUS	PRELIMINARY

DRAWING TITLE	
321-325-ELIZABETH STREET - ELECTRICAL SINGLE LINE DIAGRAM - CAR PARK SWITCHBOARD	
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321 - 325 ELIZABETH ST, 16A LEFROY ST



ireneinc & smithstreetstudio
PLANNING & URBAN DESIGN

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321 - 325 ELIZABETH ST, 16A LEFROY ST

Car Park & associated works

Last Updated - July 2022

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1. INTRODUCTION

Planning Tas Pty Ltd trading as Ireneinc Planning and Urban Design has been engaged by the City of Hobart (c/o Glenn Doyle) to prepare a development application for car park and ancillary works at 321 - 325 Elizabeth St, 16a Lefroy St. The following assessment has been undertaken based on the information available on www.theLIST.tas.gov.au and the *Hobart Interim Planning Scheme 2015*.

1.1 SITE DESCRIPTION

The subject site is contained in the following Certificates of Title:

- 176661/1 325 Elizabeth Street
- 137807/1 325 Elizabeth Street
- 137808/1 321-323A Elizabeth Street
- 137808/2 321-325A Elizabeth Street
- 112639/1 16A Lefroy Street
- Right of Way from Elizabeth Street

The site comprises of the existing Lefroy Street car park which has 22 ticketed public parking spaces and a further 12 spaces at the rear for council permit holders. The remainder of the site is currently utilised for informal private car park at the rear of 321-323A Elizabeth Street and 325 Elizabeth Street. The car park has been managed by a property agency, with users gaining access via a right of way from Elizabeth Street.

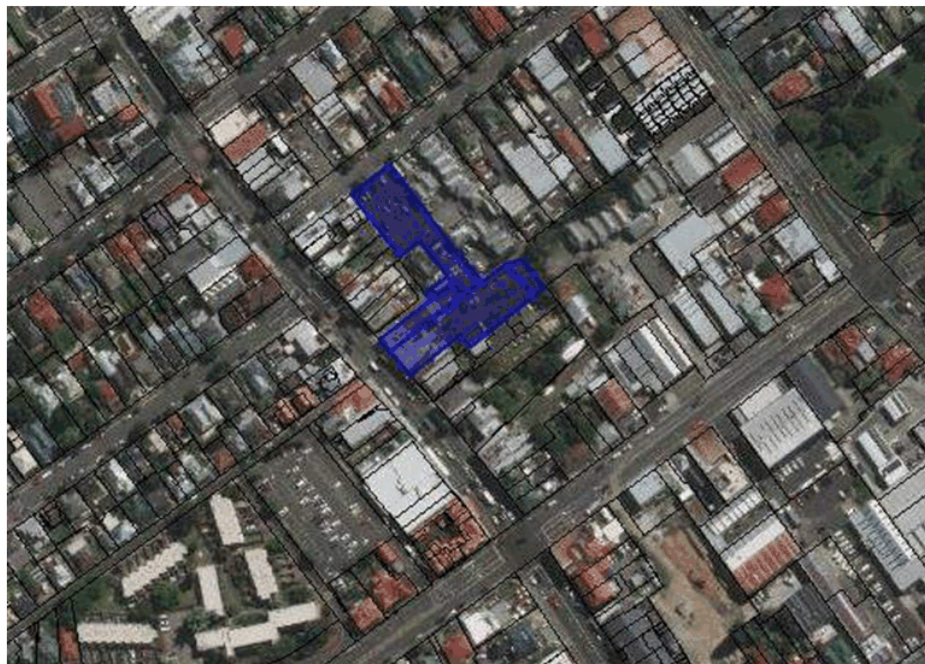


Figure 1: The Site (source: the LISTmap, 2022)

The site is currently zoned General Business for the first 30m extending from the frontage, with the rear 45m zoned Inner Residential. This pattern consistently runs along the land on this section of Elizabeth Street, with the General Business zone extending for the first 30m from the street frontage.



Figure 2: Site location and current use with General Business Zone (Blue), Inner Residential Zone (red) and utilities Zone (yellow) (source: the LISTmap, 2022)

The subject site is bordered by a newsagency at 317 Elizabeth Street. All remaining properties that adjoin the site are zoned Inner residential and predominantly consist of residential uses.

The existing public car park located at 16A Lefroy Street is currently accessed via Lefroy Street. 321-323A Elizabeth Street and 325 Elizabeth Street are accessed via a private right of way off Elizabeth Street.



Figure 3: Existing access to the site (source: the LISTmap, 2022).



Figure 4: View of the site from Elizabeth Street (source: Google Maps, 2021)



Figure 5: View of the Site from Lefroy Street (source: Google Maps, 2021)

The site is within the main activity area of North Hobart. There are no Tasmanian Heritage Register listed properties on the site. The nearby properties with THC listed heritage values include 315, 331, 333, and 335 Elizabeth Street.

A portion of the site is affected by the HIPS Heritage Area/Precinct overlay, the overlay aligns with the area of the site that is currently zoned General Business. The subject site and the City of Hobart Council operated carpark to the west are separated by an open section of the Providence Gully Rivulet.



Figure 6: Heritage Area/Precinct Overlay shown purple hatching, Heritage Register Listed properties shown shaded pink (source: the LISTmap, 2022).

2. PROPOSAL

The proposal is for a new carpark at 321 - 323A and 325 Elizabeth Street and the upgrade of existing parking facilities at 16A Lefroy Street.

16A LEFROY STREET

There are currently 34 carparking spaces in the existing Lefroy Street carpark. The proposed development includes the conversion of 3 existing parking bays to DDA parking bays as well as the conversion of 2 existing carparking bays into electric vehicle (EV) charging bays.

Localised resurfacing works are proposed in the area of the accessible parking spaces to achieve compliant surface levels. The 3 southernmost car parking spaces in the existing car park will also be realigned as part of the development. The car parking space closest to the proposed bridge will be reinstated for use as a turning bay and bicycle parking (subject to council approval). Due to the changes, the number of car parking spaces in the existing Lefroy Street car park are reduced from 34 spaces to 32 spaces.

321 - 323A AND 325 ELIZABETH STREET

A new public car park is proposed to be developed at 321-323A Elizabeth Street and 325 Elizabeth Street that will provide 36 carparking spaces. Of these, 28 will be for use by the public and 8 will be private tenant bays. Prior to noon, 3 of the public car parking spaces are proposed to have a 15-minute restriction to allow for deliveries to existing commercial premises who currently use the right of way as their only access for deliveries. The car park is expected to operate between 8:30 am and 10:00 pm.

The existing right of way from Elizabeth Street is proposed to be converted to a pedestrian and restricted vehicle access via the implementation of lockable bollards at either end. The five tenants who currently have access to the right of way, as well as Council and emergency services, will be able to use the restricted vehicle access by way of a master key. As such, other vehicles entering and exiting the car park will be required to use the car park access off Lefroy Street.

As part of the proposed development, an existing shed and fence at 325 Elizabeth Street is proposed to be demolished.

As part of the works, the new public car park will be connected to the existing car park at 16A Lefroy Street via a double lane bridge across Providence Rivulet. The proposal also includes an engineered retaining wall along the south-eastern bank of the Rivulet.

A title search revealed no identifiable owners of the Elizabeth Street Right of Way. However, a Registry search has revealed that the lot forms part of a deceased estate that was vested in Perpetual Trustees Executors and Agency Company of Tasmania. This company has since been deregistered and in accordance with section 601AD of the *Corporations Act 2001*, the site is vested to the Commonwealth. The Attorney General/ Solicitor General, as the emissary of the Commonwealth, has been notified as part of this application process.

3. CONSULTATION

As part of this application process, all adjoining and nearby neighbours were notified of the proposal, and inviting them to meet with the planning consultants to discuss any questions or concerns which they may have had.

The key concern raised was the potential for increased traffic using the right of way access from Elizabeth Street to the extended public car park. These concerns were considered legitimate, as the access is very narrow, and could potentially create conflict with pedestrians. As a result, the proponent proposes to restrict vehicular use of the right of way access, to promote pedestrian access to Elizabeth Street. The rights of existing beneficiaries will be protected by issuing keys to access the lockable bollards to that restricted group.



Figure 6 Neighbour notification

4. ZONING

The subject site currently has dual zoning, being both Inner Residential and General Business zone. This pattern is reflected along the larger lots that have frontage to Elizabeth Street. The sites with frontage to Elizabeth Street are zoned General Business to an extent of 30m, with the balance of the sites and the surrounding suburb being predominantly zoned inner residential.



Figure 7: The site and zoning map (source: the LISTmap, 2022)

4.1 INNER RESIDENTIAL ZONE

There are no Local Area Objectives or Desired Future Character Statements for this zone.

4.2 USE

Vehicle Parking is a discretionary use only if at:

- 321-323A Elizabeth Street (folio of the Register 137808/1 and 2); or
- 325 Elizabeth Street (folio of the Register 176661/1 and 137807/1); or
- 16A Lefroy Street (folio of the Register 112639/1 and 112639/2).

4.2.1 Use Standards

11.3.1 Non-residential Use

Objective: To ensure that non-residential use does not unreasonably impact residential amenity.

PLANNING SCHEME REQUIREMENTS

<p>A1</p> <p><i>Hours of operation must be within 8.00 am to 6.00 pm, except for office and administrative tasks or visitor accommodation.</i></p>	<p>P1</p> <p><i>Hours of operation must not have an unreasonable impact upon the residential amenity of land in a residential zone through commercial vehicle movements, noise or other emissions that are unreasonable in their timing, duration or extent.</i></p>
<p>COMMENTS</p> <p>The carpark is expected to operate between 8:30am and 10:00pm, consistent with the operating hours of the existing carpark. Assessment against the performance criteria is therefore required.</p> <p>P1</p> <p>According to the accompanying Traffic Impact Assessment (TIA), there will be an additional 80 vehicle movements per hour during peak daytime hours (8am to 6pm) and an additional 16 movements per hour at night (6pm to 8am). According to the accompanying Noise Impact Assessment (NIA), the existing night time noise Leq of 50.1 dB(A) already exceeds the <i>Tasmanian Environmental Protection Policy (Noise) 2009</i> sleep disturbance criterium of 45 dB(A). However, the NIA determines that the predicted level combined with the existing level results in a negligible change. Noise and other environmental emissions are considered low enough to not cause unreasonable impact on nearby residences. The proposal therefore satisfies the performance criteria.</p>	

<p>A2</p> <p><i>Noise emissions measured at the boundary of the site must not exceed the following:</i></p> <p>(a) 55 dB(A) (LAeq) between the hours of 8.00 am to 6.00 pm;</p> <p>(b) 5dB(A) above the background (LA90) level or 40dB(A) (LAeq), whichever is the lower, between the hours of 6.00 pm to 8.00 am;</p> <p>(c) 65dB(A) (LAmx) at any time.</p> <p><i>Measurement of noise levels must be in accordance with the methods in the Tasmanian Noise Measurement Procedures Manual, issued by the Director of Environmental Management, including adjustment of noise levels for tonality and impulsiveness.</i></p> <p><i>Noise levels are to be averaged over a 15 minute time interval.</i></p>	<p>P2</p> <p><i>Noise emissions measured at the boundary of the site must not cause environmental harm.</i></p>
<p>COMMENTS</p> <p>As per the NIA, noise levels at most residential locations meet the limits specified in the acceptable solutions. However, the predicted levels at night result in an exceedance by a small margin (between 0.8-3.4dB(A)). As such, assessment against the performance criteria is required.</p>	

P2

As per the NIA, the predicted noise emissions that exceed the limits specified in the Acceptable Solution are sufficiently low that they will not cause environmental harm.

The existing night time noise Leq of 50.1 dB(A) already exceeds the *Tasmanian Environmental Protection Policy (Noise) 2009* sleep disturbance criterium of 45 dB(A). However, the NIA determines that the predicted level combined with the existing level results in a negligible change. The proposal therefore meets the requirements of the Performance Criteria.

A3

External lighting must comply with all of the following:

- (a) *be turned off between 6:00 pm and 8:00 am, except for security lighting;*
- (b) *security lighting must be baffled to ensure they do not cause emission of light into adjoining private land.*

P3

External lighting must not adversely affect existing or future residential amenity, having regard to all of the following:

- (a) *level of illumination and duration of lighting;*
- (b) *distance to habitable rooms in an adjacent dwelling.*

COMMENTS

The existing car park at Lefroy Street is proposed to be modified to include 2 DDA parking bays. These bays require new light poles to provide additional illumination to ensure compliance.

The existing lighting in the remaining areas of the Lefroy Street car park is to remain as-is.

The proposed parking at Elizabeth Street will require all new lighting.

As such, assessment against the performance criteria is required.

P2

As per the submitted Electrical Services Plan (ESP), the proposal complies as below:

- (a) The ESP details that the lighting will be on throughout the night to ensure the safety of car park users. The levels of illumination are designed to comply with the Australian Standards as below:

Lighting Subcategory	Average Horizontal Illuminance	Point Horizontal Illuminance	Illuminance Horizontal Uniformity
PC3	3.5 Lux	0.7 Lux	8

- (b) The majority of the buildings surrounding the existing car park are either commercial facilities or do not have windows or doors facing the car park and are therefore not subject to spill lighting. The majority of the properties that have windows facing the car park are set back from the fence line where the light levels spilled from the car park lighting are expected to be well below the maximum allowable levels.

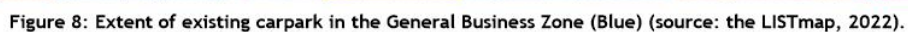
45A Burnett Street has windows facing the existing car park. The existing lights that are within 6m of the property's boundary line are to be replaced with a lower lumier of 22.46 lux with a horizontal illuminance of 15.7 lux to ensure proposed DDA spaces are compliant. According to the ESP, the light levels will not impact the amenity of 45A Burnett Street.

The proposal therefore satisfies the performance criteria.

<p>A4</p> <p><i>Commercial vehicle movements, (including loading and unloading and garbage removal) to or from a site must be limited to 20 vehicle movements per day and be within the hours of:</i></p> <p>(a) 7.00 am to 5.00 pm Mondays to Fridays inclusive;</p> <p>(b) 9.00 am to 12 noon Saturdays;</p> <p>(c) nil on Sundays and Public Holidays.</p>	<p>P4</p> <p><i>Commercial vehicle movements, (including loading and unloading and garbage removal) must not result in unreasonable adverse impact upon residential amenity having regard to all of the following:</i></p> <p>(a) the time and duration of commercial vehicle movements;</p> <p>(b) the number and frequency of commercial vehicle movements;</p> <p>(c) the size of commercial vehicles involved;</p> <p>(d) the ability of the site to accommodate commercial vehicle turning movements, including the amount of reversing (including associated warning noise);</p> <p>(e) noise reducing structures between vehicle movement areas and dwellings;</p> <p>(f) the level of traffic on the road;</p> <p>(g) the potential for conflicts with other traffic.</p>
<p>COMMENTS</p> <p>No changes are proposed to commercial vehicle movements on-site. Commercial vehicle movements are to remain within the acceptable hours of operation and therefore comply with A4.</p>	

4.3 GENERAL BUSINESS ZONE

There are 4 existing parking bays located within the General Business zone. These are for the tenants private use at 321-323A Elizabeth Street. No further works are proposed for these existing bays. As such, the provisions of the General Business Zone are not applicable.



5. CODES

5.1 POTENTIALLY CONTAMINATED LAND CODE

This code applies to development on potentially contaminated land. The Environmental Site Assessment (ESA) has identified that the site has had historically potentially contaminating activities and therefore requires assessment against the provisions of this code.

5.1.1 Use Standards

Objective: <i>To ensure that potentially contaminated land is suitable for the intended use</i>	
PLANNING SCHEME REQUIREMENTS	
<p>A1</p> <p><i>The Director, or a person approved by the Director for the purpose of this Code:</i></p> <p>(a) <i>certifies that the land is suitable for the intended use; or</i></p> <p>(b) <i>approves a plan to manage contamination and associated risk to human health or the environment that will ensure the land is suitable for the intended use.</i></p>	<p>P1</p> <p><i>Land is suitable for the intended use, having regard to:</i></p> <p>(a) <i>an environmental site assessment that demonstrates there is no evidence the land is contaminated; or</i></p> <p>(b) <i>an environmental site assessment that demonstrates that the level of contamination does not present a risk to human health or the environment; or</i></p> <p>(c) <i>a plan to manage contamination and associated risk to human health or the environment that includes:</i></p> <p>(i) <i>an environmental site assessment;</i></p> <p>(ii) <i>any specific remediation and protection measures required to be implemented before any use commences; and</i></p> <p>(iii) <i>a statement that the land is suitable for the intended use.</i></p>
<p>COMMENTS</p> <p>The director, or a person approved by the director, has not certified that the land is suitable for the intended use. Assessment against the performance criteria is therefore required.</p> <p>P1</p> <p>(c) The proposal meets the performance criteria as below:</p> <p>i) The ESA has determined that risks posed to human health is <i>low to very low</i> and that the risk to the environment is also <i>low</i>.</p> <p>ii) The ESA recommends the following specific remediation measures:</p> <ul style="list-style-type: none"> - Sealing the site surface in redevelopment works; and 	

- Implementing a Storm Water Management Plan (SWMP) for the redevelopment works to mitigate potential impacts during earthworks. This SWMP should focus on soil and water management, including the management of waste surplus soils.

iii) The ESA has determined that - provided the above measures are adhered to - the site is suitable for the intended use as a car park.

E2.6.2 Excavation

Objective: To ensure that works involving excavation of potentially contaminated land does not adversely impact on human health or the environment.

PLANNING SCHEME REQUIREMENTS

A1

No acceptable solution.

P1

Excavation does not adversely impact on health and the environment, having regard to:

- (a) *an environmental site assessment that demonstrates there is no evidence the land is contaminated; or*
- (b) *a plan to manage contamination and associated risk to human health and the environment that includes:*
 - (i) *an environmental site assessment;*
 - (ii) *any specific remediation and protection measures required to be implemented before excavation commences; and*
 - (iii) *a statement that the excavation does not adversely impact on human health or the environment.*

COMMENTS

P1

(b) The proposal meets the performance criteria as below:

i) The ESA has determined that the risks posed to human health is *low to very low* and that the risk to the environment is also *low*.

ii) The ESA recommends the following specific remediation measures:

- Sealing the site surface in redevelopment works; and
- Implementing a Storm Water Management Plan (SWMP) for the redevelopment works to mitigate potential impacts during earthworks. This SWMP should focus on soil and water management, including the management of waste surplus soils.

iii) Provided the requirements of the SWMP are implemented during works, the ESA has determined that the excavation will not adversely impact on human health or the environment.

5.2 ROAD AND RAILWAY ASSETS CODE

This code applies to all use and development that will intensify the use of an existing access. A Traffic Impact Assessment (TIA) has been provided as part of this application.

5.2.1 Use Standards

E5.5.1 Existing Road Accesses and Junctions

Objective: To ensure that the safety and efficiency of roads is not reduced by increased use of existing accesses and junctions.

PLANNING SCHEME REQUIREMENTS

A3

The annual average daily traffic (AADT) of vehicle movements, to and from a site, using an existing access or junction, in an area subject to a speed limit of 60km/h or less, must not increase by more than 20% or 40 vehicle movements per day, whichever is the greater.

P3

Any increase in vehicle traffic at an existing access or junction in an area subject to a speed limit of 60km/h or less, must be safe and not unreasonably impact on the efficiency of the road, having regard to:

- (a) the increase in traffic caused by the use;
- (b) the nature of the traffic generated by the use;
- (c) the nature and efficiency of the access or the junction;
- (d) the nature and category of the road;
- (e) the speed limit and traffic flow of the road;
- (f) any alternative access to a road;
- (g) the need for the use;
- (h) any traffic impact assessment; and
- (i) any written advice received from the road authority.

COMMENTS

As per the accompanying Traffic Impact Assessment (TIA), the proposed development will likely increase the total number of vehicle movements by more than 100%. Assessment against the performance criteria is therefore required.

P3

(a) According to the TIA, the traffic generated by the development will not result in safety or operational issues for the road network. Furthermore, given the proposed conversion of the existing right of way from Elizabeth Street to a pedestrian and restricted vehicle access, the development is expected to improve overall safety by limiting possible conflict points.

(b) The proposed development is expected to generate predominantly light vehicle traffic which the surrounding road network already caters for.

- (c) The car park access is expected to continue operating at Level of service 'A' up to 10-years post development. This is deemed an acceptable level of operation for the carpark access.
- (d) All intersections in the vicinity of the site are expected to continue operating at Level of service 'A' up to 10-years post development. This is deemed an acceptable level of operation.
- (e) Lefroy Street is subject to a speed limit of 50km/h. Elizabeth Street is subject to a speed limit of 40km/h in the vicinity of the site. The speeds and existing traffic flow are consistent with safe and efficient access to the proposed development.
- (f) No alternative accesses are proposed for the development.
- (g) The development will offer increased car parking availability within North Hobart which is a busy retail and entertainment precinct.
- (h) TIA has been submitted as part of this application.
- (i) The City of Hobart own and maintain the road network in the vicinity of the site. As it is a Council project, they have had involvement in the design process.

5.2.2 Development Standards

E5.6.2 Road Accesses and Junctions

Objective: To ensure that the safety and efficiency of roads is not reduced by the creation of new accesses and junctions.

PLANNING SCHEME REQUIREMENTS**A2**

No more than one access providing both entry and exit, or two accesses providing separate entry and exit, to roads in an area subject to a speed limit of 60km/h or less.

COMMENTS

As the development proposes no additional accesses to roads surrounding the site, it complies with Acceptable Solution A2.

E5.6.4 Sight distance at accesses, junctions and level crossings

Objective: To ensure that accesses, junctions and level crossings provide sufficient sight distance between vehicles and between vehicles and trains to enable safe movement of traffic.

PLANNING SCHEME REQUIREMENTS**A1**

Sight distances at:

(a) an access or junction must comply with the Safe Intersection Sight Distance shown in Table E5.1; and

(b) rail level crossings must comply with AS1742.7 Manual of uniform traffic control devices - Railway crossings, Standards Association of Australia.

COMMENTS

The safe site distance requirements are as below (excerpt from TIA):

LOCATION OF VEHICLE ON LEFROY STREET	SPEED LIMIT	SIGHT DISTANCE REQUIREMENT	AVAILABLE SIGHT DISTANCE
South-west	30km/h	49m	70m
North-east	50km/h	97m	157m

The proposal therefore complies with safe intersection site distances.

5.3 PARKING AND ACCESS CODE

This code applies to all use and development.

5.3.1 Use Standards

E6.6.1 Number of Car Parking Spaces

Objective: To ensure that:

a) there is enough car parking to meet the reasonable needs of all users of a use or development, taking into account the level of parking available on or outside of the land and the access afforded by other modes of transport.

b) a use or development does not detract from the amenity of users or the locality by:

i. preventing regular parking overspill;

ii. minimising the impact of car parking on heritage and local character.

PLANNING SCHEME REQUIREMENTS

A1

The number of on-site car parking spaces must be:

(a) no less than the number specified in Table E6.1; except if:

i. the site is subject to a parking plan for the area adopted by Council, in which case parking provision (spaces or cash-in-lieu) must be in accordance with that plan;

ii. the site is subject to clauses E6.6.5, E6.6.6, E6.6.7, E6.6.8, E6.6.9 or E6.6.10 of this planning scheme.

COMMENTS

Table E6.1 specifies there is no requirement for vehicle parking use in the inner residential zone. The proposal therefore complies with A1.

E6.6.2 Number of Accessible Car parking Spaces for People with a Disability

Objective: To ensure that a use or development provides sufficient accessible car parking for people with a disability

PLANNING SCHEME REQUIREMENTS
<p>A1</p> <p><i>Car parking spaces provided for people with a disability must:</i></p> <p>(a) <i>satisfy the relevant provisions of the Building Code of Australia;</i></p> <p>(b) <i>be incorporated into the overall car park design;</i></p> <p>(c) <i>be located as close as practicable to the building entrance</i></p>
COMMENTS
<p>(a) The proposal includes 2 accessible parking spaces that satisfy the provisions of the Building Code.</p> <p>(b) These have been incorporated into the overall car parking design.</p> <p>(c) These spaces are located near the entrance off Lefroy Street which is most practicable.</p> <p>The proposal complies with the Acceptable solution.</p>

E6.6.3 Number of Motorcycle Parking Spaces

Objective: To ensure enough motorcycle parking is provided to meet the needs of likely users of a use or development	
PLANNING SCHEME REQUIREMENTS	
<p>A1</p> <p><i>The number of on-site motorcycle parking spaces provided must be at a rate of 1 space to each 20 car parking spaces after the first 19 car parking spaces except if bulky goods sales, (rounded to the nearest whole number). Where an existing use or development is extended or intensified, the additional number of motorcycle parking spaces provided must be calculated on the amount of extension or intensification, provided the existing number of motorcycle parking spaces is not reduced.</i></p>	<p>P1</p> <p><i>The number of on-site motorcycle parking spaces must be sufficient to meet the needs of likely users having regard to all of the following, as appropriate:</i></p> <p>(a) <i>motorcycle parking demand;</i></p> <p>(b) <i>the availability of on-street and public motorcycle parking in the locality;</i></p> <p>(c) <i>the availability and likely use of other modes of transport;</i></p> <p>(d) <i>the availability and suitability of alternative arrangements for motorcycle parking provision</i></p>
COMMENTS	
<p>No motorcycle parking is provided within the development. Assessment against the performance criteria is therefore required.</p>	
<p>P1</p> <p>(a) The demand for motorcycle parking is expected to be low due to the availability of free motorcycle parking directly northwest of the development on Lefroy Street.</p> <p>(b) According to the TIA, these free motorcycle parking spaces are generally not at capacity.</p> <p>(c) Bus stops are located within 50m of the site and typically arrive at stops in 10-minute intervals during weekdays. Furthermore, active transport links such as pedestrian footpaths and on-road bicycle lanes exist along surrounding streets.</p>	

(d) Should alternative motorcycle parking be required, motorcycles can use the public parking within the proposed development, or other on-street or off-street car parking in the vicinity.

E6.6.4 Number of Bicycle Parking Spaces

Objective: To ensure enough bicycle parking is provided to meet the needs of likely users and by so doing to encourage cycling as a healthy and environmentally friendly mode of transport for commuter, shopping and recreational trips

PLANNING SCHEME REQUIREMENTS

A1

The number of on-site bicycle parking spaces provided must be no less than the number specified in Table E6.2.

COMMENTS

As bicycle parking is not required for vehicle parking use, this provision is not applicable. However, 6 bicycle parking spaces will be provided directly south of the existing permit holders' only car park, subject to Council approval.

E6.6.6 Number of Car Parking Spaces - General and Local Business Zone

Objective: To ensure that the requirements for car parking facilities do not detract from the character or user amenity and convenience of those street frontages and other spaces in the Local Business or General Business Zones.

PLANNING SCHEME REQUIREMENTS

A1

Additional on-site parking is only required:

(a) for the development of a vacant site; or

(b) for alterations and extensions related to an increase in floor area of more than 50m² or 20% of the floor area existing at the date of commencement of this Planning Scheme, whichever is the greater; or

(c) as part of any proposal for the redevelopment of a site. If on-site parking is provided the number must be no greater than specified in Table E6.1.

COMMENTS

As the portion of the car park within the General Business zone does not require additional onsite parking, and Table E6.1 specifies no requirement for vehicle parking, it complies with Acceptable Solutions.

5.3.2 Development Standards

E6.7.1 Number of Vehicular Accesses**Objective:** To ensure that:*(a) safe and efficient access is provided to all road network users, including, but not limited to: drivers, passengers, pedestrians, and cyclists, by minimising:**(i) the number of vehicle access points; and**(ii) loss of on-street car parking spaces;**(b) vehicle access points do not unreasonably detract from the amenity of adjoining land uses;**(c) vehicle access points do not have a dominating impact on local streetscape and character***PLANNING SCHEME REQUIREMENTS****A1***The number of vehicle access points provided for each road frontage must be no more than 1 or the existing number of vehicle access points, whichever is the greater.***COMMENTS**

The proposal provides no more than the existing number of vehicle access points and therefore complies with A1.

E6.7.2 Design of Vehicular Accesses**Objective:** To ensure safe and efficient access for all users, including drivers, passengers, pedestrians and cyclists by locating, designing and constructing vehicle access points safely relative to the road network.**PLANNING SCHEME REQUIREMENTS****A1***Design of vehicle access points must comply with all of the following:**(a) in the case of non-commercial vehicle access; the location, sight distance, width and gradient of an access must be designed and constructed to comply with section 3 - "Access Facilities to Off-street Parking Areas and Queuing Areas" of AS/NZS 2890.1:2004 Parking Facilities Part 1: Off-street car parking;**(b) in the case of commercial vehicle access; the location, sight distance, geometry and gradient of an access must be designed and constructed to comply with all access driveway provisions in section 3 "Access Driveways and Circulation Roadways" of AS2890.2 - 2002 Parking facilities Part 2: Off-street commercial vehicle facilities***COMMENTS**

The vehicle access point to Lefroy Street has a width of 6.7m which complies with the above requirements.

Aside from the placement of bollards at the end of the Elizabeth Street right of way, no further changes are proposed to the Elizabeth Street access.

Both accesses therefore comply with the acceptable solutions.

E6.7.3 Vehicular Passing Areas along an access

Objective: To ensure that:

- (a) the design and location of access and parking areas creates a safe environment for users by minimising the potential for conflicts involving vehicles, pedestrians and cyclists;
- (b) use or development does not adversely impact on the safety or efficiency of the road network as a result of delayed turning movements into a site.

PLANNING SCHEME REQUIREMENTS**A1**

Vehicular passing areas must:

- (a) be provided if any of the following applies to an access:
 - (i) it serves more than 5 car parking spaces;
 - (ii) is more than 30 m long;
 - (iii) it meets a road serving more than 6000 vehicles per day;
- (b) be 6 m long, 5.5 m wide, and taper to the width of the driveway;
- (c) have the first passing area constructed at the kerb;
- (d) be at intervals of no more than 30 m along the access.

P1

Vehicular passing areas must be provided in sufficient number, dimension and siting so that the access is safe, efficient and convenient, having regard to all of the following:

- (a) avoidance of conflicts between users including vehicles, cyclists and pedestrians;
- (b) avoidance of unreasonable interference with the flow of traffic on adjoining roads;
- (c) suitability for the type and volume of traffic likely to be generated by the use or development;
- (d) ease of accessibility and recognition for users.

COMMENTS

No vehicular passing areas have been provided, therefore assessment against the performance criteria is required.

P1

- a) The Lefroy Street access is considered sufficiently wide to enable safe and efficient movement of vehicles should they require passing. Given the proposed conversion of the existing right of way from Elizabeth Street, the development is expected to improve overall vehicle and pedestrian safety by limiting possible conflict points.
- b) The proposed development is expected to generate light vehicle traffic which is already catered for on the surrounding road network. The proposal will therefore not interfere with the flow of traffic on adjoining roads.
- c) According to the TIA, the accesses are suitable for the type and volume of traffic generated by the proposal.
- d) The proposal will not change the legibility and accessibility of the Lefroy Street access.

E6.7.4 Onsite Turning

Objective: To ensure safe, efficient and convenient access for all users, including drivers, passengers, pedestrians and cyclists, by generally requiring vehicles to enter and exit in a forward direction.

PLANNING SCHEME REQUIREMENTS	
<p>A1</p> <p><i>On-site turning must be provided to enable vehicles to exit a site in a forward direction, except where the access complies with any of the following:</i></p> <p>(a) <i>it serves no more than two dwelling units;</i></p> <p>(b) <i>it meets a road carrying less than 6000 vehicles per day.</i></p>	<p>P1</p> <p><i>On-site turning may not be required if access is safe, efficient and convenient, having regard to all of the following:</i></p> <p>(a) <i>avoidance of conflicts between users including vehicles, cyclists, dwelling occupants and pedestrians;</i></p> <p>(b) <i>avoidance of unreasonable interference with the flow of traffic on adjoining roads;</i></p> <p>(c) <i>suitability for the type and volume of traffic likely to be generated by the use or development;</i></p> <p>(d) <i>ease of accessibility and recognition for users;</i></p> <p>(e) <i>suitability of the location of the access point and the traffic volumes on the road.</i></p>
<p>COMMENTS</p> <p>As the site access meets Lefroy Street, which carries less than 6,000 vehicles per day, this provision is not applicable. However, the development allows light vehicles to enter and exit the site in a forward direction.</p>	

E6.7.5 Layout of Parking Areas

<p>Objective: <i>To ensure that parking areas for cars (including assessable parking spaces), motorcycles and bicycles are located, designed and constructed to enable safe, easy and efficient use.</i></p>
PLANNING SCHEME REQUIREMENTS
<p>A1</p> <p><i>The layout of car parking spaces, access aisles, circulation roadways and ramps must be designed and constructed to comply with section 2 "Design of Parking Modules, Circulation Roadways and Ramps" of AS/NZS 2890.1:2004 Parking Facilities Part 1: Off-street car parking and must have sufficient headroom to comply with clause 5.3 "Headroom" of the same Standard.</i></p> <p>P1</p> <p><i>The layout of car parking spaces, access aisles, circulation roadways and ramps must be safe and must ensure ease of access, egress and maneuvering on-site.</i></p>
<p>COMMENTS</p> <p>As per the TIA, the proposed car parking layout meets all relevant requirements of the Australian Standards. However, as existing car parking spaces within the permit holders only section of the Lefroy Street car park do not meet the requirements of the Australian Standards, assessment against the performance criteria is therefore required.</p> <p>P1</p> <p>Given the current safe use of these existing spaces, the TIA has determined that the layout and design of these spaces still allow for ease of access and safety for users.</p>

E6.7.6 Surface Treatment of Parking Areas

Objective: To ensure that parking spaces and vehicle circulation roadways do not detract from the amenity of users, adjoining occupiers or the environment by preventing dust, mud and sediment transport.

PLANNING SCHEME REQUIREMENTS**A1**

Parking spaces and vehicle circulation roadways must be in accordance with all of the following;

(a) *paved or treated with a durable all-weather pavement where within 75m of a property boundary or a sealed roadway;*

(b) *drained to an approved stormwater system, unless the road from which access is provided to the property is unsealed.*

COMMENTS

(a) The proposed development will feature an all-weather bituminous surface.

(b) The development will be drained to the Rivulet following detention and treatment.

The proposal therefore complies with the acceptable solutions.

E6.7.7 Lighting of Parking Areas

Objective: To ensure parking and vehicle circulation roadways and pedestrian paths used outside daylight hours are provided with lighting to a standard which:

(a) *enables easy and efficient use;*

(b) *promotes the safety of users;*

(c) *minimises opportunities for crime or anti-social behaviour; and*

(d) *prevents unreasonable light overspill impacts.*

PLANNING SCHEME REQUIREMENTS**A1**

Parking and vehicle circulation roadways and pedestrian paths serving 5 or more car parking spaces, used outside daylight hours, must be provided with lighting in accordance with clause 3.1 "Basis of Design" and clause 3.6 "Car Parks" in AS/NZS 1158.3.1:2005 Lighting for roads and public spaces Part 3.1: Pedestrian area (Category P) lighting.

COMMENTS

As per the accompanying Electrical Design report, the proposal will provide lighting in accordance with the above requirements.

E6.7.8 Landscaping of Parking Areas

Objective: To ensure that large parking and circulation areas are landscaped to:

(a) *relieve the visual impact on the streetscape of large expanses of hard surfaces;*

(b) *screen the boundary of car parking areas to soften the amenity impact on neighbouring properties;*

(c) *contribute to the creation of vibrant and liveable places;*

(d) <i>reduce opportunities for crime or anti-social behaviour by maintaining clear sightlines</i>
PLANNING SCHEME REQUIREMENTS
A1 <i>Landscaping of parking and circulation areas must be provided where more than 5 car parking spaces are proposed. This landscaping must be no less than 5 percent of the area of the car park, except in the Central Business Zone where no landscaping is required.</i>
COMMENTS The proposed development provides a minimum of 5% of the area as landscaping. The proposal therefore complies with the acceptable solutions.

E6.7.12 Siting of Car Parking

<i>Objective: To ensure that the streetscape, amenity and character of urban areas is not adversely affected by siting of vehicle parking and access facilities.</i>
PLANNING SCHEME REQUIREMENTS
A1 <i>Parking spaces and vehicle turning areas, including garages or covered parking areas in the Inner Residential Zone, Urban Mixed Use Zone, Village Zone, Local Business Zone and General Business Zone must be located behind the building line of buildings located or proposed on a site except if a parking area is already provided in front of the building line of a shopping centre.</i>
COMMENTS The car parking spaces are located behind the building line, and therefore comply with the acceptable solutions.

E6.7.14 Access to a road

<i>Objective: To ensure that access to the road network is provided appropriately.</i>
PLANNING SCHEME REQUIREMENTS
A1 <i>Access to a road must be in accordance with the requirements of the road authority.</i>
COMMENTS The accesses are existing and are therefore in accordance with the requirements of the road authority.

5.4 STORMWATER MANAGEMENT CODE

This code applies to development requiring the management of stormwater.

5.4.1 Use Standards

There are no use standards.

5.4.2 Development Standards

E7.7.1 Stormwater Drainage and Disposal

<i>Objective: To ensure that stormwater quality and quantity is managed appropriately.</i>	
PLANNING SCHEME REQUIREMENTS	
A1 <i>Stormwater from new impervious surfaces must be disposed of by gravity to public stormwater infrastructure.</i>	
COMMENTS <p>The proposed bridge will create new impervious surfaces. Stormwater runoff from each title will be disposed of via gravity to the two existing discharge points in Providence Rivulet, thereby meeting acceptable solutions.</p>	
A2 <i>A stormwater system for a new development must incorporate water sensitive urban design principles ^{R1} for the treatment and disposal of stormwater if any of the following apply:</i> <ul style="list-style-type: none"> (a) <i>the size of new impervious area is more than 600 m²;</i> (b) <i>new car parking is provided for more than 6 cars;</i> (c) <i>a subdivision is for more than 5 lots.</i> 	P2 <i>A stormwater system for a new development must incorporate a stormwater drainage system of a size and design sufficient to achieve the stormwater quality and quantity targets in accordance with the State Stormwater Strategy 2010, as detailed in Table E7.1 unless it is not feasible to do so.</i>
COMMENTS <p>As the proposal is for more than 6 car parking spaces, assessment against the performance criteria is required.</p> <p>P2 As per the accompanying Stormwater Management Plan, the proposed stormwater treatment infrastructure will ensure best practice Water Sensitive Urban Design is incorporated and that the targets specified in Table E7.1 are achieved.</p>	
A3 <i>A minor stormwater drainage system must be designed to comply with all of the following:</i> <ul style="list-style-type: none"> (a) <i>be able to accommodate a storm with an ARI of 20 years in the case of non-industrial zoned land and an ARI of 50 years in the case of industrial zoned land, when the land serviced by the system is fully developed;</i> (b) <i>stormwater runoff will be no greater than pre-existing runoff or any increase can be accommodated within existing or upgraded public stormwater infrastructure.</i> 	

COMMENTS

For the existing Lefroy Street car park, no alterations to the existing surface are proposed and no stormwater detention is necessary.

The proposed car park complies with the acceptable solutions as below:

a) 321-323A Elizabeth Street will be provided with a suitably sized stormwater infrastructure to accommodate the 20-year ARI storm (5% AEP) and direct site runoff to a 10 m² bioretention rain garden on-site.

b) By providing detention storage in the rain garden above the pit spill level via a small, contracted weir formed around the overflow pit, stormwater runoff can be accommodated within existing stormwater infrastructure.

A4

A major stormwater drainage system must be designed to accommodate a storm with an ARI of 100 years

COMMENTS

The major system has been designed to direct flows to the raingarden. In an event that exceeds the capacity of the raingarden, overflow will spill directly over the retaining wall into the Providence Rivulet. This will occur by means of the kerb on the boundary being elevated above the top of the retaining wall where the raingarden is located. The major system for the existing car park will have any overflow (flow above 5% AEP from the grated deflector pit) directed across the bridge and down towards the raingarden where it will overflow into the rivulet.

The proposal therefore complies with the acceptable solutions.

5.5 WATERWAY AND COASTAL PROTECTION CODE

The site is subject to the Waterway and Coastal Protection Area overlay. This code is applicable to land within the relevant distance from a watercourse, wetland, lake or the coast shown in Table E11.1. As the proposed works are to include a bridge over the Rivulet, the below provisions are applicable.

5.5.1 Use Standards

There are no use standards in this code.

5.5.2 Development Standards**E11.7.1 Buildings and Works**

Objective: *To ensure that buildings and works in proximity to a waterway, the coast, identified climate change refugia and potable water supply areas will not have an unnecessary or unacceptable impact on natural values.*

PLANNING SCHEME REQUIREMENTS**A1**

Building and works within a Waterway and Coastal Protection Area must be within a building area on a plan of subdivision approved under this planning scheme.

P1

Building and works within a Waterway and Coastal Protection Area must satisfy all of the following:

	<p>(a) avoid or mitigate impact on natural values;</p> <p>(b) mitigate and manage adverse erosion, sedimentation and runoff impacts on natural values;</p> <p>(c) avoid or mitigate impacts on riparian or littoral vegetation;</p> <p>(d) maintain natural streambank and streambed condition, (where it exists);</p> <p>(e) maintain in-stream natural habitat, such as fallen logs, bank overhangs, rocks and trailing vegetation;</p> <p>(f) avoid significantly impeding natural flow and drainage;</p> <p>(g) maintain fish passage (where applicable);</p> <p>(h) avoid landfilling of wetlands;</p> <p>(i) works are undertaken generally in accordance with 'Wetlands and Waterways Works Manual' (DPIWE, 2003) and "Tasmanian Coastal Works Manual" (DPIPWE, Page and Thorp, 2010), and the unnecessary use of machinery within watercourses or wetlands is avoided.</p>
<p>COMMENTS</p> <p>As the proposed development is not within a building area on a sealed plan, the proposal requires assessment against the performance criteria.</p> <p>P1</p> <p>As per the accompanying Environmental Site Assessment (ESA), the proposal meets the performance criteria as below:</p> <p>a) The site is located within a heavily modified urban land area. There are no threatened flora or fauna within the site. The ESA details that the proposal is unlikely to have an unacceptable impact on identified natural values.</p> <p>b) Provided the recommendations outlined within the Soil and Water Management Plan (SWMP) are adhered to during excavation works, natural values will not be impacted by the proposed development.</p> <p>c) Due to the highly developed nature of the rivulet, there is little riparian vegetation of value located on the site. Adjacent to the rivulet is fill material comprising of concrete, broken bricks, sand and gravel. The large boulders and retaining wall along this portion of the rivulet have permitted little more than grass and some identified weeds (blackberry and gorse) to grow. As per the amended SWMP, prior to the commencement of site disturbance works, any riparian vegetation across the site will be considered against the Environmental Best Practice Guideline 7, DPIPWE Works Manual.</p> <p>d) Where it exists, streambank and streambed conditions will be maintained. The proposal maintains the natural flow regime as far as practicable by avoiding or minimising changes to channel form and flow volume.</p>	

- e) The stream habitat is largely modified, and as such, the impacts on natural habitat are determined to be low.
- f) The proposal maintains the natural flow regime as far as practicable by avoiding or minimising changes to channel form and flow volume. Drainage and flow is otherwise discussed in the SWMP.
- g) It is unlikely that fish passage will be impacted by the proposed development.
- h) No landfilling of wetlands is proposed.
- i) Works are to be undertaken in accordance with the manual's requirements.

The proposal therefore complies with the performance criteria.

<p>A2</p> <p><i>Building and works within a Future Coastal Refugia Area must be within a building area on a plan of subdivision approved under this planning scheme.</i></p>	<p>P2</p> <p><i>Building and works within a Future Coastal Refugia Area must satisfy all of the following:</i></p> <ul style="list-style-type: none"> (a) allow for the landward colonisation of wetlands and other coastal habitats from adjacent areas; (b) not be landfill; (c) avoid creation of barriers or drainage networks that would prevent future tidal inundation; (d) ensure coastal processes of deposition or erosion can continue to occur; (e) avoid or mitigate impact on natural values; (f) avoid or mitigate impact on littoral vegetation; (g) works are undertaken generally in accordance with 'Wetlands and Waterways Works Manual' (DPIWE, 2003) and "Tasmanian Coastal Works Manual" (DPIPWE, Page and Thorp, 2010).
<p>COMMENTS</p> <p>As the proposed development is not located within a Future Coastal Refugia Area, this provision is not applicable.</p>	

<p>A3</p> <p><i>Buildings and works within a Potable Water Supply Area must be within a building area on a plan of subdivision approved under this planning scheme.</i></p>	<p>P3</p> <p><i>Buildings and works within a Potable Water Supply Area must satisfy all of the following:</i></p> <ul style="list-style-type: none"> (a) ensure no detriment to potable water supplies; (b) be in accordance with the requirements of the water and sewer authority.
<p>COMMENTS</p>	

As the proposed development is not located within a Potable Water Supply Area, this provision is not applicable.

A4

Development must involve no new stormwater point discharge into a watercourse, wetland or lake

COMMENTS

As no new discharge points are proposed into the rivulet, the proposal satisfies acceptable solutions.

5.6 INNUNDATION PRONE AREAS CODE

The site does not come up in any flood hazard mapping or planning scheme maps. Despite this, the retaining wall and bridge must comply with the provisions of the Inundation Prone Area code as they are potentially subject to risk of riverine flooding of 1% AEP or more.

5.6.1 Use Standards

There are no applicable use standards for this development.

5.6.2 Development Standards**E15.7.5 Riverine, Coastal Investigation Area, Low, Medium, High Inundation Hazard Areas****Objective:**

(a) To ensure that landfill and mitigation works do not unreasonably increase the risk from riverine, watercourse and inland flooding, and risk from coastal inundation.

(b) To ensure that the risk to waste water management from riverine, watercourse and inland flooding, and risk from coastal inundation is appropriately managed.

PLANNING SCHEME REQUIREMENTS**A1**

For landfill, or solid walls greater than 5 m in length and 0.5 m in height, there is no acceptable solution.

P1

Landfill, or solid walls greater than 5 m in length and 0.5 m in height, must satisfy all of the following:

(a) no adverse affect on flood flow over other property through displacement of overland flows;

(b) the rate of stormwater discharge from the property must not increase;

(c) stormwater quality must not be reduced from pre-development levels.

COMMENTS

As a new retaining wall is proposed that exceeds the above dimensions, assessment against the performance criteria is required.

P1

The proposal meets the performance criteria as below:

- a) As demonstrated by the Inundation Hazard Assessment (IHA), the retaining wall will have no adverse affect on flood flow of other properties.
- b) The same flood flow will move through and discharge from the site. The proposal will marginally increase the flow in the main channel but lessen the overbank flow into the adjacent property.
- c) Stormwater quality will be maintained through:
 - the implementation of water sensitive urban design;
 - the construction of the wall; and
 - the sealing of carpark to prevent major erosion during flood events.

A2

No acceptable solution.

P2

Mitigation measures, if required, must satisfy all of the following:

- (a) be sufficient to ensure habitable rooms will be protected from flooding and will be able to adapt as sea levels rise;*
- (b) not have a significant effect on flood flow.*

COMMENTS**P1**

- a) Not relevant for this proposal.
- b) The IHA demonstrates that there is no significant effect on flood flow off the site. Flows on the site are not hazardous with the exception of the rivulet channel which is recommended to be fully fenced.

The proposal therefore complies with the performance criteria.

A3

A land application area for onsite wastewater management must comply with all of the following:

- (a) horizontal separation distance from high water mark or from the top of bank of a watercourse or lake must be no less than 100 m;*
- (b) vertical separation distance from the water table must be no less than 1.5 m.*

COMMENTS

This provision is not applicable.

5.7 SPECIFIC AREA PLANS**ROYAL HOBART HELIPAD AIRSPACE SPECIFIC AREA PLAN**

The subject site is within the Royal Hobart Hospital Helipad Airspace Specific Area Plan and partially within the North Hobart Specific Area Plan. This SAP imposes restrictions on heights for structures and is therefore not relevant for this proposal.

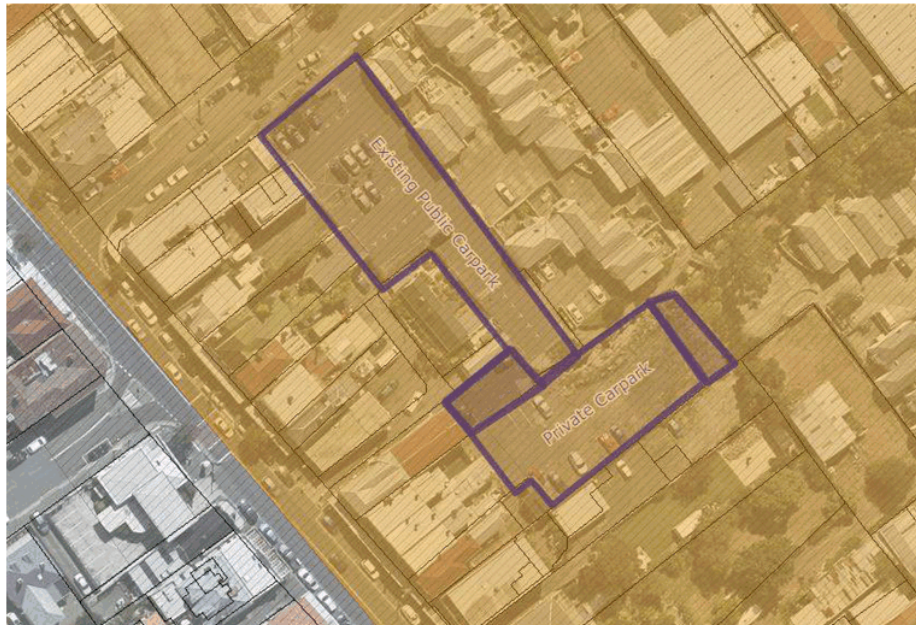


Figure 9: Site demonstrating extent of Royal Hobart Helipad Airspace Specific Area Plan (source: the LISTmap, 2022)

NORTH HOBART SPECIFIC AREA PLAN

The subject site is located within the North Hobart Specific Area plan as seen in the below figure. However, as the proposed development is occurring at the rear of the site fronting Elizabeth Street, the provisions regarding streetspace (F2.3.1), building form (F2.3.2), awnings (F2.3.3) and materials (F2.3.4) are not relevant.



Figure 10: Site demonstrating extent of North Hobart Specific Area Plan (source: the LISTmap, 2022).

6. SUMMARY

This application is for a new carpark at 321 - 323A and 325 Elizabeth Street and the upgrade of existing parking facilities at 16A Lefroy Street. As part of the proposed development, an existing shed and fence at 325 Elizabeth Street is proposed to be demolished. The new public car park will be connected to the existing car park at 16A Lefroy Street via a double lane bridge across Providence Rivulet. The proposal also includes an engineered retaining wall along the south-eastern bank of the Rivulet.

The proposal is a discretionary use under the Inner Residential Zone and meets the relevant zone standards. Whilst a portion of the site is located within the General Business Zone, no works are proposed within this zone and the provisions therefore do not apply.

The site is subject to various codes including: the Parking and Sustainable Transport Code, the Road and Railway Assets Code, the Stormwater Management Code, the Waterway and Coastal Protection code, the Inundation Prone Area Code, and the Potentially Contaminated Land Code. The application includes a number of reports from suitably qualified practitioners to assess against the relevant provisions of the planning scheme.

The design and siting of the car parking spaces ensures that these site constraints are appropriately considered. Ultimately, the proposal would promote the full realisation of the site's potential as a car park within the Inner Residential Zone.

PROPOSED REPLACEMENT BOUNDARY FENCE BETWEEN 321-323 AND 317 ELIZABETH STREET

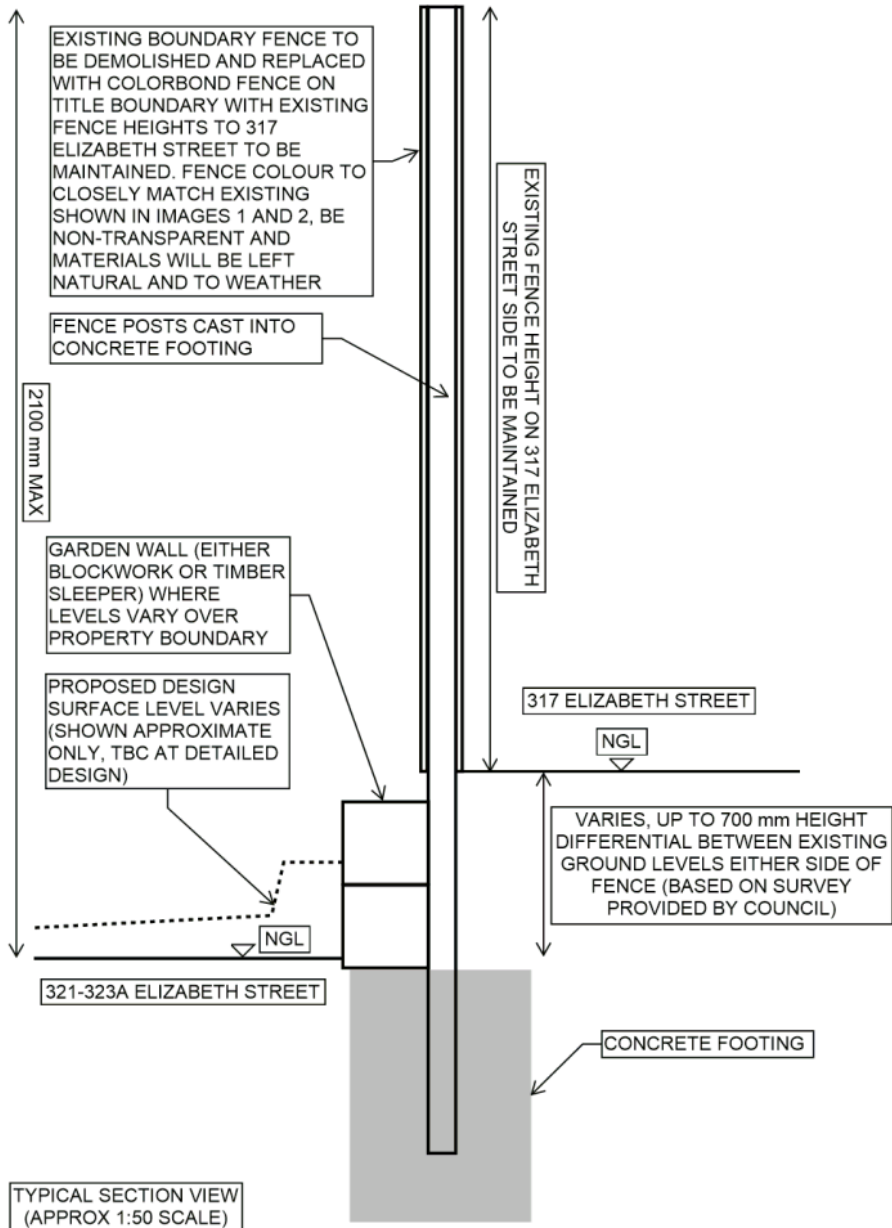


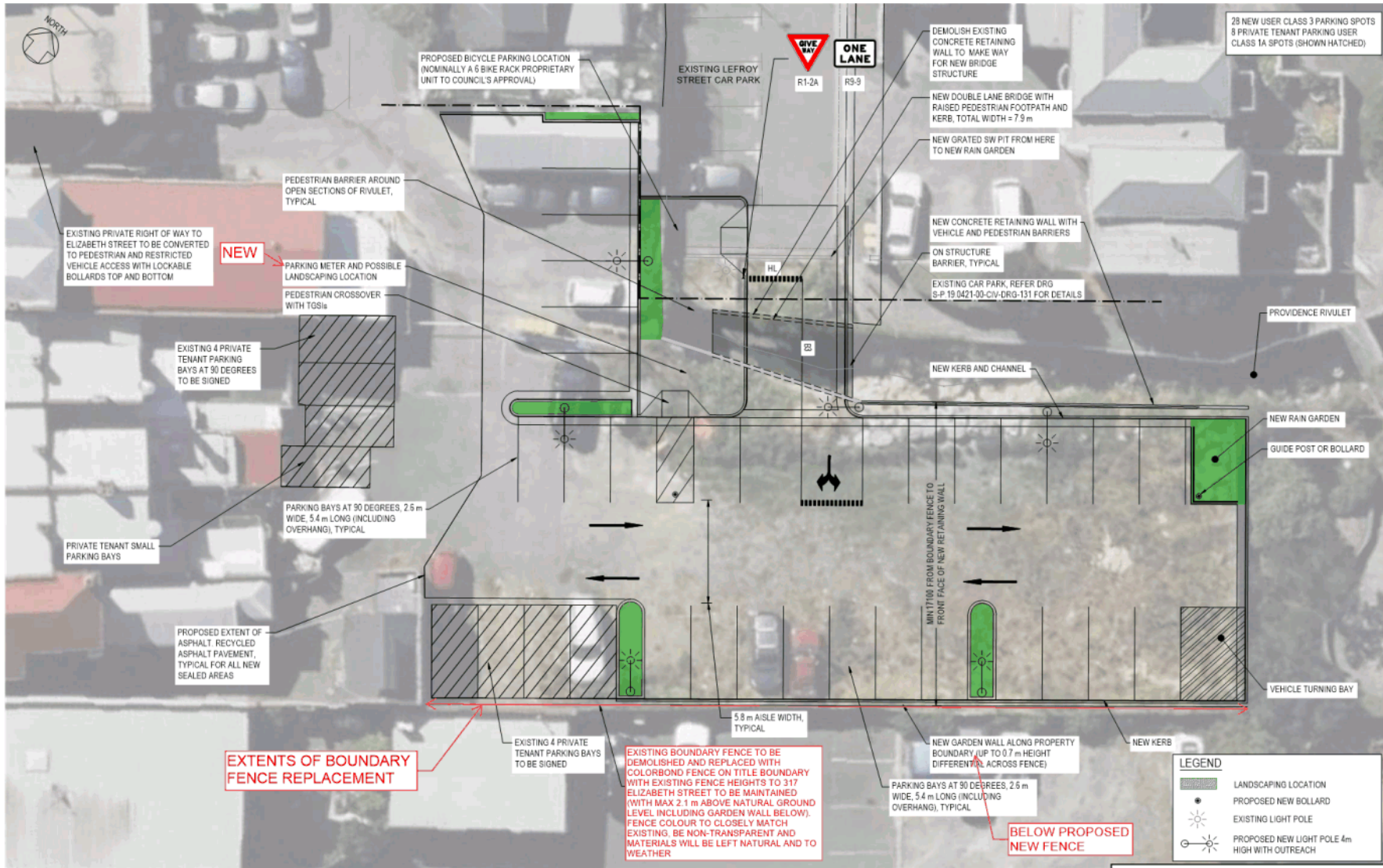
IMAGE 1: EXTENT OF EXISTING BOUNDARY FENCE TO BE REPLACED ON CORRECT ALIGNMENT



IMAGE 2: TYPICAL CONSTRUCTION DETAIL OF EXISTING BOUNDARY FENCE

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RFI PLN Fi3
27/06/2022
Concept Design Stage

PROPOSED EXTENTS OF REPLACEMENT BOUNDARY FENCE BETWEEN 321-323 AND 317 ELIZABETH STREET



SCALE (PLOTTER FULL SIZE) 1:200 (A3)
SHEET SIZE A3
SCALE IN METRES - 1:200

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CLIENT CITY OF HOBART
PROJECT LEIFROY STREET CAR PARK
UPGRADES AND EXTENSION
STATUS PRELIMINARY

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27/06/2022
Concept Design Stage

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321-323A Elizabeth Street

Inundation Assessment

Prepared for
City of Hobart

Client representative
Glenn Doyle

Date
30 June 2022

Rev01

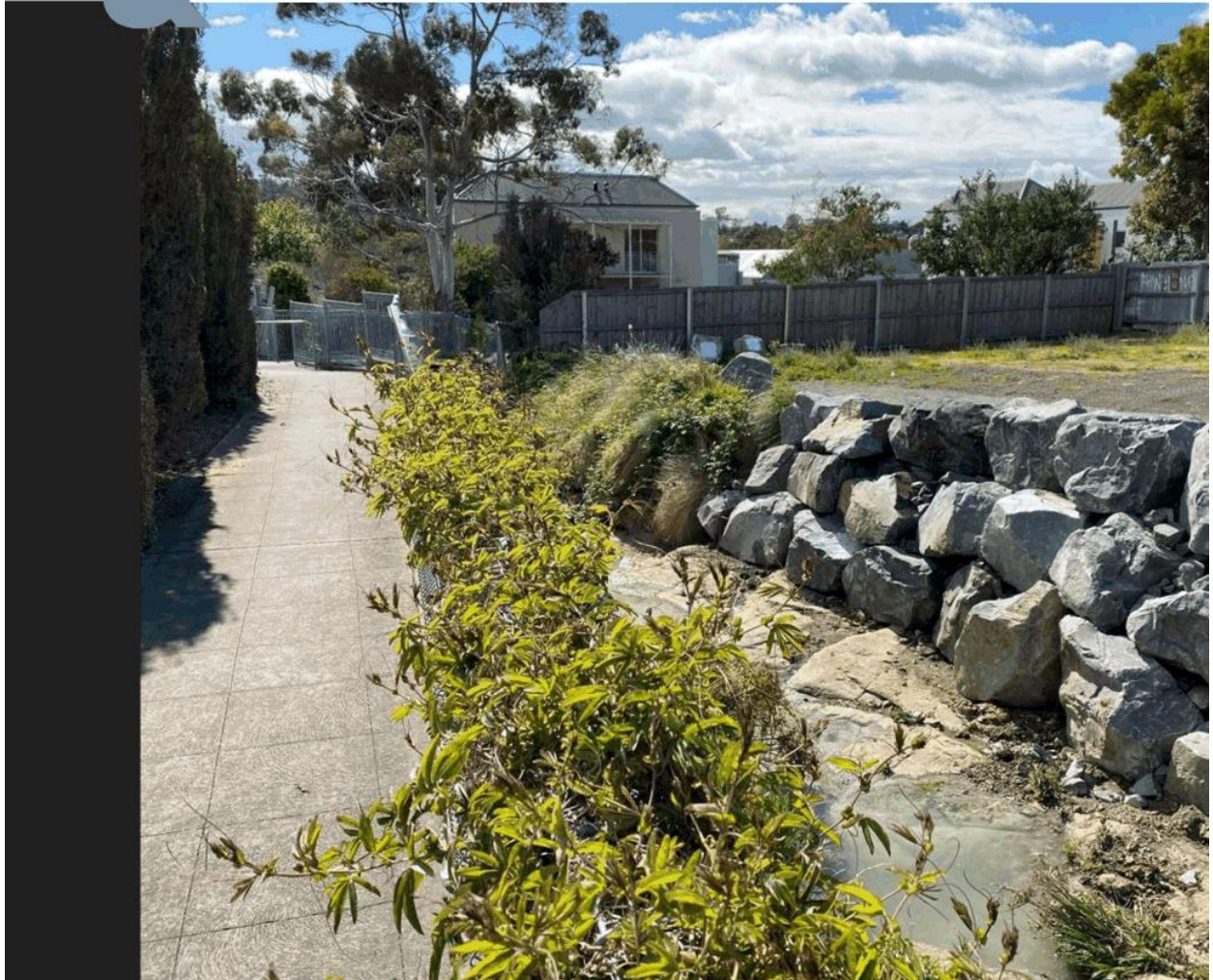


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01	Updated To Address RFI's	HP	RMC	RMC	30/06/2022

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1. Introduction

Hobart City Council (HCC) intend to formalise and seal a car park at 321-323A Elizabeth Street, North Hobart. As part of the works, a new bridge and engineered retaining wall are proposed to be constructed along the south-eastern bank of Providence Rivulet (see Figure 1). The works will serve to connect the newly sealed carpark to the existing Lefroy Street carpark which has better street access for vehicles.

The retaining wall, bridge and carpark design must comply with both the Stormwater (Code E 7.0) and Riverine Inundation (Code E 15.0) codes of the Hobart City Council Interim Planning Scheme 2015 (Planning Scheme). This report is presented to address the Riverine Inundation Code requirements.

1.1 Site description

The subject site (see Figure 1) has the following features relevant to flood behavior:

- The existing site grades generally west to east
- A stormwater network discharges into the rivulet via 900mm and 1050mm pipes
- The rivulet has a rock armored bank on the south-eastern side and an engineered concrete retaining wall on the north-west bank; and
- The rivulet base consists of bedrock along the length of the site.

The following features impact flood behavior through and near to the site:

- The existing stormwater pipe and pit network
- Numerous solid masonry walls obstruct flows
- Numerous timber and grated fences
- Surrounding buildings will obstruct flows to some degree depending on the ingress of water to each building; and
- As the use is a carpark it is likely that vehicles will obstruct overland flows (outside of the channel) during flood events.

The intent of this assessment is to determine the major overland flow paths through and around the site and demonstrate how the proposed development will meet the Riverine Inundation Code requirements.

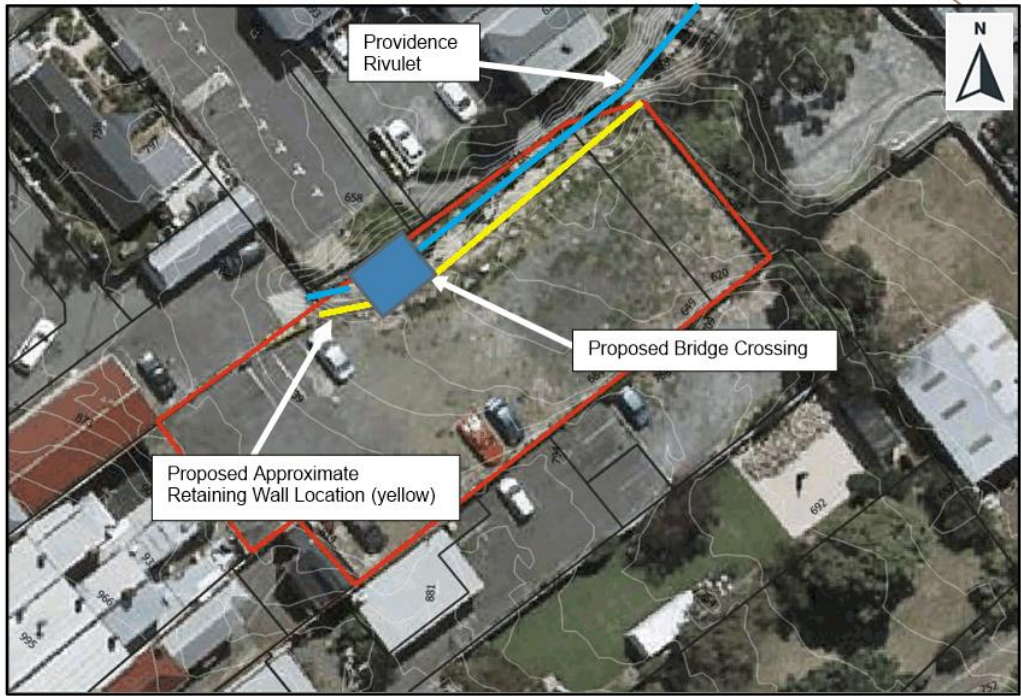


Figure 1: Subject site



2. Inundation assessment

2.1 Assessment criteria

The Hobart City Council require an inundation assessment for both a 5% Annual Exceedance Probability (AEP) and a 1% AEP event with 30% rainfall increase climate change consideration. The assessment is required to demonstrate:

- Any flood control measures are suitably engineered to withstand flood forces and prevent ingress; and
- Adjacent properties are not adversely affected by changes in flood behavior as a result of the proposed development.

To demonstrate no adverse impact on adjacent properties, four flood model scenarios were developed. These are:

- Existing Case
 - 5% AEP event
 - 1% AEP with 30% Rainfall Intensity Increase
- Developed Case:
 - 5% AEP event; and
 - 1% AEP with 30% Rainfall Intensity Increase.

2.2 Catchments

The upstream topographic and stormwater network catchment discharging near to the site is approximately 159-hectares, presented in Figure 2 below. The figure also displays the planning scheme zoning, it shows that the catchment is a majority General and Inner Residential. The top of the catchment is steep bushland which is zoned as Environmental Management. Aerial imagery demonstrates that the residential zones are already heavily developed with limited greenfield development opportunity available.

The top of the catchment grades very steeply, exceeding 40% grade in some locations. Two watercourses form the top of the catchment, the watercourses are intercepted by stormwater mains and meet just north of the Mellifont and Newdegate Street intersection. The pipe network extends at an average 5% grade down to and across Elizabeth Street (crossing as an 1050mm RCP). Another 900mm RCP pipe main is directed towards Elizabeth Street to meet the 1050mm pipe downstream. The major watercourse is Providence Gully Rivulet.

The steep nature of the upper catchment, moderate watercourse grade and the heavily developed residential zones creates a situation where a storm event can produce rapid runoff, with much of the catchment contributing to the peak flows experienced at the site of interest.



Figure 2: Catchment (Hectares), with 5m Contours, Purple (Environmental Management), Blue (General Residential), Orange (Inner Residential)

2.3 Hydrologic data and assumptions

The software used to undertake the overland flow assessment was TUFLOW HPC using a direct rainfall model. This model applies rainfall directly to a two-dimensional (2D) domain. The following data was used, and the following hydrologic assumptions made:

- Rainfall Intensity Duration Frequency (IFD) data was obtained from the Bureau of Meteorology and is shown in Figure 5
- Factor of 1.3 applied to the 1% AEP rainfall values to represent the 30% climate change increase
- Urban pervious area initial loss 10mm and continuing loss 2mm
- Bushland pervious area initial loss 28mm and continuing loss 3.7mm (ARR datahub)
- Impervious area (roofs and pavement) initial loss 0mm and continuing loss 0mm
- Median pre-burst rainfall depths (ARR Datahub) were included in the direct rainfall model as rainfall prior to the main storm
- A traditional hydrologic model was constructed using software DRAINS to estimate peak flows and nominate the median temporal pattern for each run duration. Figure 4 shows the results of this analysis and median temporal pattern nominated; and
- Storm durations of 30-minutes, 60-minutes, 120-minutes, and 180-minutes were modelled in the TUFLOW model.



Figure 3: Two-dimensional rain on grid model extents (red), pipe mains (green), downstream boundary (yellow)

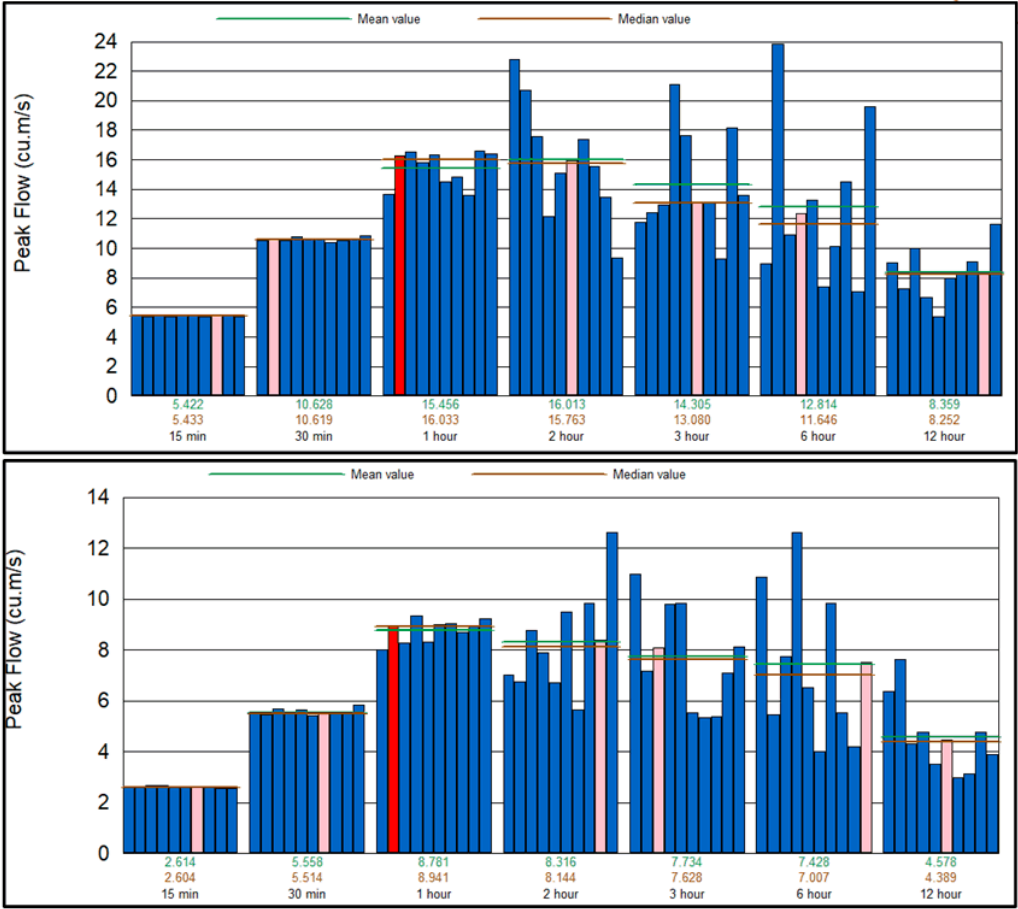
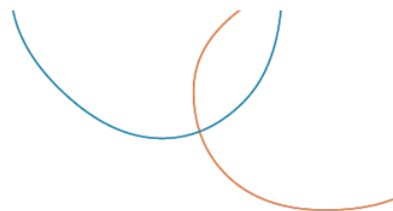


Figure 4: Drains model results for selection of median temporal pattern (Top 1% AEP + CC, bottom 5% AEP)

Copyright Commonwealth of Australia 2016 Bureau of Meteorology (ABN 92 637 533 532)				
All Design Rainfall Depth (mm)				
Issued:	21-Sep-20			
Requested coordinate:	Latitude	-42.878		
Nearest grid cell:	Longitude	147.302		
Annual Exceedance Probability (AEP)				
Duration	10%	5%	2%	1%
1 min	1.99	2.36	2.88	3.31
2 min	3.24	3.75	4.4	4.9
3 min	4.36	5.07	6	6.73
4 min	5.33	6.23	7.46	8.43
5 min	6.16	7.24	8.75	9.96
10 min	9.15	10.9	13.4	15.5
15 min	11.1	13.2	16.3	18.9
20 min	12.6	15	18.4	21.3
25 min	13.9	16.4	20.1	23.2
30 min	15	17.7	21.6	24.8
45 min	17.7	20.8	25.1	28.5
1 hour	20	23.3	27.9	31.6
1.5 hour	23.9	27.7	32.8	36.7
2 hour	27.3	31.5	37.1	41.3
3 hour	33.3	38.3	44.8	49.7
4.5 hour	40.9	47	55	61
6 hour	47.5	54.6	64	71.2
9 hour	58.4	67.4	79.6	88.9
12 hour	67.2	77.9	92.5	104
18 hour	80.5	94.1	113	127
24 hour	90	106	127	144

Figure 5: BOM rainfall depths (Before climate change factors applied)



2.4 Hydraulic model data and assumptions

The terrain surface used for the hydraulic assessment was obtained from a combination of the following sources:

- Civil design
- Survey of the site; and
- One-meter LiDAR information obtained from Geoscience Australia (2013 survey).

The following hydraulic assumptions were made:

- The catchment surfaces were estimated from aerial imagery (surface layers shown in Figure 6)
- The pipe network was modelled for the large trunk stormwater mains only (>600mm)
- The pipe network data was obtained from the Hobart City Council network GIS (opensource)
- The existing case rivulet cross section was taken to be the surveyed section, this represents a conservative capacity for the existing case as it is known that a significant amount of erosion occurred in the May 2018 flood, widening the rivulet locally. The cross sections were located specifically at the existing rivulet tunnel outfall, upstream and downstream end of the bridge and nominally 3 additional locations within the site. These sections were provided at the same location for the existing and proposed case to allow a suitable comparison
- Model grid cell size of 1m
- Pipes manning's 'n' values were assumed to be 0.013 for all pipes
- Road and pavement surface manning's 'n' of 0.02
- Buildings were modelled as flow obstructions, with rainfall on them contributing to catchment flows
- Critical solid masonry and concrete walls, carpark entry points and obstructions impacting overland flow on the development site were represented as raised obstructions and / or high roughness areas
- Bushland areas were modelled with depth varied manning's 'n', 0.2 up to 100mm and 0.06 above 300mm, with values interpolated between the two depths
- Urban areas were modelled with depth varied manning's 'n', 0.2 up to 100mm and 0.1 above 300mm, with values interpolated between the two depths
- Adjacent building floor levels in areas of interest were estimated from lidar and google street view; and
- Downstream boundary conditions were estimated from ground terrain grades and were located sufficiently downstream of the site to avoid backwater impacts.



Figure 6: TUFLOW model material roughness layers



2.4.1 Representation of rivulet through site

The rivulet was modelled as a one-dimensional (1D) element to ensure the conveyance capacity of the channel was adequately represented. The area modelled in 1D is shown in Figure 7, with the left image representing the existing case model and the right the development case model including the proposed bridge crossing. The 1D modelled section incorporates:

- Cross sections of the existing rivulet based on site survey
- Cross sections of the proposed design incorporating the retaining wall and bridge crossing
- The proposed crossing has been modelled nominally with a 2.5m wide and 0.9m high opening on the upstream face. The height was nominated to allow existing car park levels to tie into the crossing and to prevent the approaches from being lifted substantially, this cross-section area exceeds the cross section of the upstream discharging pipes
- The creek section was modelled with a manning's n of 0.035 to represent the undulating bedrock base of the rivulet
- Downstream of the 1D section, the rivulet was not surveyed previously and has been modelled in 2D using the available lidar information; and
- TUFLOW allows for flows to pass between the 2D and 1D computational areas at each cell intersection point (every 1m).



Figure 7: One-dimensional representation of rivulet through site (existing (left), proposed right))

2.4.2 Hydraulic blockage

A blockage assessment has been undertaken for the proposed key hydraulic structures around the site. The following blockage was adopted:

- 10% blockage for the new proposed crossing. The incoming stormwater pipes 1050mm and 900mm are smaller in cross sectional area than the proposed culvert making it unlikely to be blocked by debris exiting from the existing pipes. Overland flow re-entry occurs in the small opening between the existing pipes and proposed culverts, however this is not expected to be able to transport debris significant enough to block the culvert
- 10% blockage (under the deck) for the pedestrian bridge immediately downstream of the site. The opening under this crossing is also substantial when compared to the upstream pipe areas. Additionally, modelling shows flows approaching the rivulet overland to be relatively shallow and unlikely to be able to transport debris large enough to substantially constrict the opening; and
- 10% blockage of the 1500mm culvert 80m downstream of the site. This culvert, as per the footbridge, has a relatively large opening area compared to the potential debris emanating from the upstream pipe network.

2.5 Results and flood behavior

TUFLOW modelling results indicate that a storm event of 60-minutes is critical for both the 5% AEP and 1% + CC AEP events for the site based on the catchment characteristics. Flood behavior is displayed in Figure 8 and Figure 9, as can be seen, considerable flow is conveyed overland down Newdegate Street and onto Elizabeth Street. Flood depths shown are for depths greater than 25mm and velocity vectors demonstrate the flow direction. The main overland flow path has the following features:

- Approximately 10m³/s and 3m³/s flows overland down Newdegate Street in the 1% AEP + CC and the 5% AEP respectively
- The 1050mm pipe main conveys approximately 3m³/s and 2.3m³/s in 1% AEP + CC and the 5% AEP respectively. These values will be highly variable due to unpredictable blockage of structures along the network
- Water is observed to split flow paths between Newdegate Street and Pitt Street, the bulk of the flow however continues along Newdegate Street
- Flow reaches the corner of Newdegate and Elizabeth Streets with the majority of flow turning down Elizabeth Street; and
- The bulk of flow then continues along Elizabeth Street with predicted depths likely to inundate buildings through shop fronts.

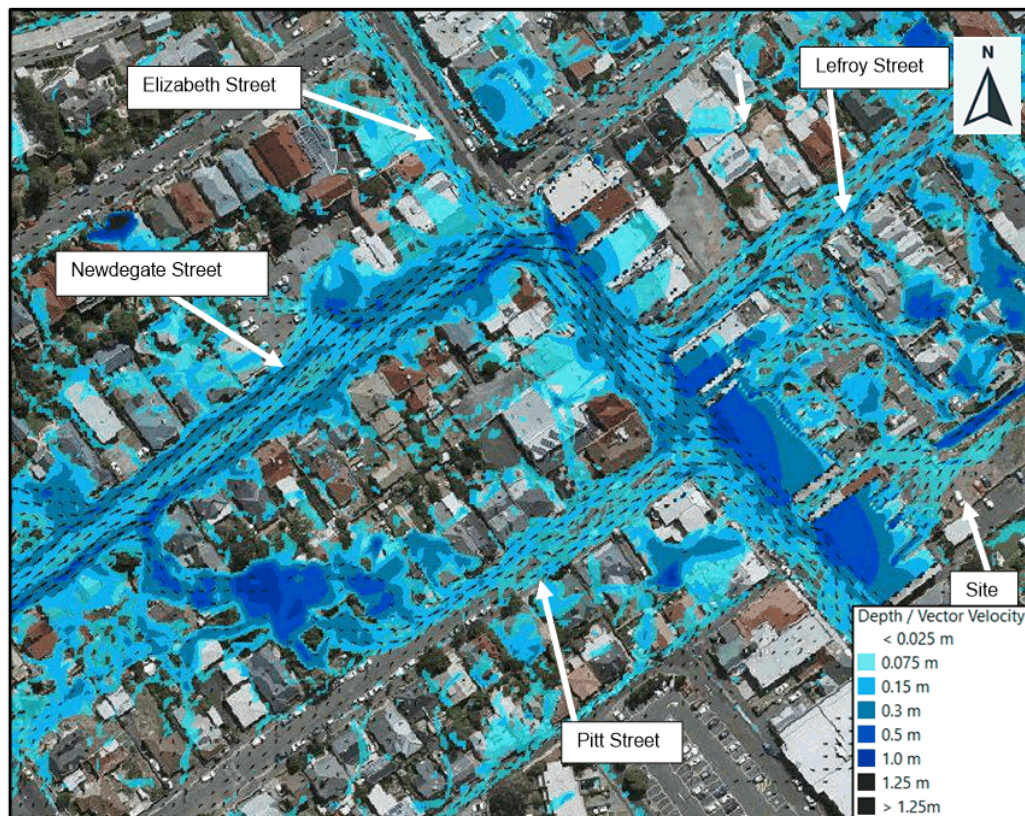


Figure 8: Flood extent for 1% AEP+ CC (Velocity vectors included)

- Flow approaches the site from several directions. These include:
 - Flow through the existing Lefroy Street car park
 - Flow down alleyways between properties on Elizabeth Street
 - Flow exits the stormwater network into the rivulet on the boundary of the site
- Approximately $3.5\text{m}^3/\text{s}$ and $2.5\text{m}^3/\text{s}$ exits the stormwater pipes into the rivulet in the 1% AEP + CC and 5% AEP event respectively. By the bottom of the site the flow in the rivulet is estimated to be $6.5\text{m}^3/\text{s}$ in the 1% AEP + CC and $3.5\text{m}^3/\text{s}$ in the 5% AEP event. This indicates that the site is a re-entry point for overland flows. Furthermore, a significant portion of the catchment flows do not arrive at the site, they are instead diverted along the following paths:
 - Along Lefroy Street past the Council car park
 - Along Elizabeth Street past the site
 - Site visit and inspection of these roads indicates that they generally have raised driveway crossovers (higher than typical minimum requirements) and would be capable of conveying high flows as model results indicate
 - Minor flows further upstream are also diverted along other roadways away from the site; and
- Peak flows at the downstream boundary were estimated to be approximately $15\text{m}^3/\text{s}$ and $7\text{m}^3/\text{s}$ for the 1% AEP + CC and 5% AEP events respectively leaving the model domain in several locations.

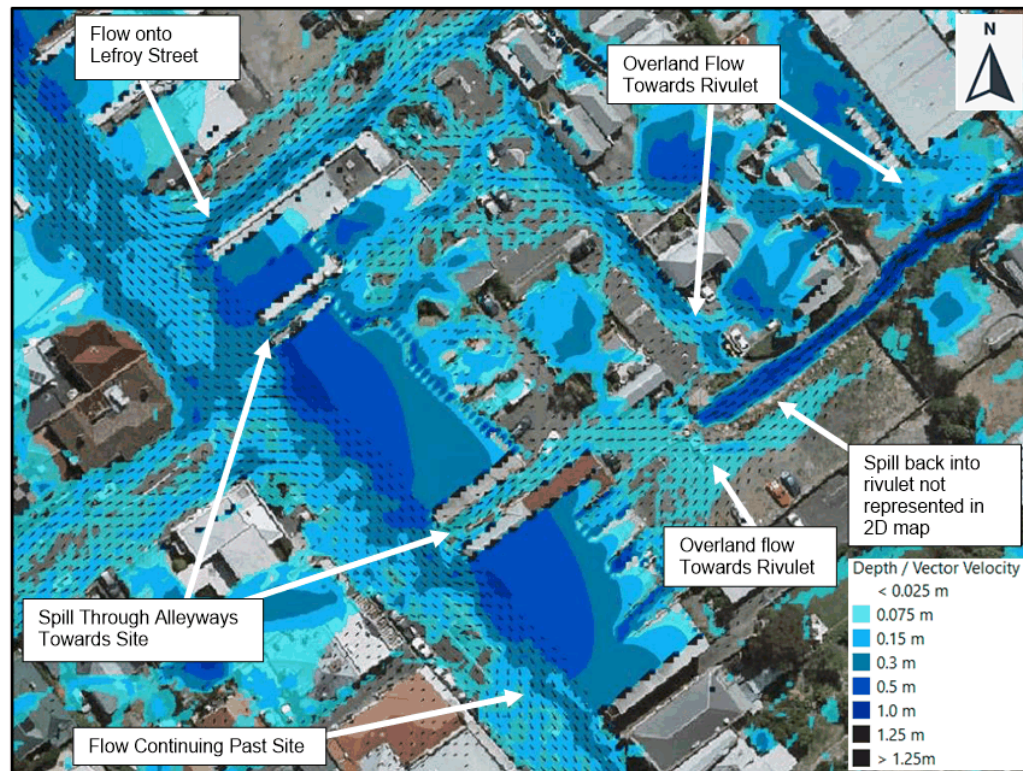


Figure 9: Existing flood extent with 1% AEP + CC

Table 1 below describes the peak discharge from the rivulet channel for each scenario. As can be seen there is minor increase in peak discharge. This is likely due to minor changes in geometry and improved recapture of flood flows, given the highly complex nature of flooding and sensitivity / precision of model results the difference is negligible. This marginal increase in flows through the main channel results in a reduction of overland (outside the channel) flows through the neighboring properties.

Table 1: Peak discharge from site (1D Model)

Scenario	5% AEP EXG	5% AEP DEV	1% AEP + CC EXG	1% AEP + CC DEV
Peak Site Discharge (m ³ /s)	3.37	3.39	6.55	6.63

2.5.1 Flood velocities

Flood velocities within the rivulet channel were generally very high from 3-5m/s in both events modelled. The downstream of site discharge velocities in the 1% AEP + CC event was estimated to be 4.68m/s and 4.72m/s for the existing and developed case respectively. For the 5% AEP case these values were estimated at 3.62m/s for the existing and 3.75/s for the developed case. In both cases there is a marginal increase in the peak velocity but as the following section shows there is no adverse flood level impact in the rivulet channel immediately downstream of the site. Site inspection showed existing damage and inadequate scour protection present in the channel immediately downstream of the site. The downstream infrastructure is already inadequate in areas and the change in velocity estimated presents no change in the susceptibility of the downstream infrastructure.



Figure 10: 1% AEP + CC developed case velocities

2.5.2 Flood hazard

Flood hazard is presented in Figure 11. For all scenarios, flows through the site are generally lowest hazard category H1 under the Australian Rainfall and Runoff Hazard categories (Figure 12), with the exception of the rivulet channel.

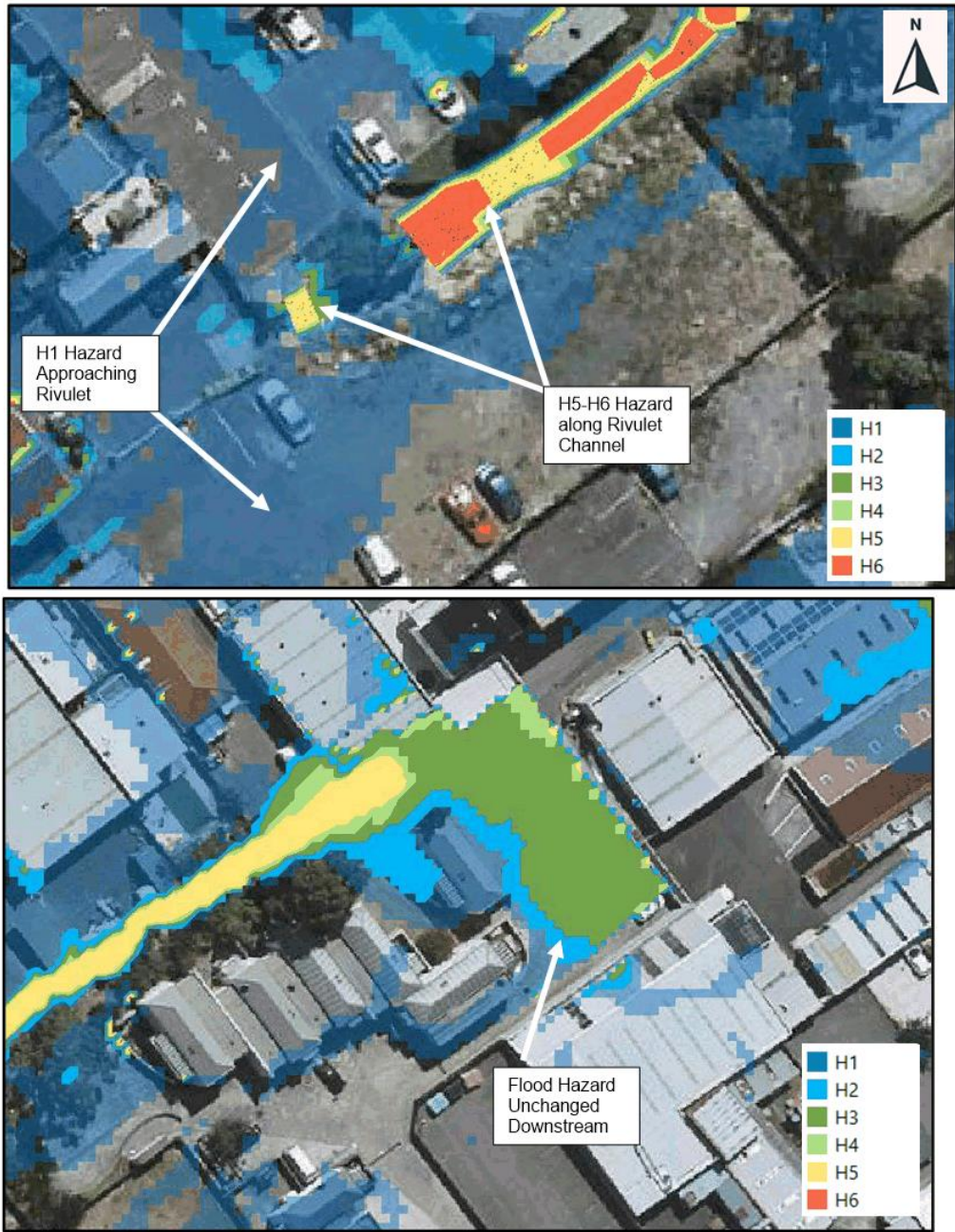


Figure 11: Flood hazard 1% AEP + CC developed case

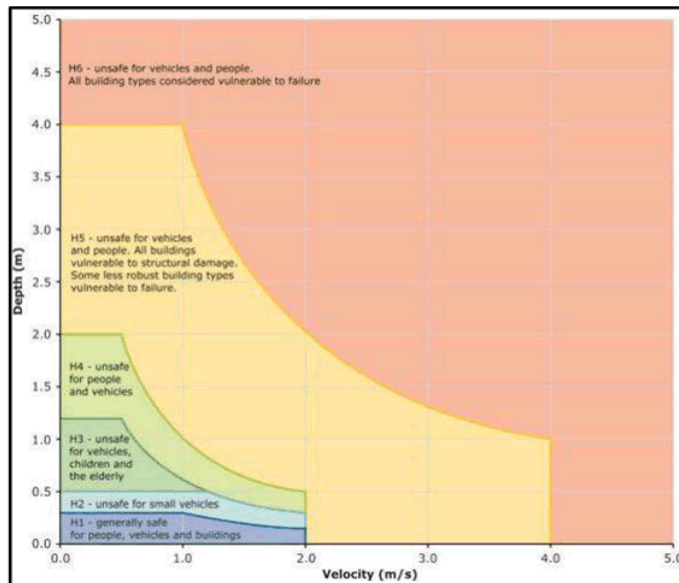


Figure 12: Flood hazard categories (ARR19)

2.5.3 Flood afflux

Flood afflux is the measure of water level change due to the development. The flood afflux map for the 1% AEP + CC is presented in Figure 13. The results show there is no adverse impact on adjacent properties which is generally a small decrease in flood level.

Inherently there is significant uncertainty surrounding the flows and depths obstructed by multiple masonry walls, timber fences and grated fences. Within the Rivulet channel on the site, there is an increase in water levels along the length of the site, however this diminishes to essentially no change at the boundary of the site. The water level for all scenarios was contained within the channel through the site, that is to say, once water has entered the rivulet channel it does not exit the channel within the boundary of the site. The increase is due to marginal narrowing of the channel in some locations.

The afflux presented shows transparent for water levels below 20mm which is taken to be negligible in the context of the complexity of flood behavior through the area. At 45A Burnet Street there is a modelled 15-20mm increase in water level however there will be no change in the hazard categorization of flood water on this and other adjacent properties.



Figure 13: 1% AEP + CC flood afflux existing vs development

2.5.4 Rivulet cross section water levels

Analysis of the water level at several cross sections has been undertaken to determine the flood impacts. Figure 14 shows six nominal cross sections within the site. The following figures describe the water level for each cross section for each of the scenarios modelled. Results show that there are flood level changes in some areas for the development case within the channel, however this diminishes to no impact at the downstream cross section at the site boundary. The water level is contained within the channel for each scenario and given the bedrock base and proposed concrete retaining wall there will be low risk of erosion within the channel.



Figure 14: Cross section locations

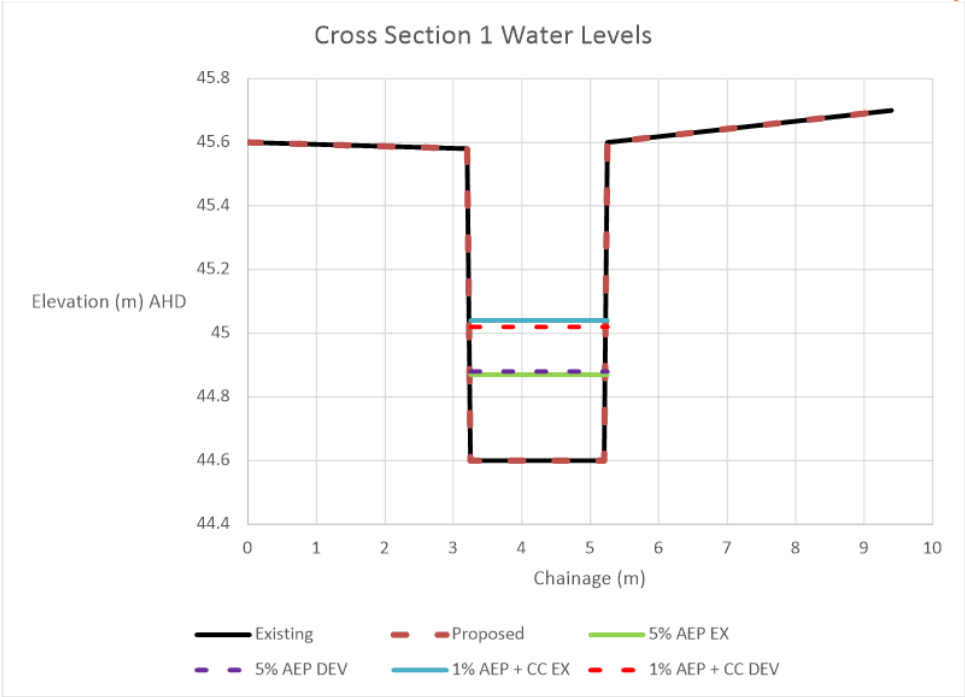


Figure 15: Water level cross section 1 (Existing culvert outlet)

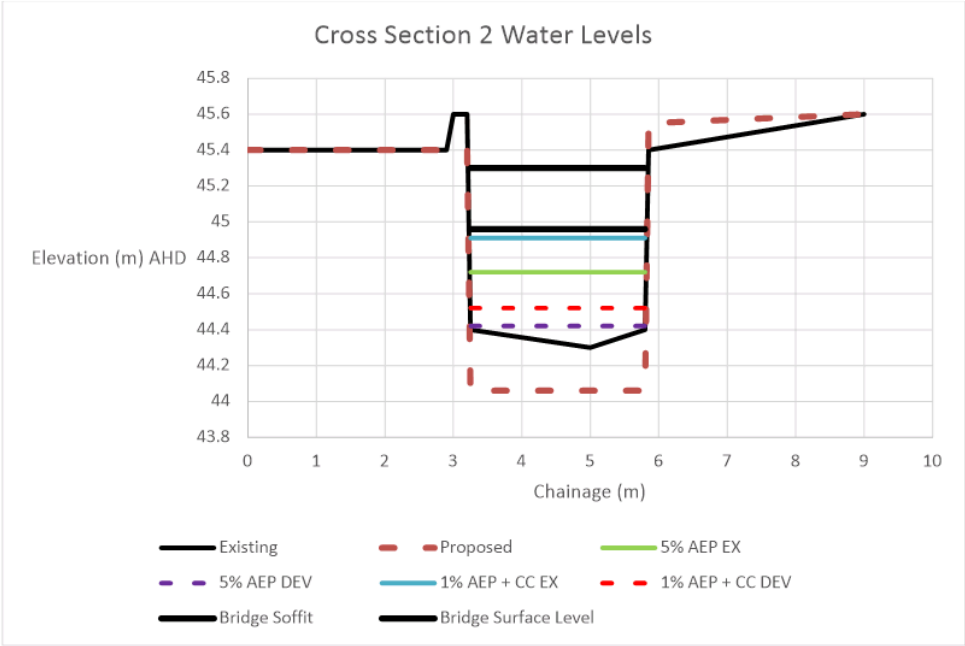


Figure 16: Water level cross section 2 (Proposed culvert inlet)

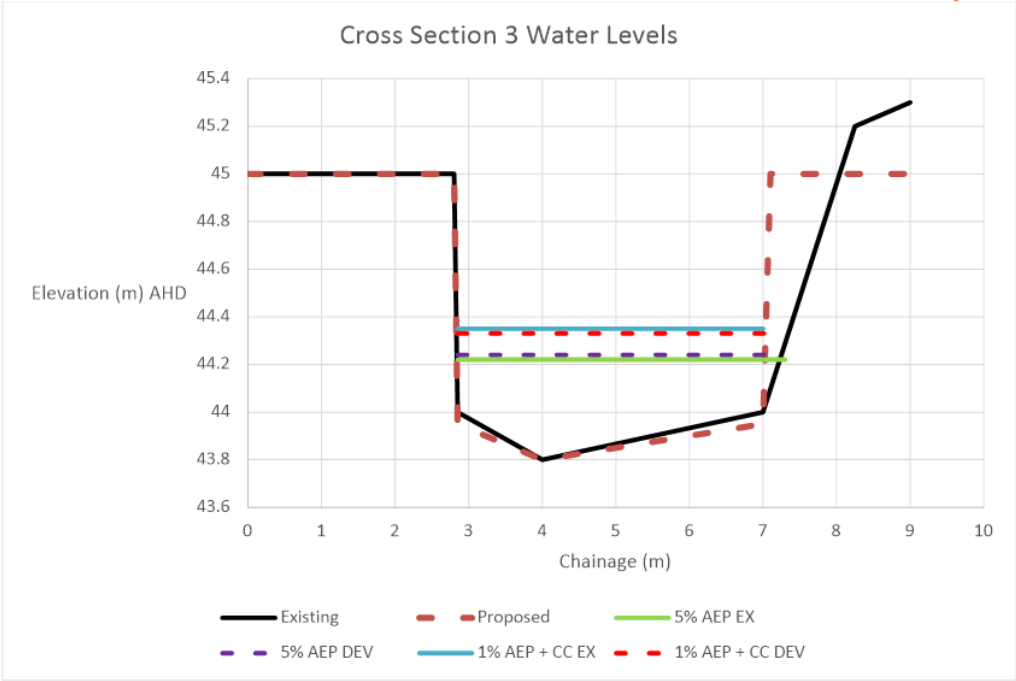


Figure 17: Water level cross section 3 (Proposed culvert outlet)

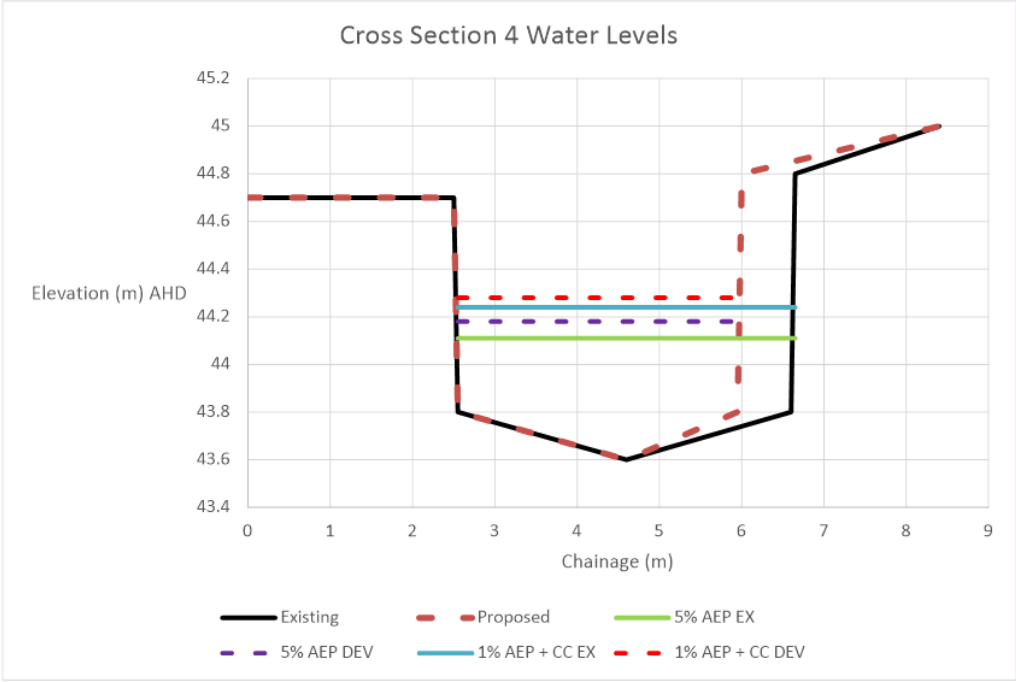


Figure 18: Water level cross section 4

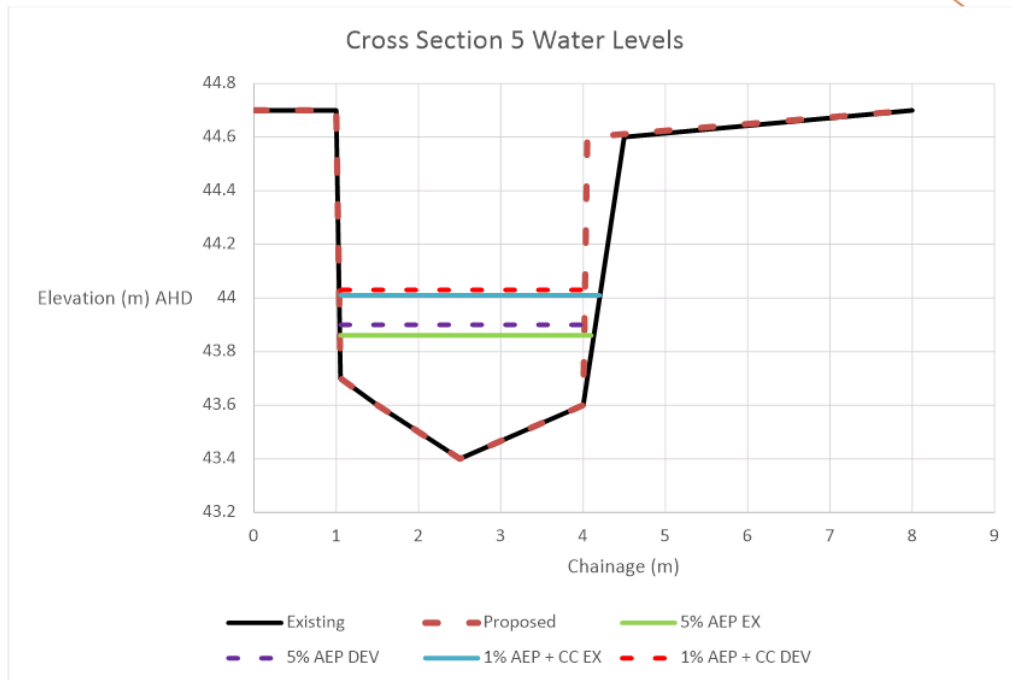


Figure 19: Water level cross section 5

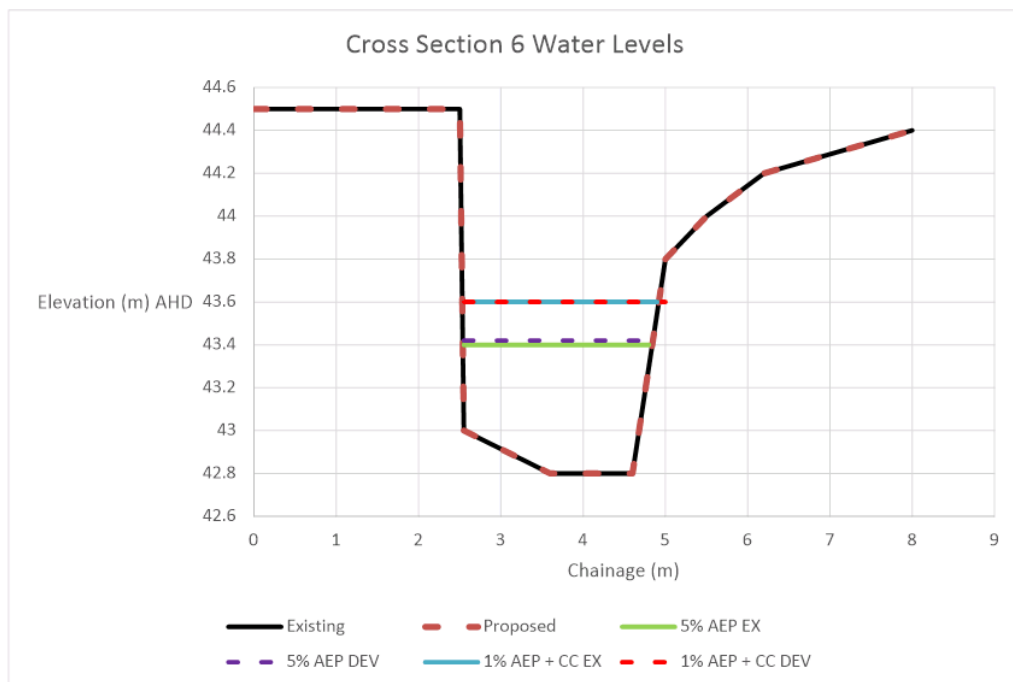


Figure 20: Water level cross section 6 (Downstream end of site)



3. Discussion and recommended design features

An inundation assessment of flood conditions under a 5% AEP and 1% AEP + CC event has been undertaken for the proposed retaining wall and bridge crossing. Results indicate that the retaining wall and bridge crossing can be constructed without creating any adverse impacts in flood behaviour on adjacent properties or creating a greater flood hazard through the existing site.

To ensure that the inundation requirements can be met the, the proposed design will incorporate the following features (see Figure 21):

- The surface level of the approach to the bridge from the northern (Lefroy Street) side of the bridge will be maintained at existing levels. This is to ensure that the overland flow path is not altered and does not create a water level increase on the adjacent property by backing water up
- Similarly, the bridge road surface will be low enough to ensure that the northern approach is kept at, or lower than existing levels. The impact of this is:
 - Additional localised excavation of the existing concrete slab is necessary to achieve a satisfactory cross section under the bridge at the upstream cross section (modelled hydraulically as a 2.5m x 0.9m opening at the upstream end). The base will be re-established as a concrete lined section to the limit of the existing extent
- The top of the new retaining wall will not protrude higher than the top of the proposed kerb and channel that drains the carpark to ensure overland flood flows are still able to spill into the rivulet as they do currently
- The 321-323A carpark surface will be graded (as it currently is) towards the rivulet channel to allow overland flow to re-enter the rivulet and not be directed onto adjacent property
- The existing wall immediately upstream of the proposed bridge will be reinstated at a suitable height to contain the rivulet flows
- At the location of the proposed raingarden, the rivulet side of the garden will be lower than the eastern boundary side to allow overland flow to preferentially re-enter the rivulet and not flow through to the adjacent property as it would under existing conditions; and
- Fencing is proposed to prevent persons from being able to enter the rivulet easily, this fencing will utilise the maximum spacing of wire / bars allowable under the relevant standards, particularly near the ground level to provide the greatest chance for flood water to re-enter the rivulet.

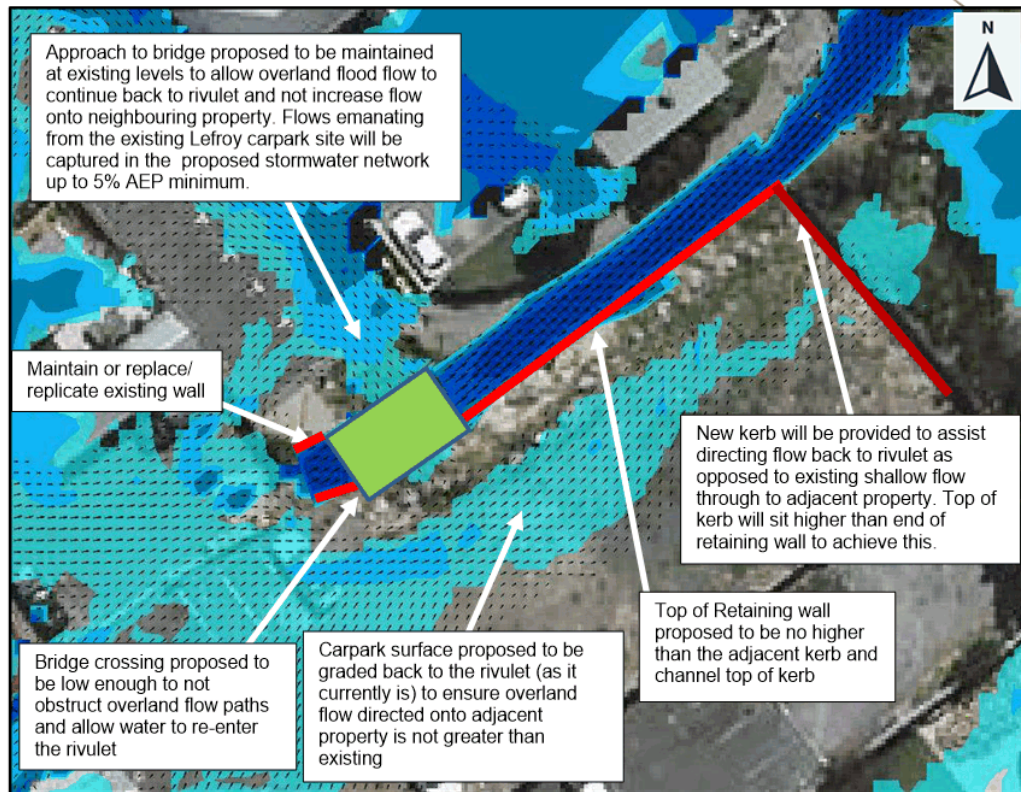
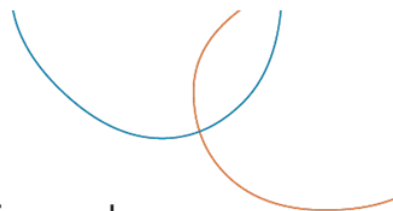


Figure 21: Proposed design features (for minimising flood impact)



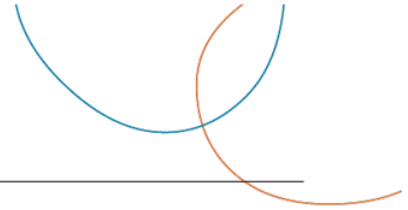
4. Responses to stormwater and inundation code

Based on a design following the flood recommendations provided in the report. The following planning scheme responses are relevant to the proposed retaining wall and bridge crossing:

4.1 Inundation prone area code

Table 2: E15.7.5 Riverine, Coastal Investigation Area, Low, Medium, High Inundation Hazard Areas

E15.7.5 Riverine, Coastal Investigation Area, Low, Medium, High Inundation Hazard Areas	
Objective	
(a) To ensure that landfill and mitigation works do not unreasonably increase the risk from riverine, watercourse and inland flooding, and risk from coastal inundation. (b) To ensure that the risk to waste water management from riverine, watercourse and inland flooding, and risk from coastal inundation is appropriately managed.	
Acceptable Solution	Performance Criteria
A1 For landfill, or solid walls greater than 5 m in length and 0.5 m in height, there is no acceptable solution.	P1 Landfill, or solid walls greater than 5 m in length and 0.5 m in height, must satisfy all the following: <ul style="list-style-type: none"> a) No adverse effect on flood flow over other property through displacement of overland flows b) The rate of stormwater discharge from the property must not increase; and c) Stormwater quality must not be reduced from pre-development levels.
Assessment A1 Is not met as a new retaining wall greater than 5m length and 0.5m high is proposed. P1(a) can be achieved as it has been demonstrated that there is no adverse effect on other properties. P1(b) can be achieved as the same flood flow will move through and discharge from the site. The proposed development will marginally increase the flow in the main channel but lessen the overbank flow into the adjacent property. Depending on how P1(c) is interpreted, water quality requirements will be achieved by both: <ul style="list-style-type: none"> • Implementing water sensitive urban design principles (i.e., a raingarden will be constructed) for general stormwater runoff, and • Construction of the wall and sealing of carpark will prevent major erosion (i.e., water quality impact) during a flood event such as occurred in May 2018. 	
A2 No acceptable solution.	P2 Mitigation measures, if required, must satisfy all of the following: <ul style="list-style-type: none"> a) Be sufficient to ensure habitable rooms will be protected from flooding and will be able to adapt as sea levels rise; and b) Not have a significant effect on flood flow

**Assessment**

A2 is not met as there is no acceptable solution.

P2(a) is not relevant,

P2(b) will be met as this report demonstrates there is no significant effect on flood flow off the site and flows on the site are not hazardous with the exception of the rivulet channel which is recommended to be fully fenced.

4.2 Stormwater Code

Table 3: E7.7.1 Stormwater Drainage and Disposal

E7.7.1 Stormwater Drainage and Disposal

Objective:

To ensure that stormwater quality and quantity is managed appropriately.

Acceptable Solution	Performance Criteria
A4 A major stormwater system must be designed to accommodate a storm with an ARI of 100 years.	P4 No Performance Criteria

Assessment

A4 will be met as the 1% AEP event has been modelled and the flow paths shown for both the site drainage and major flood flows.

5. Conclusion

An Inundation Assessment has been undertaken for the 1% AEP + CC and 5% AEP rainfall events for both the existing and proposed development case. Several assumptions were necessary to undertake the analysis with results indicating the proposed retaining wall and bridge crossing are feasible from a flood inundation perspective. If the recommendations are followed the design can:

- Meet the Stormwater and Inundation Code requirements of the Planning Scheme
- Ensure that there are no adverse impacts on adjacent properties
- The floodwater moving across the car parks will be of low H1 hazard category which will present a low risk to persons
- The floodwater down the rivulet will be very high hazard (H5-H6) and as such fencing of the carpark on the rivulet side is recommended
- Floodwater that enters the rivulet channel within the bounds of the site does not exit the rivulet channel, i.e., it is contained in the channel all the way to the boundary; and
- The proposed concrete retaining wall will be suitable to withstand the hydraulic forces in the rivulet.



321-323A Elizabeth Street - Inundation Assessment

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Lefroy Street Car Park Upgrades and Extension

To Glenn Doyle, City of Hobart

From Franklin Koneri and Joshua Hniat, pitt&sherry

Date 20 June 2022

RE **Electrical, Lighting and Communications Concept Design Memorandum**

1. Background

City of Hobart (Council) has signed a lease agreement with the owner of 321-323A Elizabeth Street, Hobart with the intention of developing the site into a public car park. The car park is proposed to serve as an extension to the existing Lefroy Street carpark owned by the Council with a bridge linkage to be provided across the Providence Rivulet between the two sites.

Additionally, areas of the existing Lefroy Street car park are proposed to be upgraded. This includes the addition of two new DDA compliant car parking spaces and two electric vehicle charging bays.

2. Scope

This memorandum outlines the following elements of the car park upgrades and extension (currently at concept level stage for development application purposes) as proposed in accordance with the Hobart Interim Planning Scheme 2015:

- Lighting at the new and existing areas of the car park
- Electrical services to be reticulated across the car park; and
- Provision of underground conduits for surveillance and communications equipment.

3. Design

3.1 Standards

Table 1: Design standards

Document	Revision
AS/NZS 3000 Electrical Installations – Wiring Rules	2018
AS/NZS 1158.3.1 Lighting for roads and public spaces (Category P)	2020



3.2 Carpark lighting

The existing car park is proposed to be modified to make an allowance for two DDA compliant parking bays. The existing lighting in the area of these DDA spaces does not provide the required illumination to comply with AS/NZS 1158.3.1. The proposed design allows for a new light pole and luminaire of a similar height (4 m) and type as the existing light poles to be installed at the DDA parking bays to provide the additional illumination required. The requirements of the standard for the DDA parking bays are listed in the table below:

Table 2: Standard requirements for DDA parking bays

Lighting subcategory	Point Horizontal Illuminance (E_{ph})
PCD	≥ 14 lux AND $\geq \bar{E}_h$

Note: \bar{E}_h is the average horizontal illuminance of the overall car park

The existing areas of the car park are illuminated by We-ei manufactured halogen luminaires that are understood to have been installed more than 10 years ago. The location and quantity of the existing light poles and luminaires (along with the new proposed luminaire for the DDA parking bay) provide an average illumination of 28.823 lux.

A new light pole and luminaire will need to be installed to illuminate the disabled parking bays to the levels nominated within the standard. It is preferred that the new light pole be of the same height as that of the existing. The new luminaire shall be energy efficient LED type and be chosen to provide the required lumens necessary to meet the required illumination levels. The average illuminance of the DDA parking bay that can be achieved with the new luminaire modelled is 22.46 lux with a point horizontal illuminance (i.e., the minimum horizontal illuminance in the DDA parking bays) of 15.7 lux. This partially complies with the requirement of the standard in that the minimum point horizontal illuminance is below the average illuminance for the rest of the car park. An alternative luminaire with equivalent or better light distribution properties may be used to improve the illumination outcome.

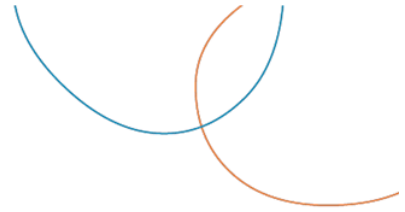
The existing lighting in the remainder of the existing car park is expected to remain as-is (any failed luminaires to be replaced with like-for-like) unless an alternative economic solution to replace all of them is proposed as part of the detailed design. As shown in the attached lighting model output, the levels achieved in the existing car park with the existing luminaires (all assumed to be functioning) meet and exceed the requirements of lighting subcategory PC3 nominated in AS/NZS 1158.3.1.

The section of the land adjacent to the existing car park that is proposed to be converted into a car park will need new lighting. The intention of the design is to achieve lighting to subcategory PC3 nominated in AS/NZS 1158.3.1. The requirements of the standard are summarized in the table below:

Table 3: PC3 nominated AS/NZS 1158.3.1 lighting standards

Lighting Subcategory	Average Horizontal Illuminance (\bar{E}_h)	Point Horizontal Illuminance (E_{ph})	Illuminance (horizontal) uniformity (U_{E2})
PC3	3.5 lux	0.7 lux	8

The design includes six new light poles with sample LED luminaires to illuminate the new council-controlled sections of the car park. The poles are to be 4 m high and suitable for mounting the new luminaires at the designed locations. Each pole will support new LED luminaires with outreach arms as required to provide better light distribution across the various areas of the car park. The attached light model demonstrates the light levels expected in the new car park and compliance with lighting subcategory PC3 of the standard. Alternate reliable and economical LED luminaires are plausible as long as the design intent is achieved.



3.2.1 Obtrusive / spill lighting assessment

A high-level assessment of the potential for the spillage of light from the existing and new lighting onto the adjacent properties has been carried out. The assessment was a desktop study of the likelihood of the obtrusive effects of the car park lighting on habitable rooms of residential buildings.

The majority of the buildings surrounding the existing car park are either commercial facilities or do not have windows or doors facing the car park and are therefore not subject to spill lighting. The properties that have windows facing the car park are set back from the fence line where the light levels spilled from the carpark lighting are expected to be well below the maximum allowable levels.

An annotated site plan and supplementary photos identifying window locations within the rear elevation of the dwellings within 45A Burnett Street and the freestanding dwelling within 317 Elizabeth Street which face the proposed light poles and light is enclosed with this letter. This sketch illustrates the approximate horizontal distances between the proposed and existing lights to the identified windows.

- The majority of the windows identified on the annotated site plan are either positioned above the height of the proposed new lights and shielded by trees or other structures or a combination of both
- All of the windows on dwellings within 45A Burnett Street that face the existing car park will be only affected to the level that they already are in the current installation; and
- Some of the windows facing the new and existing car parks are likely to be of non-habitable rooms (bathrooms / toilets), to which the spill lighting criteria do not apply.

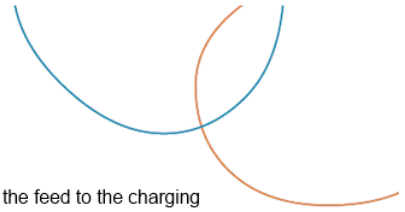
A more detailed assessment will need to be done at the detailed design stage to confirm that the spill lighting on all relevant properties is within the limits stipulated in AS/NZS 4282.

Should it be determined that the level of the spill lighting exceeds the levels stipulated in the standards, the proposed luminaires could be specified to be dimmable which would automatically dim the car park lights subject to inactivity during late night / early morning hours. The controls for the lighting would be a combination of presence detection and timer controls to reduce the intensity of the light spill by around 50% during times of inactivity in the car parking area.

3.3 Electrical infrastructure

Given the number of unknowns around the existing electrical infrastructure in the existing car park, pitt&sherry were previously engaged by the Council to carry out an investigation at the site. The scope and findings of this investigation are documented in the attached memorandum (pitt&sherry document reference 'T-P.19.0421-06-ELE-LET-002-Rev00'). The proposed concept design has been based on the findings from this investigation in addition to information that was able to be supplied by Council and sourced from Southern Lighting.

The existing carpark is serviced by a switchboard installed at the entrance of the existing car park, near Lefroy Street. This switchboard has sufficient capacity and space for the addition of circuits to supply the new car park lighting. The design specifies two separate circuits to supply the new lighting – one circuit for the new light pole at the DDA parking bays and one circuit for the new light poles in the new car parking area at 321-323A Elizabeth Street. This will require the installation of new circuit breakers with RCD protection to supply the new lighting circuits.



The proposed EV charging stations will also require a power supply feed. The size of the feed to the charging station will depend on the specific charging unit that will be procured by the Council for installation at the location. A review will need to be conducted at the time to determine the spare capacity available in the electrical switchboard to service the charging equipment demand. Depending on the type of charging infrastructure that is to be installed, there will likely be a need to increase the capacity of the switchboard which may include one or more of the following:

- Upgrading the size of the feeder circuit breaker in the substation
- Upgrading the size of the mains cable supplying the switchboard
- Upgrading the size of the incomer in the switchboard; and
- Installation of new circuit protection devices to supply the charging station.

Any increase to the capacity of the switchboard will require design and connection coordination with TasNetworks.

3.4 Underground services

3.4.1 Electrical

As part of the upgrade there is a need to make provisions for supplying power to the following:

- All new light poles in the existing and new car parking areas
- Future (designated) Electric Vehicle (EV) charging bays
- CCTV; and
- A new parking meter (provisionally).

A pit and conduit system are proposed for the reticulation of power supply across the car parking areas. Power supply to all the lighting is to be sourced from the existing electrical switchboard located near the entrance to the car park on Lefroy Street adjacent to the substation. Power cabling to the lighting system is expected to be 2C+E PVC cables run in underground conduits. Provision has been made for Heavy duty PVC conduits (Nominally 80 mm diameter orange) for running the power cables through. This allows space for future installation of additional cables if the need arises.

Cable pits have been provided at various locations between the electrical switchboard and the light poles in the new car parking area. These include some along long straight runs of the conduit and at every change of direction of the conduit run where the angle is less than 120°. Each junction will also have a cable pit.

Two parking bays close to the location of the electrical switchboard have been nominated for the provision of EV charging stations in the future (2 of). Heavy duty PVC conduit are proposed to be laid underground including pits at the location of the EV parking bays as well as at the location of the switchboard to route the cables through.

3.4.2 Parking meter

It is proposed to install a new parking meter in the new car parking area at 321-323A Elizabeth Street. The specific details of the parking meter to be installed have not been made available to pitt&sherry at present. However, it has been advised that the unit will be primarily solar powered but will also have the ability to use grid power. Provision has therefore been made for the installation of an underground conduit from the nearest main conduit trunk to the proposed parking meter location for the installation of a power cable. The size and type of the power cable is yet to be determined and it is expected that an 80 mm diameter conduit will be suitable to house the cable. A pit is to be installed adjacent at the proposed location of the parking meter for routing of the power cable.



3.4.3 Communications

Council has indicated the need to provide underground infrastructure for the future installation of communications cabling around the car parks. The communications equipment is likely to be installed at the locations of the light poles. While the specific details of the types of communications cables to be run in the conduits are unavailable at this stage, a set of three 50 mm diameter conduits to each light pole location in the existing and new car parks has been requested and provided for in the design.

The design allows for the installation of three white-coloured heavy duty PVC conduits from the electrical switchboard to each of the light poles in the existing and new car parks. Light poles along the same route will share the same three conduits. Each of the three conduits will terminate in a pit adjacent to each light poles.

There is to be no cross-cabling between the electrical and the communications conduits. Conduits are differentiated by colour in line with the relevant standards.

3.4.4 Design drawings

Refer to the pitt&sherry development application drawing set for:

- New Car Park - Electrical Services Plan 'S-P.19.0421-00-ELE-DRG-601'
- Existing Car Park - Electrical Services Plan 'S-P.19.0421-00-ELE-DRG-602'; and
- Existing Car Park - Switchboard Electrical Single Line Diagram 'S-P.19.0421-00-ELE-DRG-603'.

3.4.5 Power authority (TasNetworks)

The upgrades to the lighting, the lighting in the new section of the car park and the additional power supply to the EV charging stations warrant an application to be made to the power authority TasNetworks for the provision of additional electrical power. It is likely that the substation located at the edge of the car park will have the additional power necessary for the upgrades to the car park as discussed, however, an application needs to be made to TasNetworks. The successful D&C contractor shall initiate the application towards the completion of the detail design phase to enable sufficient information to be provided in the application.

Yours sincerely

Franklin Koneri
Associate Electrical Engineer

Joshua Hniat
Project Manager

Enc.

1. Lefroy Street Car Park Electrical Investigation 'T-P.19.0421-06-ELE-LET-002-Rev00'
2. Lighting design (model) of the existing car park with DDA parking bays
3. Lighting design (model) of the new car parking area
4. Annotated site plan and supplementary photos identifying window locations



pitt&sherry

Specialist Knowledge.
Practical Solutions.

17 November 2021

Glenn Doyle
City Projects
City of Hobart
GPO Box 503
Hobart TAS 7001

**Pitt & Sherry
(Operations) Pty Ltd**
ABN 67 140 184 309

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info@pittsh.com.au
pittsh.com.au

Located nationally —
Melbourne
Sydney
Brisbane
Hobart
Launceston
Newcastle
Devonport



Dear Glenn,

Re: Lefroy Street Car Park Electrical Investigation

Introduction

On Tuesday 16th November 2021 the electrical investigation of the existing Lefroy Street car park owned by City of Hobart (Council) was carried out. The scope for which is outlined in our proposal document 'T-P.19.0421-CO06-GEN-PRO-001-Rev00'. Present at the inspection was:

- Joshua Hniat of pitt&sherry (Engineer)
- Chris Johnson from Archer's Underground Services (Service locator)
- Andy Eastley from Contact Group (Electrician); and
- Michael Chapman from Council (Surveyor).

This letter serves as a summary of the electrical investigation findings which will be used moving forward for the design of the existing car park and extension into 321-323A Elizabeth Street. It would be prudent for Council to lodge this correspondence on file for the car park for future reference.

The following was confirmed during the site investigation and following discussions with Contact Group and Southern Lighting:

Existing electrical cabling layout

- Archer's Underground Services (AUS) were able to successfully map the electrical power supply from the existing switchboard to each of the existing light poles
- The locations and approximate depths (+/- 300 mm) were surveyed by Council's surveyor during the investigation and these will be added to the current survey of the site; and
- AUS were unable to accurately determine the location of the buried feeder cable from the Lefroy Street substation to the switchboard due to the many electrical interferences in the area. The expected location of this feeder cable as identified by AUS is shown on Figure 1 noting that it is approximately 2-3 m in length



Figure 1: Expected location and approximate depth of feeder cable from substation to switchboard

Existing switchboard (located near the Lefroy Street entrance)

- The existing switchboard is supplied by a single-phase cable with an incoming fuse rated at 32 A
- The supply cable is a 6 mm² cable run underground from the adjacent Lefroy Street substation housed in a 25 mm diameter conduit
- The existing car park lighting runs off a single circuit with a 2.5 mm² power cable housed in a 25 mm diameter conduit
- The switchboard has room for the installation of 3 additional miniature circuit breakers (MSB) with the possibility of acquiring a couple more if the existing escutcheon panel was to be cut
- The car park lighting circuit is supplied from a single 16 A Residual Current Circuit Breaker (RCD); and
- When turned on, the existing functional luminaries were measured to draw approximately 1.6 A at the switchboard (refer Figure 2) noting that 4 of the 10 lights were not in service at the time of the inspection (suspected blown globes). So this figure is representative of 60% of the existing car park lighting load (6 lights turned on, not the full 10)



Figure 2: Lefroy Street entrance switchboard (ammeter reading shown with 6 of 10 lights turned on)

Luminaires and poles

- There are a total of 10 WE-EF PFL230 70 watt luminaires (confirmed by Southern Lighting) installed across the car park on 6 poles (4 poles have 2 luminaires each and 2 poles have 1 luminaire each). The locations of these are as shown on the current concept layout plans for the existing car park (refer enclosed); and
- Luminaires are mounted on a 4.5 m high and 90 mm diameter galvanised GM Poles. The luminaire mounting heights are at 4 m from the surface of the pavement/kerb beneath

Based on advice provided by Southern Lighting (the local distributor of We-ef lighting products), it is likely that the current luminaires were installed circa 2007/2008. Southern Lighting have also advised that these luminaires are no longer available and have transitioned to the more energy-efficient LED configurations. The housing for these luminaires hasn't changed and We-ef produce and supply retrofit kits to upgrade the metal halide lamps to equivalent LED units.



Figure 3: Typical installation of WE-EF PFL230 luminaires

Other service scanning and locating

- The north-western end of the existing car park was GPR scanned by AUS in an effort to locate any other services present in this area, particular where EV charging bay infrastructure may be located. Due to the 3 HV cables founded in the Lefroy Street footpath in close proximity to the scanned area, the electrical disturbance was significant and they were unable to confirm any undocumented underground services in this area on Council property. There would also be an electrical insulating matt around the base substation in this area.
- AUS were also able to assist in locating the upstream MSCL DN1050 stormwater pipe and the VC DN150 lateral sewer line running north-west in the new car park site. These were both surveyed by Council's surveyor during the investigation and these will be added to the current survey of the site

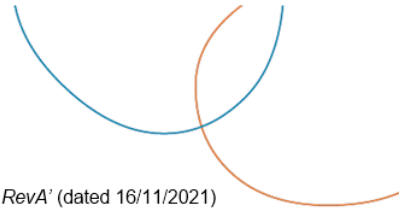
Conclusion

A number of attachments relevant to the subject matter are enclosed with this letter.

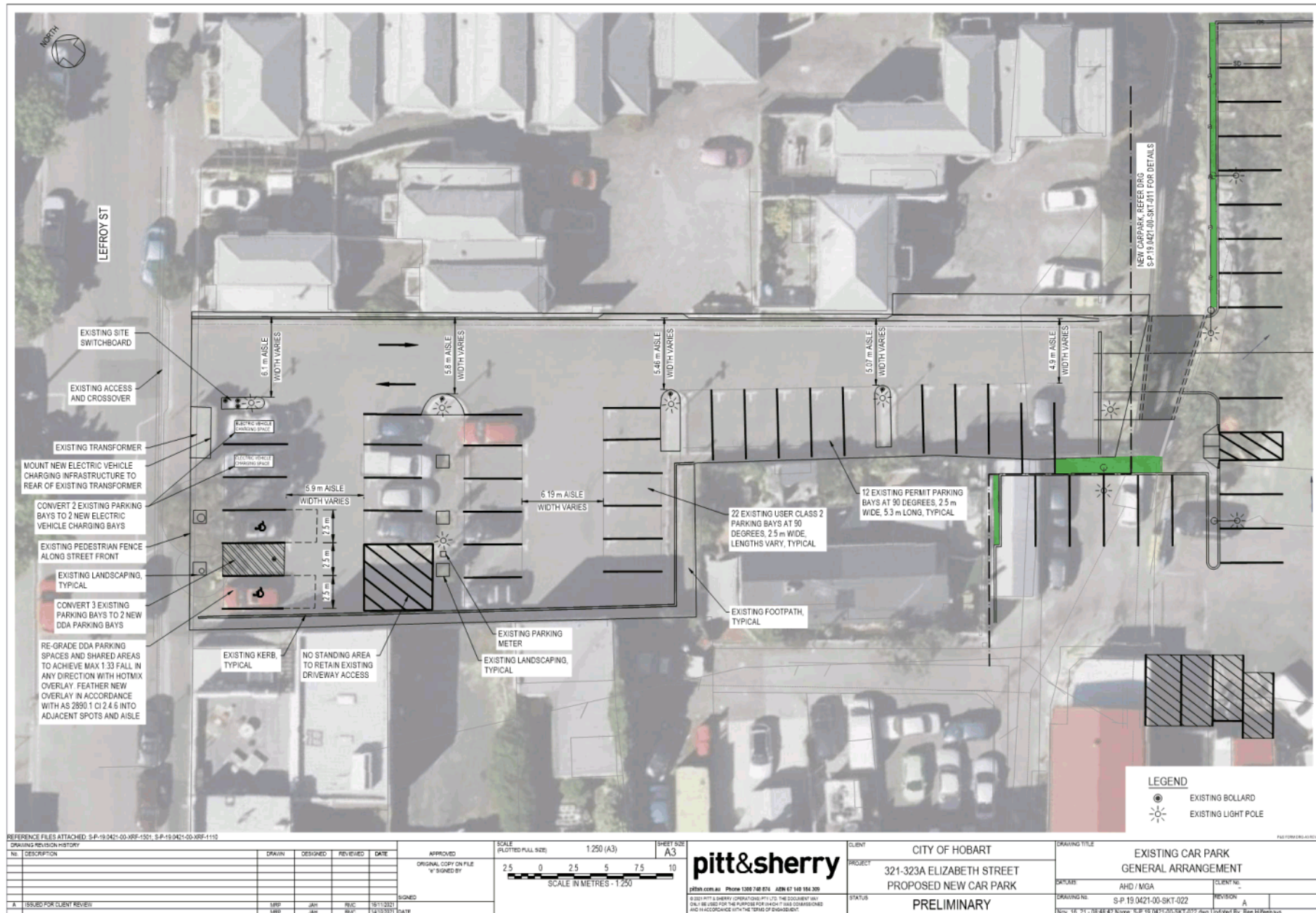
I trust that this information provides sufficient clarification around the existing electrical infrastructure at the existing Lefroy Street car park site. Should you have any further queries, please do not hesitate to contact the undersigned.

Yours sincerely

Joshua Hniat
Civil Engineer



- Enc. 1. pitt&sherry Concept Plan for Existing Car Park 'S-P.19.0421-00-SKT-022 RevA' (dated 16/11/2021)
2. Archer's Underground Services Site Record Form (16365)
3. PFL200 [S] Series Brochure (Southern Lighting supplied)
4. Southern Lighting Lefroy Street Lighting Assessment Report

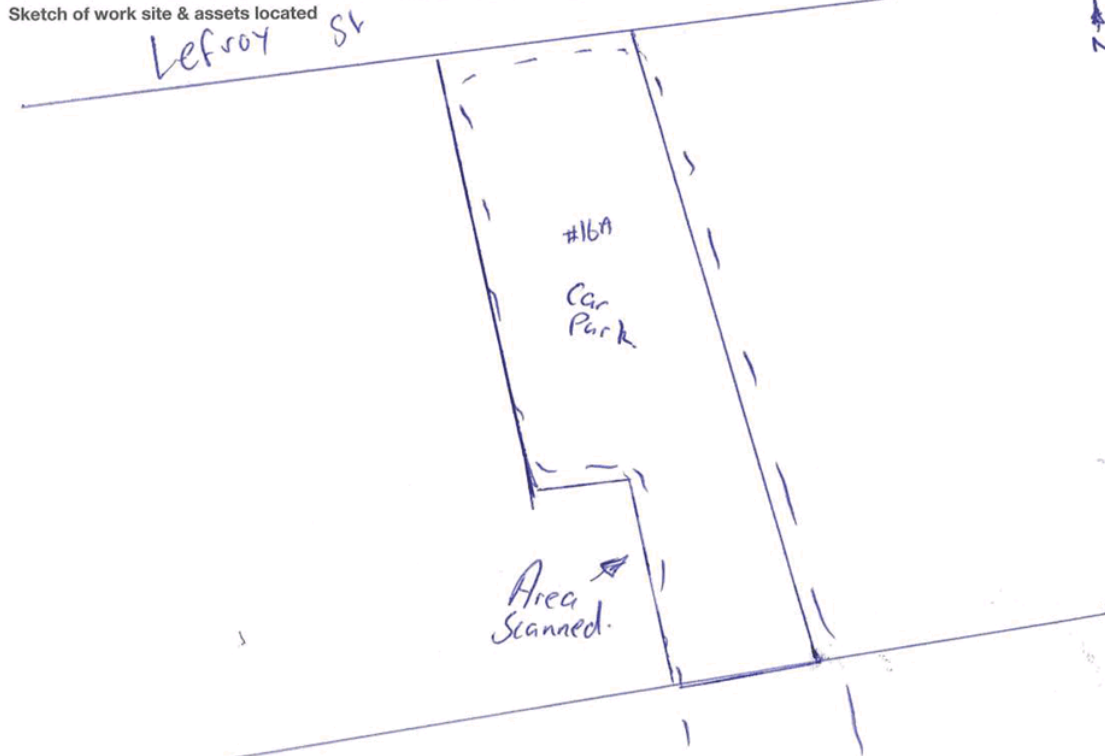


CERTIFIED PLANT LOCATOR
SITE RECORD FORM
 DBYD Confirmation: 16365
30904394

 WORK SITE ADDRESS: 16A Lefroy St, North Hobart
 Postcode:

LOCATED	TICK	TELSTRA	TAS NETWORK	NBN	TASWATER	Stormwater	Power
					✓	✓	✓
		QL-.....	QL-.....	QL-.....	QL- c	QL- c	QL- c

Sketch of work site & assets located

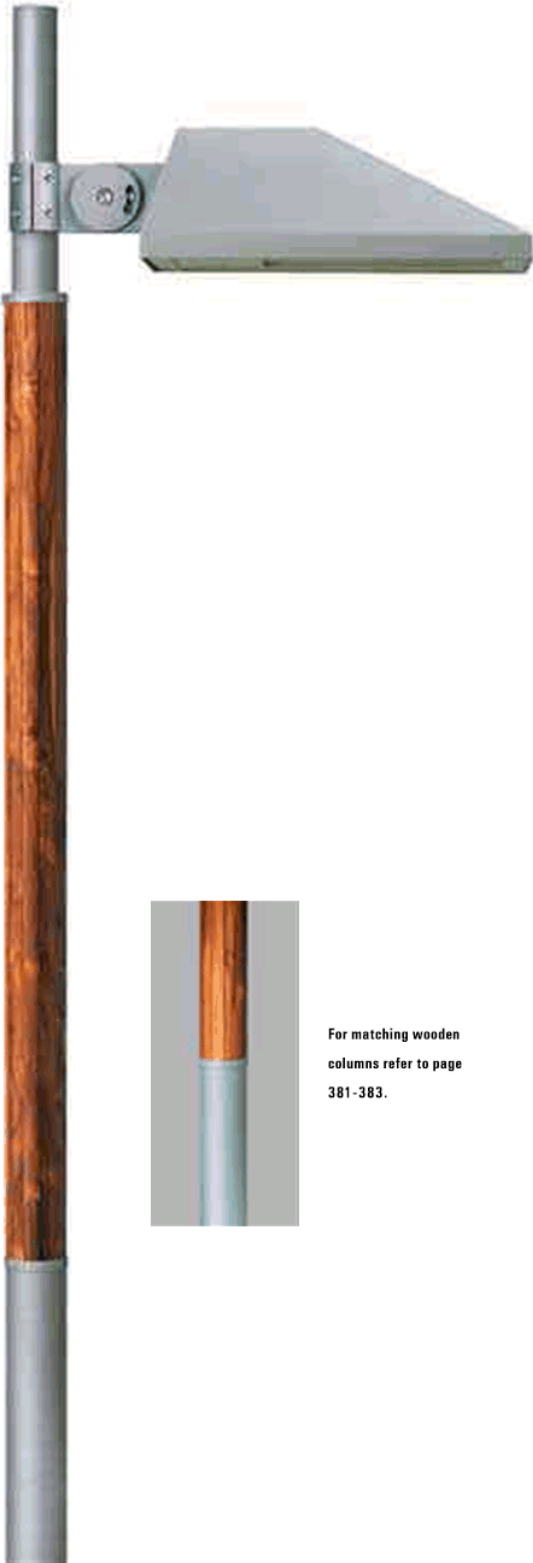
**DISCLAIMER:** Duty of Care. All asset owners guidelines to apply.

Pothole by hand or use Non-destructive Hydro Excavation methods to expose and verify location and depth of all assets.

Comments/Notes: Traced suspected power for lights through car park. Rotted sewer & stormwater in area.

Certified Plant Locator	Customer/Client
Name (PRINT): Chris Johnson	Name (PRINT): Joshua Hnjat
WA #: 61628548	Business Name: Pitt & Sherry
Date: 16-11-21	Date: 16-11-21
Signed: [Signature]	Signed: [Signature]

218



For matching wooden
columns refer to page
381-383.

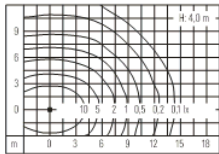
PFL200 [S] SERIES

- Post mounted luminaires
- Streetlighting distribution
- Cut-off glare control
- TC 32 W
- HIT 35-400 W
- HST 70-400 W

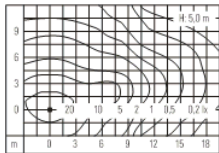
IP66. Marine-grade, die-cast aluminium alloy. 5CE superior corrosion protection including PCS hardware. Powdercoat finish in grey aluminium RAL 9007, black RAL 9004 or white RAL 9016. Silicone rubber gaskets. Safety glass lens. Anodised aluminium reflector. Integral HPF or ECG control gear on hinged and 'no tool' removable tray. LPF versions are available on request.

Recommended mounting height 2,5-12,0 m, depending on lamp type selected. Matching mounting brackets to be ordered separately.

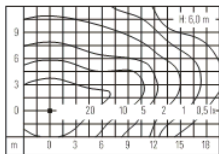
	PFL230 [S]	219
	PFL240 [S]	220
	PFL260 [S]	221
	WALL AND POLE BRACKETS . . .	226-228
	POLE CLAMPS	226-227
	OPTICAL ACCESSORIES	229
	COLUMNS	381
	FACADE AND CEILING WASHLIGHTS . .	120
	AREA FLOODLIGHTS	358



108-0421 [ECG]
PFL230 [S]
TC-TEL 32W/GX24q-3
2400 lm
6,2 kg



108-0422 [ECG]
PFL230 [S]
HIT-CE 35W/G12
3800 lm
6,2 kg



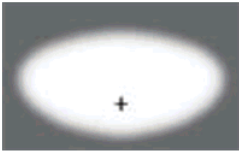
108-0423 [ECG]
PFL230 [S]
HIT-CE 70W/G12
7100 lm
6,2 kg



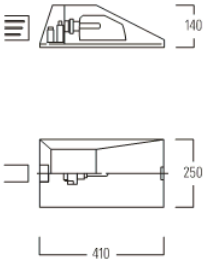
Theresienhöhe. München (D)

PFL230 [S] Streetlighting

219

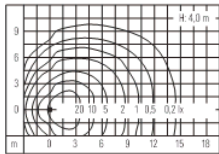


Streetlighting distribution.
Typical illuminance footprint.

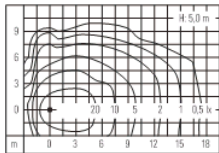


STREET AND AREA LIGHTING PFL230 [S]

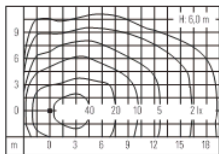
- IP66
- Marine-grade, die-cast aluminium alloy
- 5CE superior corrosion protection
- PCS hardware
- Precision formed anodised aluminium reflector
- Integral control gear
- Detailed description, page 218
- Mounting accessories, page 226-228
- Optical accessories, page 229



Imax: 342 cd/km (40°)
PFL230 [A]
TC-TEL 32W/GX24q-3
2400 lm
6,2 kg



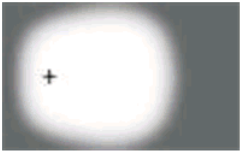
Imax: 413 cd/km (47.5°)
PFL230 [A]
HIT-CE 35W/G12
3800 lm
6,2 kg



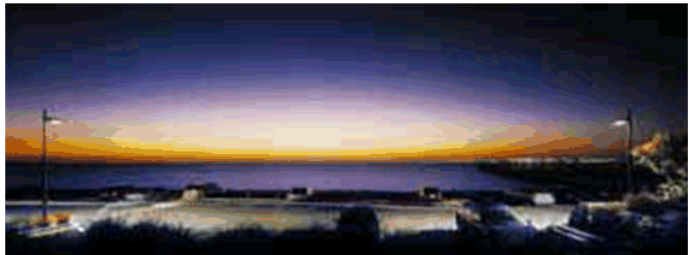
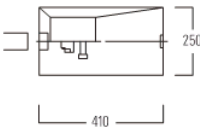
Imax: 443 cd/km (45°)
PFL230 [A]
HIT-CE 70W/G12
7100 lm
6,2 kg

PFL230 [A] Asymmetric 'forward throw'

223



Asymmetric 'forward throw' light distribution. Typical illuminance footprint.



Brighton Beach Car Park, Brighton (AUS)

STREET AND AREA LIGHTING PFL230 [A]

- IP66
- Marine-grade, die-cast aluminium alloy
- 5CE superior corrosion protection
- PCS hardware
- Precision formed anodised aluminium reflector
- Integral control gear
- Detailed description, page 222
- Mounting accessories, page 226-228
- Optical accessories, page 229

Project No.: 3624
 Project Name: Lefroy St Hobart
 Company : Southern Lighting
 Date : 22-Mar-07



WE-EF LIGHTING Pty Ltd
 ACN 064 570 065
 ABN 78 064 570 065
 6 / 13 Downard Street
 Braeside Victoria 3195
 Tel: 03 8587 0444
 Fax: 03 8587 0499
 E-mail: Info.australia@we-ef.com

Purpose Category Lighting Levels	<ul style="list-style-type: none"> To design a new carpark lighting layout, including circulation roadway. P11c Horizontal Minimum 0.7 lx Horizontal Average 3.5 lx Horizontal Uniformity 10:1 Vertical Minimum -
Luminaire/s	<ul style="list-style-type: none"> 108-0423 - PFL230 S.BEAM 70W MH G12 IP66 ALU ECG 108-0426 - PFL230 A.BEAM 70W MH G12 IP66 ALU ECG
Standards	<ul style="list-style-type: none"> AS/NZS 1158.2:2005, AS/NZS 1158.3.1:2005
Design	<ul style="list-style-type: none"> The luminaires are situated as shown on the attached drawings at a mounting height of 4m We have assumed a total Light Loss Factor of 0.8, which is allowable under the standard.
Results	<ol style="list-style-type: none"> The design fulfils the requirements for horizontal illuminance over the area considered as specified. The design will not comply with P11c with the use of 35W lamps. The design does not fulfil the requirements of P11b due to: <ol style="list-style-type: none"> The low lower part of the carpark as shown on the attached drawing. All points must be above 1.5 lx. The amount of points in the two vertical directions which do not comply with the minimum requirement of 1.5 lx. Both points 2 and 3 above can be rectified with the use of more luminaires, which would require the positioning of extra poles around the carpark area.

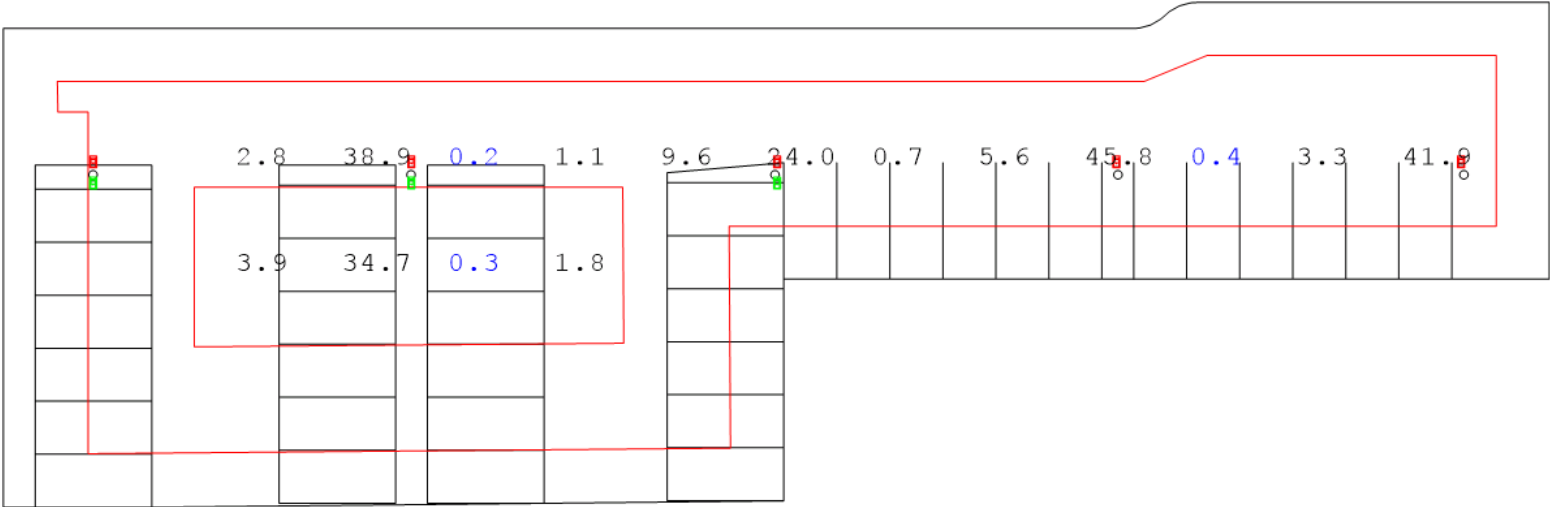
Designed _____



Approved _____



Luminaire Location Summary						
LumNo	Label	X	Y	Z	Orient	Tilt
1	108-0423	4.25	16.25	4	270	0
2	108-0423	19.25	16.25	4	270	0
3	108-0423	52.5	16.25	4	270	0
4	108-0423	68.75	16.25	4	270	0
5	108-0423	36.5	16.25	4	270	0
6	108-0426	4.25	15.25	4	270	0
7	108-0426	19.25	15.25	4	270	0
8	108-0426	36.5	15.25	4	270	0

Numeric Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
vertical west	Illuminance	Lux	12.84	69.4	0.1	128.40	694.00
vertical east	Illuminance	Lux	17.09	65.9	0.2	85.45	329.50
ground	Illuminance	Lux	16.95	89.8	0.7	24.21	128.29

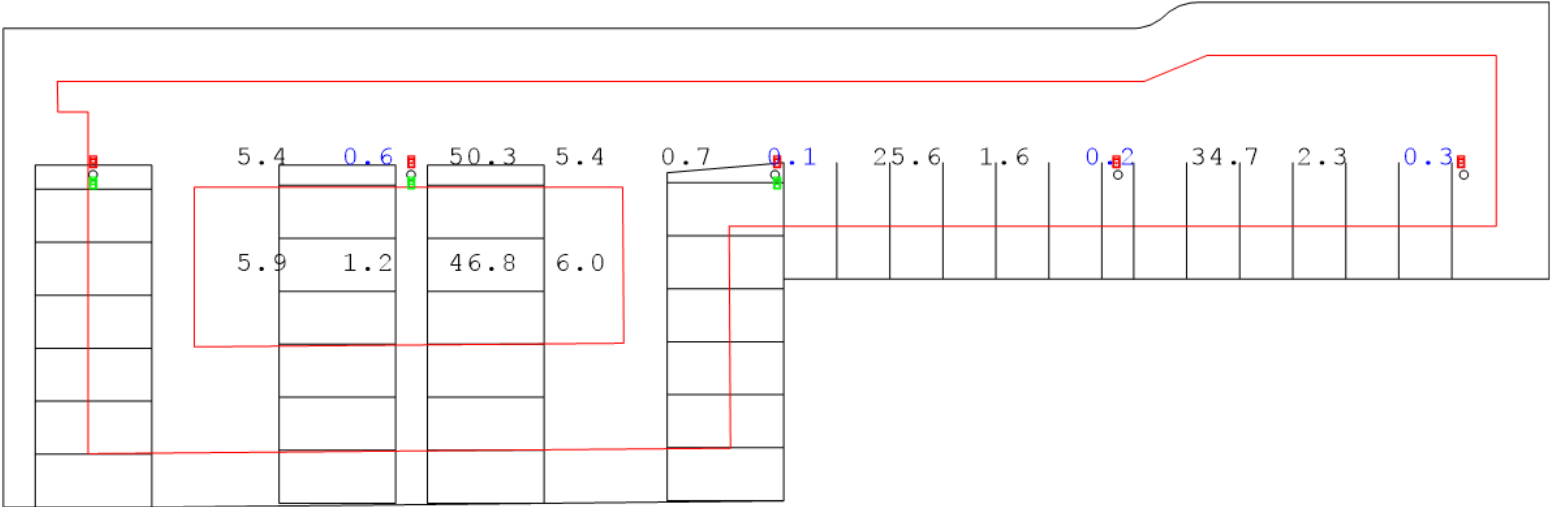


Luminaire Schedule						
Symbol	Qty	Label	Arrangement	Lumens	LLF	Description
	5	108-0423	SINGLE	7100	0.800	PFL230-T_E-70_H[S]
	3	108-0426	SINGLE	7100	0.800	PFL230-T_E-70_H[A]

Luminaire Location Summary						
LumNo	Label	X	Y	Z	Orient	Tilt
1	108-0423	4.25	16.25	4	270	0
2	108-0423	19.25	16.25	4	270	0
3	108-0423	52.5	16.25	4	270	0
4	108-0423	68.75	16.25	4	270	0
5	108-0423	36.5	16.25	4	270	0
6	108-0426	4.25	15.25	4	270	0
7	108-0426	19.25	15.25	4	270	0
8	108-0426	36.5	15.25	4	270	0

Numeric Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
ground	Illuminance	Lux	16.95	89.8	0.7	24.21	128.29
vertical east	Illuminance	Lux	13.44	45.8	0.2	67.20	229.00
vertical west	Illuminance	Lux	11.69	50.3	0.1	116.90	503.00

VERTICAL EAST

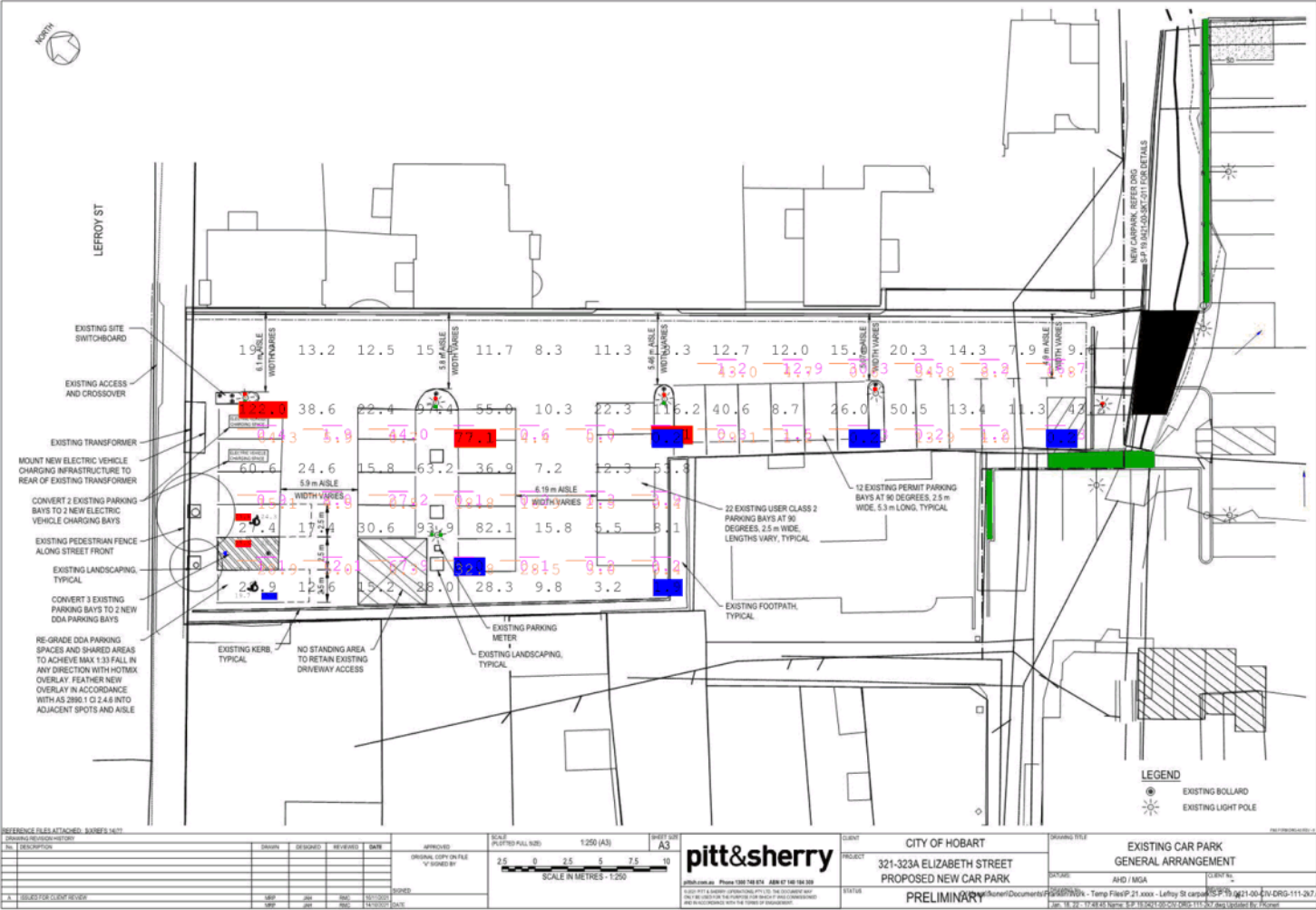


Luminaire Schedule						
Symbol	Qty	Label	Arrangement	Lumens	LLF	Description
	5	108-0423	SINGLE	7100	0.800	PFL230-T_E-70_H[S]
	3	108-0426	SINGLE	7100	0.800	PFL230-T_E-70_H[A]

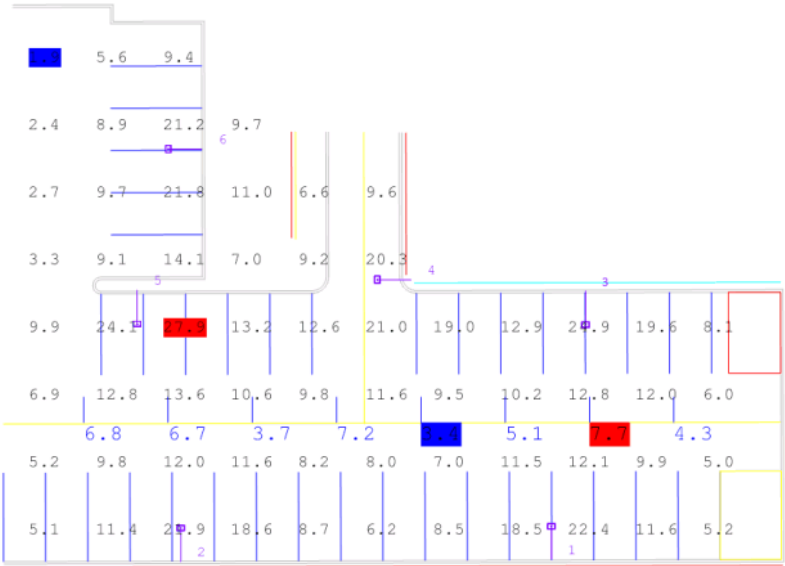
Luminaire Location Summary						
LumNo	Label	X	Y	Z	Orient	Tilt
1	108-0423	4.25	16.25	4	270	0
2	108-0423	19.25	16.25	4	270	0
3	108-0423	52.5	16.25	4	270	0
4	108-0423	68.75	16.25	4	270	0
5	108-0423	36.5	16.25	4	270	0
6	108-0426	4.25	15.25	4	270	0
7	108-0426	19.25	15.25	4	270	0
8	108-0426	36.5	15.25	4	270	0

Numeric Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
ground	Illuminance	Lux	16.95	89.8	0.7	24.21	128.29
vertical east	Illuminance	Lux	13.44	45.8	0.2	67.20	229.00
vertical west	Illuminance	Lux	11.69	50.3	0.1	116.90	503.00


VERTICAL WEST



LEFROY STREET (NEW) CAR PARK LIGHTING - DETAIL DESIGN



Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Max/Avg	Description
Car Park - H	Illuminance	Lux	11.60	27.9	1.9	2.41	Horizontal calculation - entire new area of car park
Car Park - V	Illuminance	Lux	5.61	7.7	3.4	1.37	Vertical calculation - entire new car park

Luminaire Schedule							
Symbol	Qty	Label	Total Lamp Lumens	LLF	Description	Arm	Lum. Watts
	6	We-ef PFL230 - 1	N.A.	0.855	We-ef PFL230 LED R65 optic, 2700K, 36W (108-2495)	1	42

Luminaire Location Summary				
LumNo	Label	Z	Orient	Tilt
1	We-ef PFL230 - 1	4	90	0
2	We-ef PFL230 - 1	4	90	0
3	We-ef PFL230 - 1	4	270	0
4	We-ef PFL230 - 1	4	180	0
5	We-ef PFL230 - 1	4	270	0
6	We-ef PFL230 - 1	4	180	0

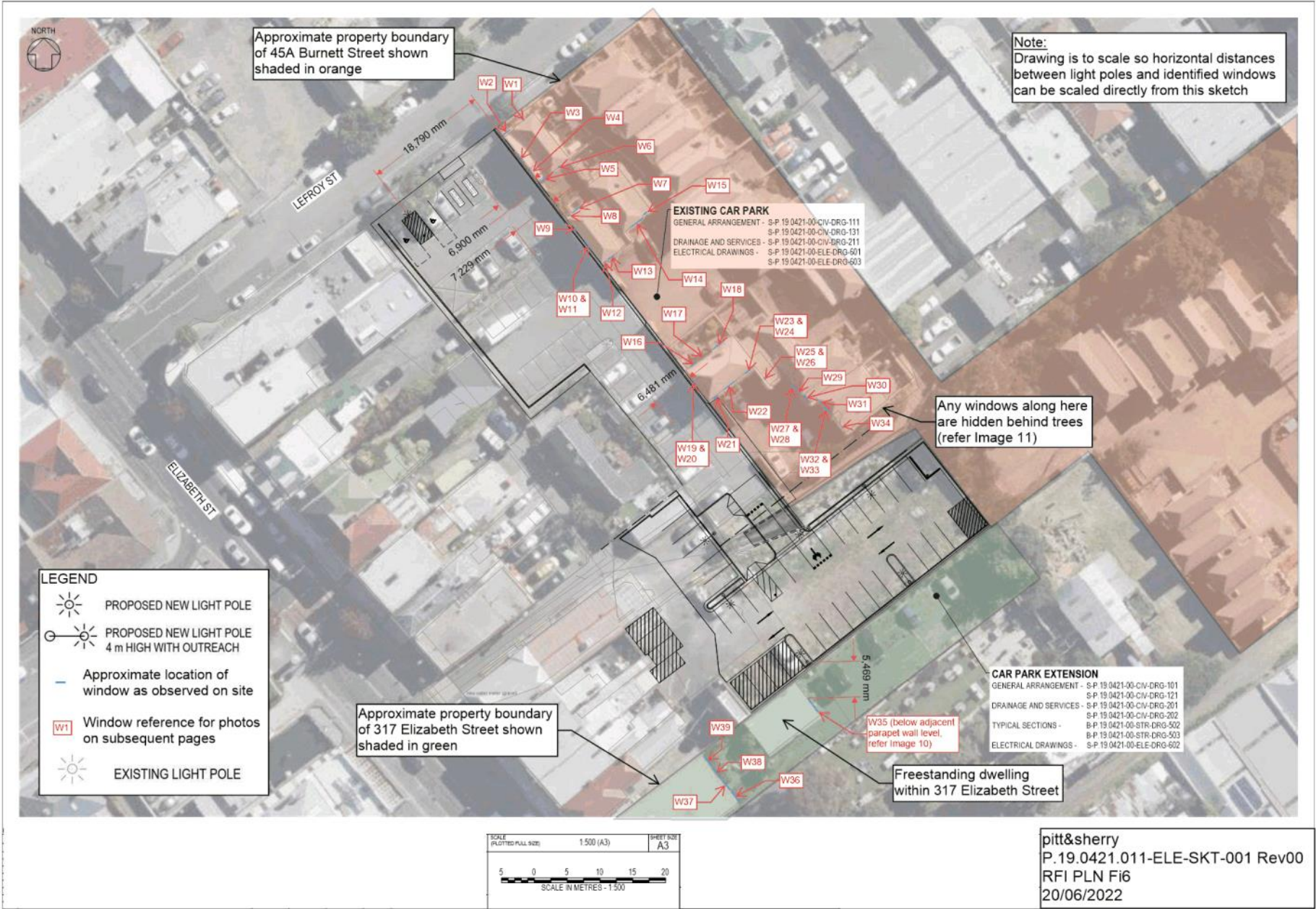




Image 1



Image 2

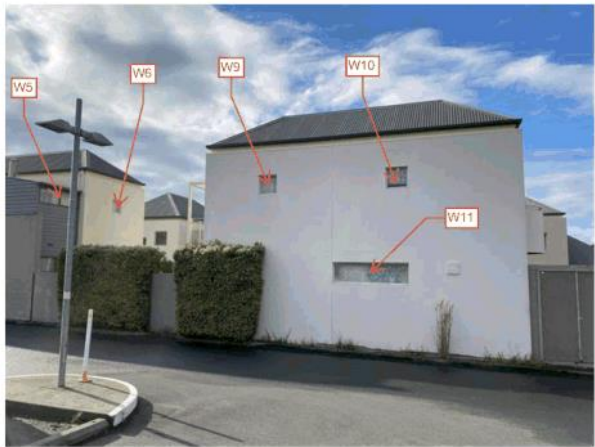


Image 3



Image 4



Image 5



Image 6



Image 7



Image 8



Image 9

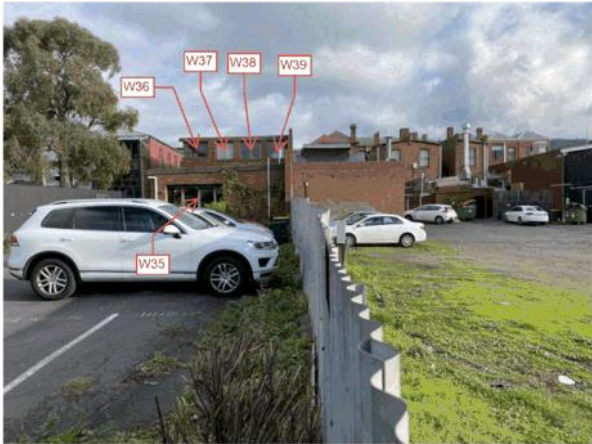


Image 10



Image 11

pitt&sherry

Soil and Water Management Plan

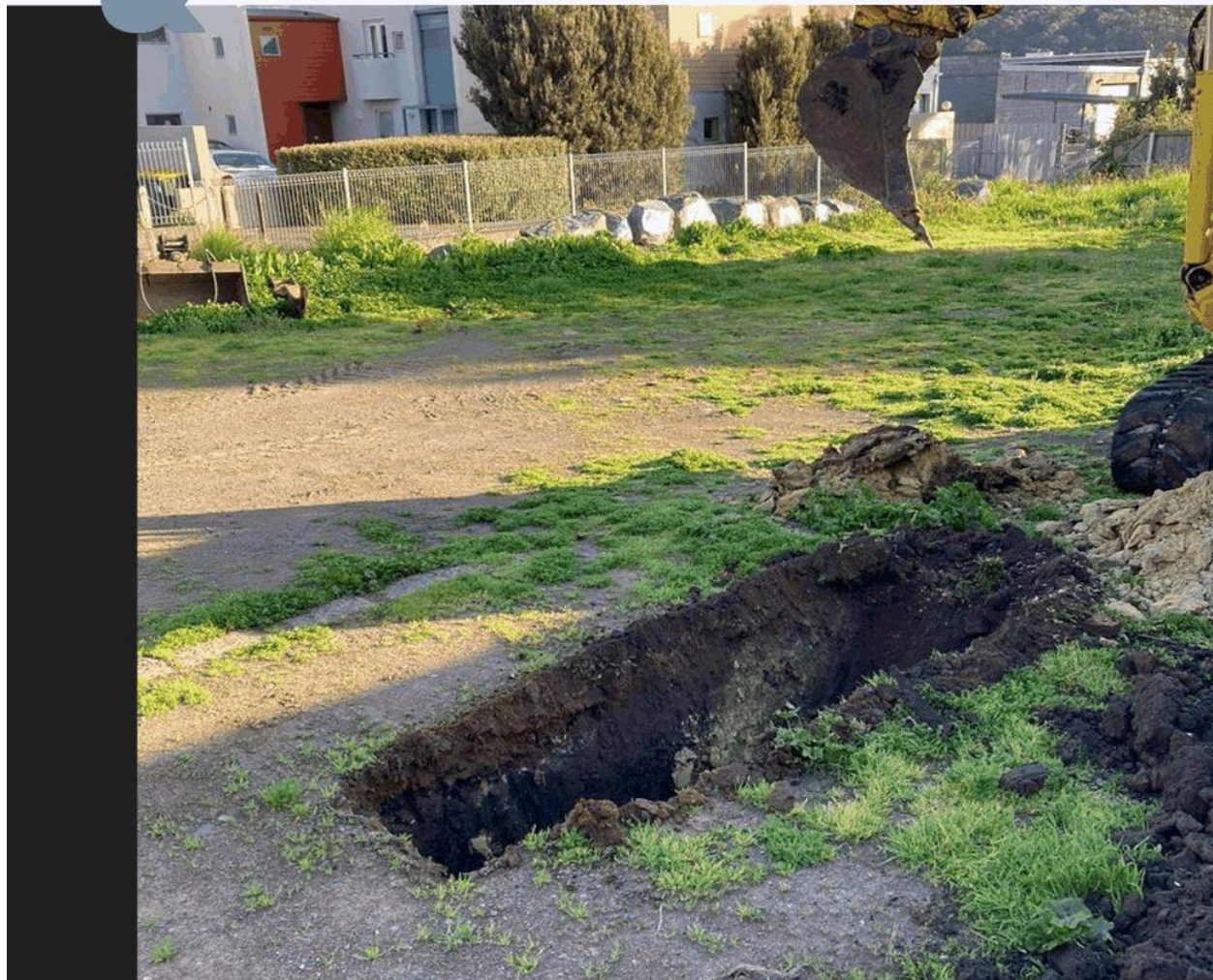
321-323A and 325 Elizabeth Street, North
Hobart

Prepared for
City of Hobart

Client representative
Mr Glenn Doyle

Date
24 May 2022

Rev01



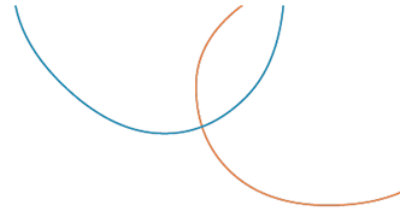


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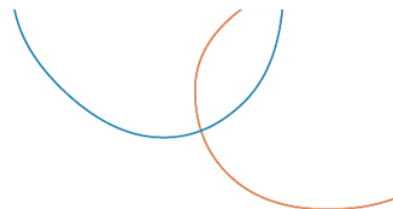
- Appendix A —** Figures
Appendix B — DPIPWE Works Manual
Appendix C — EPA Fact Sheets

Prepared by — Carly Clark			Date — 24 May 2022
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Authorised by — Carly Clark			Date — 24 May 2022

Revision History


Rev No.	Description	Prepared by	Reviewed by	Authorised by	Date
A	Draft for internal review	CC	FKP	CC	06/12/2021
B	Draft for client review	CC	FKP	CC	17/12/2021
00	Issued for Development Application	CC	JH	CC	29/03/2022
01	Revised Section 4 to address Council RFI WCPC1	CC	FKP	CC	24/05/2022

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Abbreviations

Acronym	Description
ACL	Added Contaminant Limit
ACM	Asbestos Containing Material
AHD	Australian Height Datum
ANZECC	Australian and New Zealand Environment and Conservation Council <i>Guidelines for Fresh and Marine Water Quality 2000</i>
ANZG	Australian and New Zealand <i>Guidelines for Fresh and Marine Water Quality 2018</i>
As	Arsenic
ASC NEPM	<i>National Environment Protection (Assessment of Site Contamination) Measure 1999, amended 2013</i>
ASS	Acid Sulfate Soils
BaP	Benzo(a)pyrene
BDR	Building Demolition Rubble
BTEXN	Benzene, Toluene, Ethylbenzene, Xylenes and Naphthalene
Cd	Cadmium
CEMP	Construction Environment Management Plan
CoC	Chain of Custody
CoPC	Contaminants of Potential Concern
Cr	Chromium
CSM	Conceptual Site Model
Cu	Copper
DDA	<i>Disability Discrimination Act 1992</i>
DGV	Default Guideline Value(s)
DPIPWE	Department of Primary Industry, Water and Environment (Tasmania)
EPA	Environment Protection Authority (Tasmania)
ESA	Environmental Site Assessment (pitt&sherry, 2021)
ESL	Ecological Screening Level
HCC	Hobart City Council
Hg	Mercury
IB105	EPA Information Bulletin No. 105 <i>Classification and Management of Contaminated Soil for Disposal, Version 3, 2018</i>
LISTmap	Land Information System of Tasmania Interactive Map



Acronym	Description
LOR	Laboratory Limit of Reporting
m bgl	Metres Below Ground Level
NATA	National Association of Testing Authorities
Ni	Nickel
PAH	Polycyclic Aromatic Hydrocarbons
Pb	Lead
PCLC	Potentially Contaminated Land Code (under the <i>Hobart Interim Planning Scheme 2015</i>)
PFAS	Per- and Poly-fluoroalkyl Substances
PPE	Personal Protective Equipment
Property	The whole of the land at 321-323A and 325 Elizabeth Street, North Hobart, Tasmania
QA/QC	Quality Assurance / Quality Control
Site	Rear of the Property at 321-323A and 325 Elizabeth Street, North Hobart, Tasmania, as shown in Figure 1 (Appendix A)
SWMP	Soil and Water Management Plan
SWS	Southern Waste Solutions
TPH	Total Petroleum Hydrocarbons
VOCs	Volatile Organic Compounds
WCPC	Waterways and Coastal Protection Code (under the <i>Hobart Interim Planning Scheme 2015</i>)
Zn	Zinc



1. Introduction

1.1 Background

Hobart City Council (HCC) has signed a lease agreement with the owners of 321-323A and 325 Elizabeth Street, North Hobart, Tasmania (the 'Property') with the intention of developing the rear of the Property (the 'Site') into a public car park. The car park is proposed to serve as an extension to the existing Lefroy Street car park, owned by HCC, with a bridge to be provided as a link across the Providence Rivulet, between the existing and proposed car parks. The proposed car park development area is referred to as the 'Site' as opposed to the 'Property' which refers to the entirety of the land titles.

Given the historic potentially-contaminating activities within and surrounding the Property, and the location of the Site adjacent to Providence Rivulet, the following Codes apply to development on the Property, under the *Hobart Interim Planning Scheme 2015*:

- Potentially Contaminated Land Code (PCLC); and
- Waterways and Coastal Protection Code (WCPC).

To address the requirements of the PCLC and the WCPC, pitt&sherry completed an Environmental Site Assessment¹ (ESA). The ESA (pitt&sherry, 2021) incorporated a site history investigation, including a review of previous documentation relating to a contamination investigation on the Property, and a desktop natural values assessment, together with targeted intrusive investigations (i.e. sampling) across the Site.

The findings of the ESA (pitt&sherry, 2021) demonstrate that:

- The Site is suitable for the intended use as a car park – the Site is suitable for continued residential land use (based on zoning) in terms of the PCLC (Clause 2.5, Performance Criteria P1(c)), provided the Site surface is sealed as a component of the redevelopment or contaminated soil is removed from Site
- Excavation does not adversely impact on human health or the environment – the Site is suitable for the proposed redevelopment in terms of the PCLC (Clause 2.6.2, Performance Criteria P1(b)), provided the requirements of a Soil and Water Management Plan (SWMP), or similar, are implemented during excavation works; and
- Development works do not adversely impact on natural values – the Site is suitable for the proposed redevelopment in terms of the WCPC (Clause 11.7.1, Performance Criteria P1), provided the requirements of a SWMP, or similar, are implemented during excavation works.

The Property and Site locations are shown on Figure 1 (Appendix A).

1.2 Proposed redevelopment works

The vacant land to the rear of the Property is proposed to be developed into an extension of the existing Lefroy Street car park owned by HCC. Property works will involve a new bridge structure across the Providence Rivulet, pavement works, lighting, closed-circuit television (CCTV) capabilities, kerb and channel, landscaping and a rain garden.

Works carried out to the existing Lefroy Street car park include the addition of two *Disability Discrimination Act 1992* (DDA) compliant parking spaces, local re-grading of the car park to achieve DDA compliance, two electric vehicle charging stations, relocating the existing rain garden and upgrades to the existing landscaping.

¹ *Environmental Site Assessment, 321-323A Elizabeth Street, North Hobart*, pitt&sherry, 17 December 2021 (ESA, pitt&sherry, 2021)



1.3 Objective

The objective of this SWMP is to provide a framework for the management of excavated materials from the Site to minimise any risks to human health and/or the environment from contamination during earthworks. Specifically, the SWMP is to address Clause 11.7.1, Performance Criteria P1 of the WCPC, including management of surplus waste soils.

The performance criteria (P1) under Clause 11.7.1 Use Standard of the PCLC states the following [applicability to the Site is included in brackets]:

Building and works within a Waterway and Coastal Protection Area must satisfy all of the following:

- (a) *avoid or mitigate impact on natural values* [minimal natural values]
- (b) *mitigate and manage adverse erosion, sedimentation and runoff impacts on natural values* [minimal natural values]
- (c) *Avoid or mitigate impacts on riparian or littoral vegetation* [applicable]
- (d) *Maintain natural streambank and streambed condition, (where it exists)* [applicable]
- (e) *maintain in-stream natural habitat, such as fallen logs, bank overhangs, rocks and trailing vegetation* [applicable]
- (f) *avoid significantly impeding natural flow and drainage* [applicable]
- (g) *maintain fish passage (where applicable)* [unlikely fish passage]
- (h) *avoid landfilling of wetlands* [no wetlands]
- (i) *works are undertaken generally in accordance with 'Wetlands and Waterways Works Manual' (DPIWE, 2003) and 'Tasmanian Coastal Works Manual' (DPIPWE, Page and Thorp, 2010), and the unnecessary use of machinery within watercourses or wetlands is avoided* [applicable]

The SWMP has been prepared in general accordance with the Environmental Protection Authority (EPA) Tasmania's Soil & Water Management Plans Fact Sheets (EPA Fact Sheets)² and the Wetlands and Waterways Works Manual (DPIPWE Work Manual)³. The EPA Fact Sheets represent current best practice and provide a practical guide to soil and water management to prevent sedimentation into waterways. They are divided into:

1. Erosion control measures – aimed at preventing soil movement and reducing soil mobilisation by rainfall or runoff; and
2. Sediment control measures – aimed at capturing eroded soil from the runoff preventing it from leaving the Site.

This SWMP has been both written and reviewed by a Certified Environmental Practitioner Site Contamination Specialist (CEnvP SC) under the Environment Institute of Australia and New Zealand (EIANZ).

1.4 Boundary of this SWMP

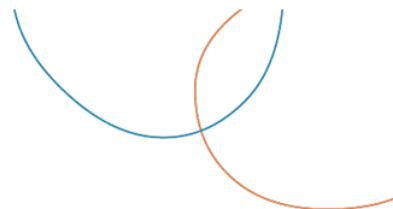
The boundary of intrusive investigations on the Property to date is limited to the Site area only.

This SWMP pertains to the Site only.

The Property and Site locations are shown on Figure 1 (Appendix A).

² <https://epa.tas.gov.au/epa/water/stormwater/soil-and-water-management-on-building-sites>

³ *Wetlands and Waterways Works Manual*, Department of Primary Industry, Water and Environment, 2003 (DPIPWE Works Manual)



1.5 Responsibilities

1.5.1 HCC management

Key responsibilities include:

- Ensure priorities are set, and implementation timeframes are clear
- Ensure induction and training are undertaken where required
- Provide earthmoving contractors with a copy of this SWMP
- Ensure contractual requirements clearly state the contractors must implement the SWMP for works on Site
- Review analytical results and provide approval for onsite reuse of any excavated soils, where required
- Audit earth moving contractors' implementation of this SWMP and their associated procedures; and
- Instigate updates to the SWMP when new information is available which may require management measures and priorities to be revised.

1.5.2 Earthmoving contractors

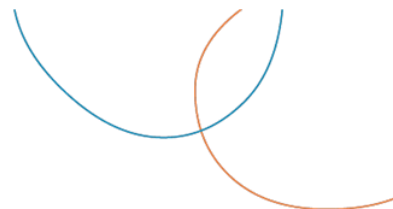
Key responsibilities include:

- Familiarise themselves with this SWMP
- Nominate a person responsible for the implementation of the SWMP
- Develop and/or modify procedures to address the requirements of the SWMP; maintain erosion and sediment control measures
- Prepare a Construction Environment Management Plan (CEMP), or equivalent, incorporating the requirements of this SWMP, for approval by HCC prior to commencing works
- Ensure all of their workers are familiar with the procedures, and are trained in the required environmental and safety management measures
- Implement all applicable components of the SWMP, and apply best practice environmental and safety management procedures to avoid environmental harm and minimise safety risks
- Notify HCC of any incidents; and
- Update and improve implementation procedures when necessary.

1.5.3 Authorities

Key responsibilities include:

- EPA – provide approval for disposal of contaminated soil, where required.



1.6 Limitations

This SWMP has been developed based on:

- Findings of the ESA (pitt&sherry, 2021) – undertaken to guide soil and water management practices during excavation and potential onsite reuse of soils; and
- Preliminary design drawings showing proposed extent of works.

and in general accordance with the DPIPWE Works Manual (Appendix B) and EPA Fact Sheets including (Appendix D):

- Soil & Water Management on Standard Building & Construction Sites (Fact Sheet 2)
- Soil & Water Management Plans (Fact Sheet 3)
- Dispersive Soils – High Risk of Tunnel Erosion (Fact Sheet 4)
- Minimise Soil Disturbance (Fact Sheet 5)
- Divert Up-slope Water (Fact Sheet 7)
- Erosion Control Mats & Blankets (Fact Sheet 8)
- Protect Service Trenches & Stockpiles (Fact Sheet 9)
- Stabilised Site Access (Fact Sheet 12)
- Sediment Fences & Fibre Rolls (Fact Sheet 14)
- Protection of Stormwater Pits (Fact Sheet 15); and
- Dust Control (Fact Sheet 18).

Note, Fact Sheets 1, 6, 10, 11, 13, 16, 17 and 19 may also be relevant and the earthmoving contractor should ensure all relevant aspects have been assessed and addressed in their procedures to minimise risks to Providence Rivulet.

This SWMP is not intended to provide:

- Groundwater management requirements: earthworks could encounter shallow/perched groundwater which may be impacted by contaminants of potential concern (CoPC); groundwater management provisions are to be addressed in the contractors' CEMP (or equivalent); and
- Safety measures: relevant safety measures included in the SWMP are to be incorporated into the contractor's safety plan (or equivalent) for their works.



2. Location information

2.1 Environmental setting

Location details are summarised in Table 1.

Table 1: Location details (ESA; pitt&sherry, 2021)

Item	Detail
Property addresses	<ul style="list-style-type: none"> 321-323A Elizabeth Street, North Hobart, Tasmania, 7000; and 325 Elizabeth Street, North Hobart, Tasmania, 7000.
Property identification	<ul style="list-style-type: none"> 5662281; and 5662302.
Title references	<ul style="list-style-type: none"> 137808/1 and 137808/2; and 137807/1 and 176661/1.
Zoning	<p>Under the <i>Hobart Interim Planning Scheme 2015</i>, the:</p> <ul style="list-style-type: none"> Front portion of the Property is zoned 'General Business' Rear Portion of the Property, including the Site are zoned 'Inner Residential' <p>Planning overlays for the Property include:</p> <ul style="list-style-type: none"> Royal Hobart Hospital Helipad Airspace Specific Area Plan North Hobart Specific Area Plan; and Heritage Precinct (Heritage Number NH6).
Regional setting	<ul style="list-style-type: none"> The Property is located in North Hobart on relatively flat land that slopes gently to the north-east Providence Rivulet is adjacent to the northern Site boundary, separated from the Site by a retaining wall Current neighbouring land uses include: <ul style="list-style-type: none"> North – car park East – residential South – car park; and West – commercial premises (restaurant, hairdresser, brewery), with Elizabeth Street further to the west.
Surface water, hydrology and drainage	<ul style="list-style-type: none"> Runoff from the Property and the Site (which is predominantly unpaved) is anticipated to flow to the north and north-east into the Providence Rivulet stormwater catchment or recharge shallow groundwater The nearest surface water body is the Providence Rivulet, adjacent to the northern boundary of the Site; and The Providence Rivulet discharges to the Derwent Estuary to the north-east.
Groundwater and hydrogeology	<ul style="list-style-type: none"> Depth to groundwater is not known; no groundwater was intersected to a maximum depth of 1.6 metres below ground level (m bgl) (pitt&sherry, 2021) The base of Providence Rivulet is approximately 1.1 to 1.8 m lower than the Site surface Shallow groundwater beneath the Property is expected to discharge to the adjacent Providence Rivulet; and There are no registered groundwater wells within 1 km of the Property.

Item	Detail
Topography	<ul style="list-style-type: none"> The Property is generally flat with a gentle slope to the north-east; and The Property elevation is approximately 45 m Australian Height Datum (AHD).
Geology and soil	<p>ESA (pitt&sherry, 2021) test pit profiles suggest the soil profile is generally:</p> <ul style="list-style-type: none"> 0 to 0.5 m bgl – topsoil and silty clay (some fill), underlain by 0.5-1.1 m bgl – clay, underlain by; and 1.1-1.6 m bgl – clayey sand. <p>Geology (LISTmap):</p> <ul style="list-style-type: none"> The northern half of the Property is underlain by Quaternary Age Cenozoic cover sequences (Qa) consisting of alluvial gravel, sand and clay; and The southern half of the Property is underlain by Permian – Triassic Age Tasmanian Basin (Rv) consisting of undifferentiated volcanoclastic, quartz-rich lithic and quartzose sandstone, siltstone, mudstone, carbonaceous beds and coal seams. <p>Soils:</p> <ul style="list-style-type: none"> Undefined soil developed on Triassic sandstone bedrock and colluvium on undulating to rolling (3-32%) land (LISTmap) Hilly: Gentle to moderate, sometimes stony, slopes of deep dark clays (Ug5.14 and Ug5.13) with smaller areas of dark friable earths (Gn3.43) and minor areas of (Dr2.12 and Dr2.13); also steep slopes often stony, of dark clays (Ug5.12) (Atlas of Australian Soils); and The Property is mapped as having an extremely low probability of encountering acid sulfate soils (ASS; 1-5% chance of occurrence); this was also confirmed by the profile encountered during test pitting (pitt&sherry, 2021).
Ecology	<ul style="list-style-type: none"> Flora – one threatened flora species has been mapped or recorded within 500 m of the Property; none within the Property Fauna – fifteen threatened fauna species may occur within 500 m of the Property (based on range boundaries) Raptor nests or sightings – four recorded within 500 m of the Property; three may occur within 500 m of the Property (based on range boundaries); none within the Property; and Wetlands – no Ramsar Wetlands within the 1 km of the Property.
Vegetation	<ul style="list-style-type: none"> The Property is within modified land urban areas (FUR); and One threatened vegetation community (Eucalyptus globulus dry forest and woodland; DGL) is present approximately 550m to the north-east of the Property.
Weeds	<ul style="list-style-type: none"> Site inspection identified weeds present throughout the Site including blackberry and gorse (declared weeds) Five <i>Tasmanian Management Act 1999</i> weeds have been reported within 500 m of the Property (last record was 1926); none within the Property; and No Priority Weeds have been reported within 500 m of the Property.
Natural hazards	<ul style="list-style-type: none"> Flood – the Property is not subject to flooding Coastal inundation – the Property is not subject to coastal inundation Coastal erosion – the Property is not subject to coastal erosion Landslide – the Property is not within a landslide-prone area; and Bushfire – the Property and immediate surrounds are not within a bushfire prone area.
Heritage	The Property is not listed on the Tasmanian Heritage Register
Municipal authority	Hobart City Council (HCC)



3. Contamination information

3.1 Sources of contamination

The site history component of the ESA (pitt&sherry, 2021), identified that potential sources of contamination on the Site are likely to relate to:

- Former onsite activities including sale of used motor cars and trucks or upholsters in the 1960's
- Presence of fill material containing concrete, broken bricks, sand and gravel; such materials are referred to as building demolition rubble (BDR) and are often associated with asbestos-containing materials (ACM), although none was noted during the Site inspection and test pitting (pitt&sherry, 2021)
- A TasWater sewer main bisects the Site (LISTmap); and
- Surrounding historical land uses including fuel storage / supply / garage; auto wreckers; scrap metal merchants; printers; dry cleaners; paint enamel varnish / stain manufacturers / importers / distributors; upholsters.

3.2 Identified contaminated materials

Based on the ESA (pitt&sherry, 2021), identified contaminated materials include:

- Soils – composed of topsoil, blue metal, and coal intermixed with clay to a depth of approximately 0.7 m bgl; and
- Refuse – observed refuse on the surface, which although not 'contaminating', may litter Providence Rivulet if not managed during excavations.

3.3 Contaminants of potential concern

Based on the ESA (pitt&sherry, 2021), identified contaminants of potential concern (CoPC) include:

- Chemical contaminants
 - Human health perspective
 - **Total coliforms** in soil / fill material above the laboratory limit of reporting (LOR)
 - Ecological perspective
 - **Benzo(a)pyrene (BaP)** in soil / fill material exceeded the ASC NEPM⁴ ecological screening level (ESL) for urban residential / public open space land use (based on zoning)
 - **Zinc (Zn)** in soil / fill material exceeded the most conservative calculated Site-specific ASC NEPM added contaminant limit (ACL) for urban residential / public open space land use (based on zoning)
- Contaminants associated with BDR; and
- ACM (although none was noted).

⁴ National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended 2013 (ASC NEPM)



3.4 Sensitive receptors

Potential receptors identified in the ESA (pitt&sherry, 2021) which may be exposed to identified CoPC include:

- Human receptors:
 - Current Site users (users of the unsealed area for car parking)
 - Future Site users (users of the redeveloped car park)
 - Future Site users under a residential scenario (allowable under the zoning)
 - Excavation and maintenance workers (exposure to be managed under a SWMP, or similar)
- Ecological receptors:
 - Terrestrial fauna and flora onsite and offsite (highly modified and developed area); and
 - Aquatic flora and fauna offsite (highly modified catchment along Providence Rivulet).

Any change in proposed Site use which allows direct access to the soil by Site users (e.g. from car parking to residential use with access to soil) should be considered a higher risk use and will likely require mitigation measures to prevent exposure to identified Site contamination, unless the identified contaminated soil materials (Section 3.2) are removed from Site during the proposed earthworks.

3.5 Conceptual site model

A preliminary Conceptual Site Model (CSM) was developed for the identified contaminants in soil and water as a component of the ESA (pitt&sherry, 2021), to represent the relative risks of any identified potentially complete source-pathway-receptor linkages.

None of the scenarios were assessed as 'unacceptable'; they were all classified as:

- No risk
- Low risk; or
- Low risk with management measures.

Human health risk:

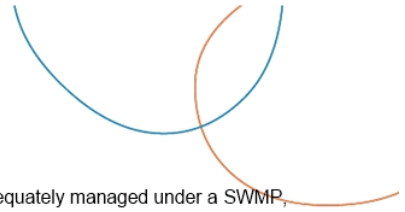
The level of contamination identified in soil was assessed to represent a:

- **Low to very low risk** to current Site users
- **No to very low risk** to future Site users under a car park use
- **Possible risk** to future Site users under a residential use with access to soil (allowable under the zoning); and
- **Low risk** to excavation and maintenance workers.

Given that:

- The Site is to be used for car parking – no likely contact with soils; and
- Soils will either be removed or will be sealed over – no possible contact.

Possible **future** soil access (for residential use) will require **mitigation measures** to prevent potential exposure if contaminated soils (Section 3.2) are not removed during these earthworks. Potential exposure to coliforms and work health and safety risks will be managed by the excavation contractor.



It was recommended that the risk to excavation and maintenance workers can be adequately managed under a SWMP, or similar.

Ecological risk:

The level of contamination identified in soil was assessed to represent a **low risk**, except under two scenarios:

- During earthworks – risks can be adequately managed under a SWMP, or similar; and
- Future residential development with access to soil (allowable under the zoning) – would require removal of identified contaminated soils or restricted access to the soils.

For the purposes of the proposed development, it was recommended that potential human health exposure risks and environmental impact risks be managed under a SWMP, or similar.

3.6 Preliminary waste classification

Based on the ESA (pitt&sherry, 2021), the highest metals, BaP (and other polycyclic aromatic hydrocarbons; PAHs) and total coliform concentrations are all associated with topsoils, blue-metal fill, and clay mixed with coal. These horizons occur from surface to depths ranging from 0.2 to 0.7 m bgl.

When considering average total concentrations, however, the Site material sampled to a depth of 1.6 m bgl would be classified as Level 2 – low-level contaminated soil under IB105⁵, based on **BaP** concentrations. This is due to high concentrations from just a few samples which are skewing the data.

It is recommended that waste soils be segregated during excavation works, in order to minimise the amount of Level 2 waste soil material, which will result in lower landfill disposal costs, it will allow clean soils to be reused or disposed more affordably as Level 1 – fill material.

Furthermore, removal of all of the topsoil, blue metal, and coal intermixed with clay within the Site, will result in remediating the Site to a level which is likely to meet ASC NEPM residential (based on zoning) criteria.

To achieve this, all of the topsoils, blue-metal fill, and clay mixed with coal will need to be excavated and stockpiled separately for disposal as Level 2 – low-level contaminated soil, and all other excavated soils should be excavated and stockpiled separately for reuse on Site or disposed as Level 1 – fill material.

The Level 2 soils are predominantly characterised by:

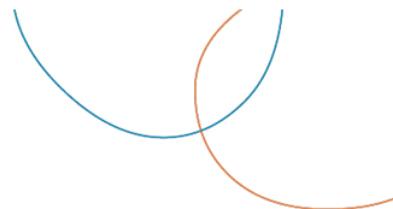
- Depths from surface to a maximum of approximately 0.7 m; and
- Composed of topsoil, blue metal, and coal intermixed with clay.

Level 2 soils should be disposed as low-level contaminated soil, by a licensed controlled waste disposal contractor to a landfill licensed to receive Level 2 – low-level contaminated soil (e.g. Copping B-Cell). EPA approval for disposal is required.

All other soils can either be reused on Site or can be disposed of as Level 1 – fill material at the local municipal landfill (e.g. McRobies Gully Waste Management Centre).

Refer to Section 0 for additional detail.

⁵ Information Bulletin No. 105 *Classification and Management of Contaminated Soil for Disposal*, Environment Protection Authority Tasmania, 2018 (IB105)



3.7 Surface water baseline

Based on the ESA (pitt&sherry, 2021), identified CoPC within the surface water of Providence Rivulet include:

- Human health perspective
 - **BaP** in surface water potentially exceeded the ANZG⁶ freshwater default guideline value (DGV; 95% of species protection)
- Ecological perspective
 - **Copper (Cu)** in surface water exceeded the ANZG freshwater DGV (95% of species protection); and
 - **Zn** in surface water exceeded the ANZG freshwater DGV (95% of species protection).

The surface water results from Providence Rivulet provide a baseline for potential water testing during / after earthworks.

3.8 Unexpected contamination

Unexpected contamination is possible during excavation works.

For suspected contamination not covered in the SWMP, advice should be sought from an environmental practitioner with experience in contaminated land assessments.

⁶ Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2018



4. Excavation and earthworks management

Any excavation earthworks and disturbance of existing soils is to be undertaken in accordance with the requirements of Section 4 (this section) due to the potential for soils to be impacted with BaP, total coliforms and heavy metals (particularly Cu and Zn).

Based on the ESA (pitt&sherry, 2021), there are two main risks during proposed earthworks:

1. Site erosion and sediment-laden runoff (i.e. stormwater) entering Providence Rivulet; and
2. Debris (i.e. soils and other wastes) entering Providence Rivulet (via stormwater, windborne, or displacement).

Management measures in this SWMP do not address all aspects of worker or public safety; safe work methods are the responsibility of the contractor undertaking the excavation works.

The following components are discussed:

- Personal protective equipment – Section 4.1
- Planning for excavation and earthworks – Section 0
- Excavated soil management procedure – Section 0
- Waste classification procedure – Section 4.4; and
- Stormwater management procedure – Section 4.5

4.1 Personal protective equipment

Standard personal protective equipment (PPE) includes:

- High visibility long sleeved shirt / vest
- Long legged pants
- Steel capped boots
- Hard hat; and
- Gloves.

Ensure PPE is effective and is fit for purpose by:

- Limiting exposure to contaminated soils
- Appropriately cleaning contaminated PPE (e.g. commercial laundering); and
- Removing significant visible soil prior to removal of PPE from the Site.



4.2 Planning for excavation and earthworks

Prior to commencing Site disturbance works consider the following:

- Do not commence Site works until all necessary permits, licences and/or approvals have been obtained; refer to Environmental Best Practice Guideline 1, DPIPWE Works Manual
- Schedule earthworks in phases to minimise the areas of exposed soils; where possible, avoid carrying out excavation works, or leaving loose soils exposed prior to and during heavy rains and/or strong winds; refer to Environmental Best Practice Guideline 2, DPIPWE Works Manual
- Consider riparian⁷ vegetation along the banks of Providence Rivulet and maintain vegetation cover; riparian vegetation consists predominantly of noxious weeds, removal of these and replacement with suitable natives would improve the vegetation, ensuring that erosion does not occur in the process; refer to Environmental Best Practice Guideline 7, DPIPWE Works Manual
- Select a single, stabilised Site access point; refer to Fact Sheet 12
- Designate an appropriate area for:
 - Containing (ideally within skip bins or similar) excavated topsoils, blue-metal fill, and clay mixed with coal to depths of around 0.7 m bgl
 - Stockpiling excavated materials from below 0.7 m bgl
- Determine if the soils are dispersive or sodic (i.e. soils with >6% exchangeable sodium); soil dispersion can result in tunnel erosion; refer to EPA Fact Sheet 4 if soils are dispersive
- Restrict vehicles and equipment to designated areas
- Avoid earthmoving equipment within Providence Rivulet; refer to Environmental Best Practice Guideline 3, DPIPWE Works Manual
- Provide adequate spill kits onsite
- Provide a minimum of two floating booms downstream within Providence Rivulet, spaced apart by at least 5 m; and
- Ensure safety measures are in place and all workers are aware of potential contamination risks and are prepared.

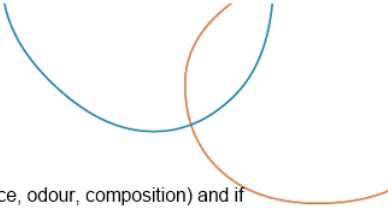
⁷ Riparian zones are areas of land that adjoin, influence or are influenced by a body of water



4.3 Excavated soil management procedure


The procedure to be followed when conducting earthworks and handling excavated soils at the Site is outlined below. Where required, engage or obtain advice from a qualified and experienced contaminated land practitioner.

- Ensure all earthmoving equipment is clean prior to entering the Site
- Wear appropriate PPE (Section 4.1); additional task-specific PPE (i.e. safety glasses) may be required
- Plan excavation and earthworks (Section 0)
- Minimise the active excavation area and minimise the time excavations are left open
- Where steep excavation is carried out, adjacent to Providence Rivulet, provide a bund above the excavation area to limit surface flow onto the excavated area (refer to Section 4.5)
- Stabilise areas of exposed soil (e.g. install erosion control blankets, mats, etc.); refer to Fact Sheet 8
- Install erosion and sediment control measures at the low end of the Site, adjacent to Providence Rivulet (e.g. sediment fences, fibre rolls); refer to Fact Sheet 14 and Environmental Best Practice Guideline 3, DPIPW Works Manual
- Manage stormwater in accordance with Section 4.5
- Monitor erosion and sediment control measures as outlined below, and maintain to ensure effective operation
 - Daily during active earthworks
 - Before forecast heavy rain
 - After periods of heavy rain
- Maintain the natural streambank and streambed condition (where it exists); there is no natural streambank, instead there is a concrete retaining wall on one side and a bluestone boulders retaining wall on the other; some of the streambed is concreted or consists of slabs of bedrock
- Maintain in-stream natural habitat, such as fallen logs, bank overhangs, rocks and trailing vegetation; there are no fallen logs; the bank overhangs, rocks and trailing vegetation are all man-made and weed species
- Avoid or minimise worker contact with soils / sediments; if there is contact, wash affected area with clean water; wash hands after any Site works and prior to eating / drinking / smoking
- Determine appropriate testing regime for the material to be excavated (i.e. in-situ or ex-situ), refer to Section 4.4
 - For in-situ sampling requirements refer to Section 0
 - For ex-situ sampling requirements refer to Section 4.4.2
- For ex-situ sampling, stockpiling must meet the following requirements:
 - Locate stockpiles at least 5 m from stormwater flow paths, roads and Providence Rivulet on gently sloping ground, where possible (level areas are often overland flow paths)
 - Avoid the potential for sediment and dust generation and runoff from any stockpiles to stormwater channels or waterways (i.e. Providence Rivulet)
 - If soils are placed temporarily on the ground, they must be placed to minimise the risk of the erosion from water or wind, and be cordoned off with high visibility tape, witches' hats/poles or similar devices until transported to the disposal location; stockpiled soils are to be covered or kept damp to prevent dust emissions
 - Construct an earthen bank on the upslope side and install sediment fence 1 to 2 m downslope of the stockpile
 - Limit stockpile height to 1.5 m (i.e. low, flat, elongated mounds), where possible

- 
- Stockpile any excavated soils into distinct material types (based on appearance, odour, composition) and if any evidence of actual or potential contamination is detected (e.g. staining, unusual colour, odour, refuse and BDR) at locations nominated by the contractor; to achieve this:
 - All of the topsoils, blue-metal fill, and clay mixed with coal to a depth of approximately 0.7 m bgl will need to be excavated and stockpiled separately as potentially contaminated waste
 - All other excavated soils should be excavated and stockpiled separately as potential clean fill
 - Effectively segregate and contain potentially contaminated soils (ideally within skip bins or similar)
 - Stockpile potentially contaminated soils in a location to minimise nuisance (e.g. dust, sediment, odour and visual impacts)
 - Store excavated soils in covered skip bins or on plastic sheeting to minimise the potential leaching of contaminants (BaP and heavy metals) into underlying soils pending laboratory results and disposal and/or reuse
 - Where ASS materials are confirmed or suspected, they must be segregated and contained, to prevent acid generation and runoff [note ASS materials are unlikely to be present]
 - Visually check any waste soils generated for the presence of potential ACM; if visible potential ACM is present in the waste soils, remove it from the stockpile and double bag it for disposal as ACM waste
 - Classify any soil to be disturbed and excavated (i.e. in-situ) or any excavated soils (i.e. ex-situ) in accordance with Section 4.4.3
 - Submit analytical results to HCC for review and obtain written approval for any materials which are proposed for onsite reuse
 - Depending on the contamination level (i.e. if classified as Level 2, 3 or 4 under IB105, or if confirmed or likely ACM), gain approval for transport and disposal (and/or treatment) from the EPA and the receiving facility
 - Only soils that are:
 - Classified as Level 1 fill material (according to IB105)
 - Suitable for residential land use (based on zoning) in accordance with the ASC NEPM⁸; and are
 - Not impacted by staining, odours, ASS, BDR and/or ACM

may be reused onsite, and only with approval from HCC; if ACM is suspected or encountered and is contained within a restricted area, double bag it and dispose as ACM-containing waste
 - ASS or Level 3 and Level 4 contaminated soils may require treatment prior to disposal to an offsite suitably-licensed facility, and approvals are to be sought from the EPA
 - Do not take waste soils offsite until test results have been received, waste soil classification has been established, approvals from HCC (for soil reuse onsite), EPA and the waste disposal facility have been obtained if required (e.g. for Level 2, Level 3 and Level 4 or if ASS or ACM-contaminated waste soils)
 - Once waste soils have been classified and approvals have been obtained, where required, transport waste soils as soon as possible to the approved disposal facility, by appropriately-licensed controlled waste transport contractors, licenced for the particular waste
 - Ensure any imported backfill soils (i.e. soils sourced from offsite) used within excavations, are either
 - Certified clean fill
 - Excavated natural material, or
 - The source history is known, and the soils are tested for CoPC / IB105 suite (relevant to the source property)
 - Ensure any reinstated excavations and disturbance areas are effectively compacted and contoured, to prevent erosion, facilitate surface sealing, and to allow unimpeded flow of stormwater towards Providence Rivulet and prevent water ponding

⁸ Note IB105 Level 1 criteria are less than ASC NEPM residential land use criteria

- 
- Clean fill certificates must be provided to HCC for review prior to the material being imported to the Site
 - Use clean topsoil in any areas to be planted
 - Clean any earthmoving equipment prior to leaving the Site (i.e. remove loose soils)
 - Stabilise and rehabilitate the banks of Providence Rivulet adjacent to the Site; refer to Environmental Best Practice Guideline 2, DPIPWE Works Manual
 - Seal the Site surface as soon as possible; and
 - Document the waste management process in accordance with Section 0.

4.4 Waste classification and disposal procedure

Collect soils in laboratory-supplied sterile jars and place on ice in chiller boxes. Complete Chain of Custody (CoC) documentation for the nominated laboratory for the analytes of concern and send samples by courier overnight. Only National Association of Testing Authorities (NATA) accredited laboratories are to be used to carry out the testing. Extraction and testing must be initiated by the laboratory within the applicable holding times for the analytes to be tested.

The procedure to be followed when sampling soils for waste classification is:

- Determine appropriate CoPC (BaP (low level) and heavy metal [arsenic (As), cadmium (Cd), Chromium (Cr), Cu, lead (Pb), nickel (Ni), Zn and mercury (Hg)] analysis at a minimum); AND
- Determine likelihood of the soils being ASS (low likelihood based on the ESA (pitt&sherry, 2021)).
- Determine appropriate testing regime for the material to be excavated (i.e. in-situ or ex-situ), for guidance when determining an appropriate:
 - In-situ sampling density (i.e. sampling of the material prior to excavation) refer to Section 0
 - Ex-situ sampling density (i.e. sampling of stockpiled material post excavation) refer to Section 4.4.2
- Only use equipment that is suitable for use when testing for particular CoPC (i.e. only use dedicated laboratory-supplied sample containers, etc.)
- For CoPC testing:
 - Collect one sample from each representative location/stockpile (as appropriate) into laboratory-supplied 250mL receptacles suitable for analytes to be tested; the large volume is required in the event that leachable concentrations need to be tested for
 - Fill sample containers with the least air-space possible to prevent volatilisation of potential volatile organic compounds (VOCs)
- Decontaminate any reusable sampling equipment (by triple rinsing with water at a minimum) between sampling locations, or use single-use nitrile gloves to sample; decontamination waters can be disposed of directly to ground
- Collect one duplicate sample for quality assurance / quality control (QA/QC)
- Store the samples on ice in a portable chiller for despatch to the laboratory
- Submit the samples to the chosen NATA-accredited laboratory for analysis within the applicable holding times for the analytes to be tested and send the completed CoC (for BaP analysis, samples must be received by the laboratory and analysis commenced within 14 days); and
- Test waste soil / sediment samples for 'chemical' CoPC (BaP, As, Cd, Cr, Cu, Pb, Ni, Zn and Hg).



4.4.1 Sampling and testing – in-situ

As per IB105, in-situ sampling is generally not recommended for classification of soils that are to be excavated later for disposal. Should in-situ sampling prove to be the chosen option, the sampling density is to be determined with reference to the requirements of:

- AS 4482.1-2005 *Guide to the investigation and sampling of potentially contaminated soil. Part 1: Non-volatile and semi-volatile compounds*; and
- AS 4482.2-1999 *Guide to the sampling and investigation of potentially contaminated soil. Part 2: Volatile substances*.

For in-situ categorisation, a systematic grid sampling pattern is recommended. The sampling depth is to correspond to the depth of contamination and the grid of sampling locations is to be selected to be representative of the soils being sampled and later excavated. Sampling from multiple depths (i.e. from each soil domain) is recommended for in-situ classification. The sampling density can be increased to reduce the uncertainty in the data.

It should be noted that in-situ sampling often results in higher (i.e. more contaminated) soil waste classifications than ex-situ sampling.

4.4.2 Sampling and testing – ex-situ

For ex-situ waste classification, IB105 recommends one sample for every 25 m³ of homogeneous soil. Increase the density / frequency (e.g. one sample per stockpile), if the waste soils are heterogeneous (i.e. different materials occur within or in different stockpiles).

The sampling density can be decreased if the soils have been assessed as sufficiently homogeneous by a suitably qualified environmental consultant with contaminated land experience.

4.4.3 Soil classification

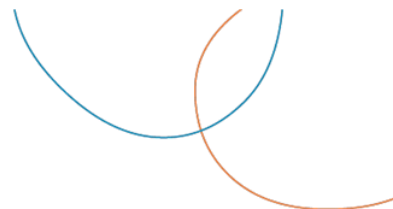
For offsite disposal, based on the maximum total concentrations of CoPC within a given sample, each soil domain / stockpile (as appropriate) will be classified according to IB105, as either:

- Level 1 – fill material (suitable for reuse)
- Level 2 – low-level contaminated soil
- Level 3 – contaminated soil; or
- Level 4 – contaminated soil for remediation.

To help inform treatment and disposal options, leachable concentrations may also need to be tested in excavated soils where total concentrations exceed Level 1, fill material classification. EPA approval is required for disposal of soils to landfill which have concentrations of CoPCs which are classified as Level 2 and above. Approval should also be sought from the proposed receiving facility.

As a component of the ESA (pitt&sherry, 2021), results of preliminary in-situ waste soil sampling and classification indicated:

- All of the topsoils, blue-metal fill, and clay mixed with coal are likely to be classified as Level 2 – low-level contaminated soil, and will need to be stockpiled separately for disposal, and
- All other soils likely to be excavated as part of these works are likely to be classified as Level 1 – fill material; and should be stockpiled separately for reuse on Site or disposed as clean fill.



The Level 2 soils are predominantly characterised by:

- Depths from surface to a maximum of approximately 0.7 m; and
- Composed of topsoil, blue metal, and coal intermixed with clay.

Advice should be sought from a qualified and experienced practitioner if Level 3, Level 4 or ACM-contaminated materials are confirmed.

Note that the IB105 classification does not apply to materials classified as ASS, or ACM.

4.4.4 Soil disposal versus reuse

HCC approval is required for onsite reuse of any excavated materials.

For soil to be reused onsite, analytical results must satisfy the following requirements:

- Classified as Level 1 – fill material in accordance with IB105
- Suitable for residential land use (based on zoning) in accordance with the ASC NEPM⁹; and
- Not impacted by odours, staining, ASS, BDR and/or ACM.

Excavated soils that do not meet the above requirements must be disposed offsite to an appropriately-licensed facility. EPA and the facility's approval for disposal will be required.

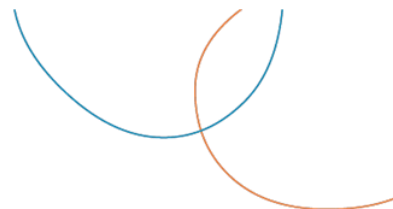
Licensed facilities in close proximity to the Property include:

- McRobies Gully Waste Management Centre: can accept Level 1 – fill material
- Southern Waste Solutions (SWS) Copping B-Cell: can accept Level 2 – low-level contaminated soil; and
- SWS Copping C-Cell: can accept Level 3 – contaminated soil.

Treatment may be required prior to disposal for soils classified as Level 3 or 4 contaminated soil (per IB105). It is assumed that no Level 4 contaminated soils requiring treatment, are likely to be encountered during redevelopment.

Possible onsite reuse options (subject to acceptable classification) are to be agreed by HCC and the earthmoving contractor prior to excavation works commencing. Reuse of soil adjacent to Providence Rivulet must be avoided if there is a risk of erosion and migration into surface waters.

⁹ Note IB105 Level 1 criteria are less than ASC NEPM residential land use criteria



4.4.5 Documentation

The procedure to be followed for documenting waste soils handling, testing, classification and disposal or reuse is:

- Document soil volumes and rationale for sampling
- Keep copies of laboratory CoC forms, photographs and sketches (showing stockpile locations and sample locations) and notes
- Keep copies of analytical reports
- Compare analytical results to relevant guidelines (e.g. IB105, ASC NEPM) and identify any exceedances
- Where exceedances are identified, seek specialist advice from a qualified environmental practitioner with experience in contaminated land assessments
- EPA approval documentation should be kept on record
- Waste disposal transport and landfill documentation is to be kept on record
- Keep and file all records, or scan and save; and
- Provide copies of all records to HCC.

4.5 Stormwater management procedure

During redevelopment and excavation works, stormwater is to be managed as follows:

- Reference should be made to Section 0 for the excavated soil management procedure
- Divert upslope surface water flow around the Site (e.g. install a diversion drain to divert flows to a stable drainage line, install a level spreader at the outlet to control flow rate and risk of erosion)
- Protect the existing stormwater system, including any stormwater pits, from blocking up with sediment; refer to Fact Sheet 15
- Avoid or minimise worker contact with any runoff water, ponded water, mud or soil
- Avoid or minimise worker contact with sediments within Providence Rivulet
- All earthworks must contain all soils generated to prevent erosion
- Where ASS materials are confirmed or suspected, they must be contained to prevent acid generation and runoff (low likelihood based on the ESA (pitt&sherry, 2021))
- Visually check collected water for sediment and contamination (e.g. odour, staining, sheen, oil) prior to discharge
- In the event of a fuel / oil spill:
 - Do not take potentially contaminated collected wastewater offsite unless it has been sampled for CoPC (refer to Section 0) and relevant approvals have been obtained from EPA/HCC and the waste disposal facility, if required
 - Capture any obviously-contaminated wastewater (e.g. fuel / oil spills) and dispose offsite with a licenced waste transport company; approval from HCC and/or the EPA may be required; and
- Document the wastewater management process in accordance with Section 4.5.3, when necessary.



4.5.1 Contaminant sampling and testing

The procedure to be followed when sampling potentially-contaminated collected water (e.g. in the event of a fuel / oil spill) is:

- Identify CoPC (e.g. for a fuel / oil spill CoPC will include total petroleum hydrocarbons (TPH), polyaromatic hydrocarbons (PAH) and benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN))
- Only employ equipment that is suitable for use when testing for CoPC (i.e. use dedicated laboratory-supplied sample containers, etc.)
- Collect a representative sample from each captured water source into laboratory-supplied receptacles suitable for analytes to be tested, avoid sediment
- Fill sample containers with the least air-space possible to prevent volatilisation of potential VOCs
- Decontaminate any reusable sampling equipment (by triple rinsing with water at a minimum) between sampling locations or only use the sampling containers and single-use nitrile gloves to collect the samples
- Collect one duplicate sample for QA/QC
- Store the samples on ice in a portable chiller for despatch to the laboratory
- Submit the samples to the relevant laboratory for analysis within the applicable holding times for the analytes to be tested at the completion of sampling; and
- Test wastewater samples for 'chemical' CoPC (e.g. TPH, PAH and BTEXN at a minimum).

4.5.2 Water classification

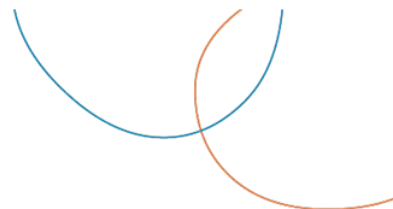
To determine the suitability of the captured water for discharge to Providence Rivulet or for offsite disposal, classify potentially-contaminated wastewater by comparing analytical results to appropriate guideline criteria including:

- Australian and New Zealand Environment and Conservation Council *Guidelines for Fresh and Marine Water Quality 2000* (ANZECC); and
- Australian and New Zealand *Guidelines for Fresh and Marine Water Quality 2018* (ANZG); and

4.5.3 Documentation

The procedure to be followed for documenting wastewater handling, testing and disposal is:

- Document water volumes captured and rationale for sampling
- Keep copies of laboratory CoC forms, photographs and sketches (containment areas / locations and sample locations) or notes
- Keep copies of analytical reports
- Compare analytical results to relevant guidelines (e.g. ANZECC, ANZG)
- Where exceedances are identified, seek specialist advice from a qualified environmental practitioner to assist with discharge and/or disposal options (if required)
- Waste disposal transport documentation is to be kept on record
- Keep and file all records, or scan and save; and
- Provide copies of all records to HCC.



5. References

AS 4482.1-2005 Guide to the investigation and sampling of potentially contaminated soil. Part 1: Non-volatile and semi-volatile compounds, Standards Australia (AS 4482.1)

AS 4482.2-1999 Guide to the sampling and investigation of potentially contaminated soil. Part 2: Volatile substances (AS 4482.2)

AS/NZS 5667.1:1998 Water quality – Sampling, Part 1: Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples, Standards Australia, 1998 (AS/NZS 5667.1)

AS/NZS 5667.6:1998 Water quality – Sampling, Part 6: Guidance on sampling of river and streams, Standards Australia, 1998 (AS/NZS 5667.6)

Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2018 (ANZG)

Environmental Site Assessment, 321-323A Elizabeth Street, North Hobart, pitt&sherry, 17 December 2021 (ESA, pitt&sherry, 2021)

EPA Tasmania Soil & Water Management on Standard Building & Construction Sites Fact Sheet 2, December 2008

EPA Tasmania Soil & Water Management Plans Fact Sheet 3, December 2008

EPA Tasmania Dispersive Soils – High Risk of Tunnel Erosion Fact Sheet 4, December 2008

EPA Tasmania Minimise Soil Disturbance Fact Sheet 5, December 2008

EPA Tasmania Divert Up-slope Water Fact Sheet 7, December 2008

EPA Tasmania Erosion Control Mats & Blankets Fact Sheet 8, December 2008

EPA Tasmania Protect Service Trenches & Stockpiles Fact Sheet 9, December 2008

EPA Tasmania Stabilised Site Access Fact Sheet 12, December 2008

EPA Tasmania Sediment Fences & Fibre Rolls Fact Sheet 14, December 2008

EPA Tasmania Protection of Stormwater Pits Fact Sheet 15, December 2008

EPA Tasmania Dust Control Fact Sheet 18, December 2008

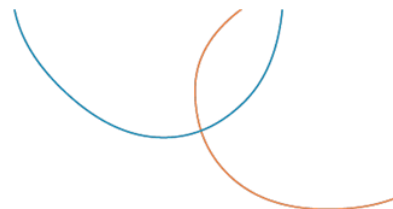
EPA Tasmania Site Revegetation Fact Sheet 19, December 2008

Guidelines for Fresh and Marine Water Quality, Australian and New Zealand Environment and Conservation Council (ANZECC)

Information Bulletin No. 105 Classification and Management of Contaminated Soil for Disposal, Environment Protection Authority Tasmania, 2018 (IB105)

National Environment Protection (Assessment of Site Contamination) Measure 1999, amended 2013 (ASC NEPM)

Wetlands and Waterways Works Manual, Department of Primary Industry, Water and Environment, 2003 (DPIPWE Works Manual)



6. Important information

6.1 Scope of services

This report ("the Report") has been prepared in accordance with the scope of services set out in the contract, or as otherwise agreed, between the client and pitt&sherry ("the scope of services"). In some circumstances the scope of services may have been limited by a range of factors such as time, budget, access and/or site disturbance constraints. The Report may only be used and relied on by the client for the purpose set out in the contract or as otherwise agreed between the client and pitt&sherry. Any use which a third party makes of this document, or any reliance on or decisions to be made based on it, is the responsibility of such third parties.

6.2 Reliance on data

In preparing the Report, pitt&sherry has relied upon data, surveys, analyses, designs, plans and other information provided by the client and other individuals and organisations, most of which are referred to in the Report ("the data"). Except as otherwise stated in the Report, pitt&sherry has not verified the accuracy or completeness of the data. To the extent that the statements, opinions, facts, information, conclusions and/or recommendations in the Report ("conclusions") are based in whole or part on the data, those conclusions are contingent upon the accuracy and completeness of the data. pitt&sherry does not warrant the accuracy will not be liable in relation to conclusions should any of the data, be incorrect or have been concealed, withheld, misrepresented or otherwise not fully disclosed to pitt&sherry.

6.3 Conclusions and recommendations

The conclusions in this Report are based on conditions encountered and information reviewed at the date of preparation of the Report. pitt&sherry has no responsibility or obligation to update this Report to account for events or changes occurring subsequent to the date that the Report was prepared.



Figures

Appendix A



Hobart City Council

Figure 1
321-323A Elizabeth Street,
Hobart, Property and Site Location

pitt&sherry

N

0 0.01 0.01 0.02 km

Coordinate System: GDA1994 MGA Zone 55
1:600 When Printed at A4

MAP REF P.19.0421
AUTHOR jholan
REVISION A
DATE 17/12/2021

DATA SOURCES Base data and map from
The LISTmap Tasmanian
Government
Project specific data

Legend

- Sewer lines
- Site boundary
- Property boundary
- Cadastre



DPIPWE Works Manual

Appendix B

pitt&sherry

Managing large woody debris (LWD) in waterways

- w Leave LWD undisturbed unless it can be demonstrated that it is causing serious flooding or erosion.
- w If local flooding caused by LWD is shown to be detrimental, but full-scale removal cannot be justified on either economic or ecological grounds, re-positioning of LWD may be an option.
- w Extensive loss of riparian and floodplain vegetation has removed the source of LWD found in many waterways. Re-introducing LWD can help improve stream water quality, erosion protection and habitat diversity.

Managing riparian vegetation

- w Protecting existing riparian zones in good condition is easier than remediation of degraded sites.
- w Managing stock access to waterways by fencing is a key step in maintaining healthy riparian vegetation.
- w Removal of weeds must be done in a planned manner.
- w Riparian zone width should reflect management objectives.

Community involvement in works

- w Community groups should seek advice and support from council before undertaking works.
- w While smaller works may just require a work plan, larger scale works require a proper Rivercare Plan.

Role of local government

Local government has the power under the *Land Use Planning and Approvals Act 1993* to regulate works on waterways and wetlands. Councils are taking an active role in their management for a variety of reasons:

- w infrastructure protection
- w flood mitigation
- w community expectations
- w maintaining river health
- w bio-diversity issues
- w preserving existing uses (e.g. drinking water), and
- w providing options for future resource use.

Successfully achieving these outcomes requires a planning and works approach utilising environmental best practice combined with effective on-going management and maintenance arrangements.

Waterways & Wetlands Works Manual

To support councils in the management of waterways and wetlands, DPIWE in partnership with the LGAT and supported by NHT funding has compiled the *Waterways & Wetlands Works Manual*.

The *Manual* is a set of eight documents (plus *Introduction* document) with information on environmental best practice requirements covering the following areas:

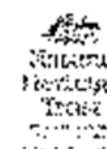
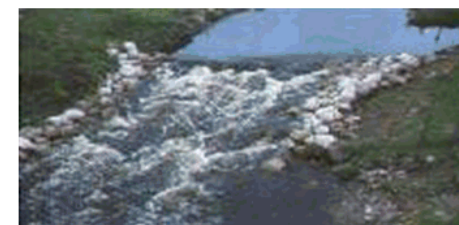
1. *Legislative and policy requirements for protecting waterways & wetlands when undertaking works*
2. *Environmental best practice guidelines: construction practices in waterways & wetlands*
3. *Environmental best practice guidelines: excavating in waterways.*
4. *Environmental best practice guidelines: minimising environmental harm from agricultural drainage channels*
5. *Environmental best practice guidelines: siting and design stream crossings.*
6. *Environmental best practice guidelines: managing large woody debris in waterways.*
7. *Environmental best practice guidelines: managing riparian vegetation*
8. *Environmental best practice guidelines: guiding community involvement in works on waterways & wetlands*

The *Manual* will be of use to anyone intending to undertake works in waterways and wetlands. It should always be used in conjunction with appropriate technical advice and, where necessary, utilising additional technical literature.

The *Manual* can be downloaded from the DPIWE website
<http://www.dpiwe.tas.gov.au>

**WATERWAYS & WETLANDS
~ WORKS MANUAL ~****Environmental Best Practice
Guidelines when undertaking
Works on Waterways &
Wetlands in Tasmania**

How to minimise the risk of environmental harm when undertaking works on waterways & wetlands.



Protecting our waterways & wetlands

Healthy waterways and reliable supplies of good quality water are critical to Tasmania's future. Our state has extensive water resources with approximately 150,000 kilometres of waterways and over 8,000 wetlands.

Waterways are natural depressions, consisting of a defined channel with a bed and banks, that carry perennial or intermittent flows of surface water for all or part of the year. Any land that adjoins, directly influences or is influenced by a body of water (ie riparian land) should be regarded as part of the waterway.

Wetlands are depressions in the landscape or areas of poor drainage that hold water derived from ground water and surface water run-off and support plants adapted to partial or full inundation. Wetlands are usually associated with standing water but they can be part of a waterway or an adjoining marsh or billabong. Wetlands are not always wet. Temporary wetlands may dry out on a seasonal or less regular basis.

Works as a 'threatening process'

Works on waterways and wetlands in Tasmania are routinely undertaken by state and local government, industry, farmers, and community groups. These works include:

- w modifying and diverting stream channels
- w constructing weirs, levees and drainage lines on farms
- w stream crossings for roads, pipelines and other utilities
- w clearing large woody debris and riparian vegetation

These activities may have unintended consequences:

- w severely degraded stream health
- w threaten survival of native flora and fauna
- w put at risk in-stream structures (bridges, culverts etc.)
- w threaten essential service delivery or increase cost of supply (eg drinking water supplies)
- w in extreme cases, cause danger to human life

Waterways and wetlands are complex and dynamic ecosystems. The impacts of works programs may extend over large distances upstream and downstream and persist over long timeframes. Badly conceived & implemented projects are expensive, fail to achieve outcomes, and can have serious environmental (and financial) consequences.

Environmental best practice

The risk of environmental harm from works can be minimised by complying with environmental best practice requirements outlined in the *Tasmanian Waterways & Wetlands Works Manual*. Key best practice requirements include:

Appropriate authorisation of works

- w Works approval may be required at local, state or commonwealth government level. Advice should be sought from council or DPIWE before starting works.

Expert advice sought

- w Expert input and a site briefing before starting works.

Works plan prepared

- w A plan outlining works to be undertaken and measures to minimise environmental harm.

Low risk construction practices

- w Contractors and plant operators are aware of, and adopt, best practice requirements.
- w A sediment and erosion control plan in place.
- w Contaminants are kept out of waterways.
- w The works site is stabilised and rehabilitated.

"Works in waterways and wetlands can have unwanted consequences..."

**Bed and bank excavation in waterways**

- w Avoid excavating at high risk sites. Assess whether it is a 'high risk' works site, eg likely to cause flooding, bank erosion, bed degradation or initiate headward erosion, where a bridge is close by, threatened species are present etc.
- w Gain an understanding of the works site and river system of which it is a part through desktop & field surveys.
- w Choose appropriate stream bed/bank control structures.
- w Reapply natural stream geometry, materials and habitat.
- w Preserve riparian vegetation for bank stability.
- w Avoid developments on flood prone areas which will require the construction of levee banks.

Developing agricultural drainage channels

- w Assess suitability of site for drainage - soil type, hydrological and hydraulic characteristics, etc..
- w Design and construct drainage channels to reduce risk of erosion and minimise stormwater sediment loads.
- w Install channel outlet structures to prevent drainage flows eroding stream bed/banks when entering waterways.
- w Regularly inspect drains. Include stock, weed and erosion control in maintenance programs.

Siting and design of stream crossings: bridges, culverts, fords, causeways & stock-crossings

- w Explore all alternatives to the construction of a new crossing. Use existing crossings wherever possible.
- w When selecting structure type, use the following order of preference to minimise environmental impacts – bridge, arch culvert, open-bottom box culvert, closed bottom box culvert, pipe culvert.
- w Maintain the natural flow regime by avoiding or minimising changes to channel form and flow volume.
- w Avoid 'perched culverts' which have an outlet more than 10 cm above the level of downstream waters.
- w Minimise disturbance to streambank soil and vegetation.
- w Ensure adequate erosion control on approach roads.
- w Regulate stock access to waterways.

Environmental Best Practice Guidelines 1. Legislative and Policy Requirements for Protecting Waterways and Wetlands when Undertaking Works

There is a raft of legislative and policy instruments which do have, or may have, some bearing upon the regulation of works undertaken within our wetlands and waterways. This document provides a brief outline of these regulatory requirements. Best professional judgement should be used by local government personnel in determining their applicability to individual cases. Where required, further advice on interpretation and implementation is available from the nominated agencies.

1. Legislation and policy

Tasmanian Resource Management and Planning System (RMPS)

Tasmania's RMPS is an integrated planning and environmental management framework to achieve sustainable outcomes from the use or development of the State's natural and physical resources. Sustainable development means

...managing the use, development and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic and cultural well-being and for their health and safety while -

- (a) sustaining the potential of natural and physical resources to meet the reasonably foreseeable needs of future generations; and*
- (b) safeguarding the life-supporting capacity of air, water, soil and ecosystems; and*
- (c) avoiding, remedying or mitigating any adverse effects of activities on the environment.*
(Clause 2, Schedule 1, Land Use Planning and Approvals Act 1993)

Local government must ensure that planning and environmental decisions within its jurisdiction promote sustainable development of water resources.

Land Use Planning and Approvals Act 1993 (LUPAA 1993)

Local government regulates land use and development through planning schemes and a planning permit system. Planning schemes must seek to further the RMPS objectives and must be prepared in accordance with state policies (the State Policy on Water Quality Management 1997 being the key policy for wetlands & waterways). These requirements are achieved in some recent planning schemes through incorporation of a Wetlands & Waterway Schedule which specifies the objectives and standards for development in, or near, wetlands and waterways. Provisions in older planning schemes that predate, and are inconsistent with, a State Policy are void to the extent of any inconsistency.

Local government must observe, and enforce the observance of, the planning scheme in respect of all use or development undertaken within the area covered by the scheme.

"development" under LUPAA 1993 includes

... (c) the construction or carrying out of works; ...

"works" includes

...any change to the natural or existing condition or topography of land including the removal, destruction or lopping of trees and the removal of vegetation or topsoil, but does not include forest practices, as defined in the Forest Practices Act 1985, carried out in State forests.

where "land" includes

- (a) buildings and other structures permanently fixed to land; and*
- (b) land covered with water; and*
- (c) water covering land; ...*

A planning permit is required before commencement of any use or development which, under the provisions of a planning scheme, requires planning approval. The approvals process must ensure that land-use and environmental effects arising from the use or development do not conflict with planning scheme requirements (including development standards such as those contained within the Wetlands & Waterway Schedule), state policies, or environmental regulations.

Examples of uses and developments that may require a planning permit include works in wetlands and waterways that involve:

- stormwater and erosion control
- clearing of debris and vegetation from streams and stream banks
- development of drainage and riverworks schemes (not routine maintenance)
- stream channel modifications
- roads and pipeline stream crossings
- structures such as pump stations on banks
- off-stream storages of less than 1ML
- works ancillary to dam construction such as access roads (not dams themselves).

Variations exist between individual planning schemes as to what activities are considered to be exempt from the requirement to obtain a planning permit. Some specified activities are exempt in all planning schemes - i.e. most dam construction and routine operational & maintenance works undertaken by water entities - due to the operation of other legislation.

Local Government Act 1993 (LGA 1993)

Works in wetlands and waterways may be subject to council requirements as detailed in council by-laws and/or abatement notices.

A council has a general power under Part 11 of the LGA 1993 to make by-laws in respect of any act, matter or thing for which a council has a legislated function or power. By-laws may include activities such as the execution of works in watercourses and riparian zones, requiring such works to be undertaken by an appropriately qualified person in the manner specified by council.

Abatement notices can also be issued by council where it is satisfied that a nuisance exists. These notices detail actions that need to be taken and the timeframes for implementation. Under section 199 of the Act, a nuisance includes anything that causes, or is likely to cause, danger or harm to the health, safety or welfare of any person; a risk to public health; or an activity that gives rise to unreasonable or excessive levels of pollution in waterways. Penalties exist for non-compliance with by-laws and abatement notices.

Environmental Management & Pollution Control Act 1994 & Regulations 1996

Local government authorities are responsible for any necessary environmental regulation of smaller scale activities and

...must use its best endeavours to prevent or control acts or omissions which cause or are capable of causing pollution (Section 20).

An environmental protection notice can be served on the responsible person where the council officer is satisfied that in relation to an environmentally relevant activity

- (a) *environmental harm is being or is likely to be caused (where environmental harm is any adverse effect on the environment of whatever degree or duration and includes an environmental nuisance); or*
- (b) *environmental harm has occurred and remediation of that harm is required; or*
- (c) *it is necessary to do so in order to give effect to a State Policy or an environment protection policy; or*
- (d) *it is desirable to vary the conditions of a permit; or*
- (e) *it is necessary to secure compliance with the general environmental duty (Section 44)*

The environmental protection notice can require specified measures to be taken (including best practice environmental management) to prevent, control, reduce or remediate environmental harm. In terms of compliance with the general environmental duty, section 23A requires that:

A person must take such steps as are practicable or reasonable to prevent or minimise environmental harm or environmental nuisance caused, or likely to be caused, by an activity conducted by that person.

In determining whether a person has complied with the general environmental duty, regard must be had to all the circumstances of the conduct of the activity, including but not limited to

- (a) the nature of the harm or nuisance or potential harm or nuisance; and*
- (b) the sensitivity of the environment into which a pollutant is discharged, emitted or deposited; and*
- (c) the current state of technical knowledge for the activity; and*
- (d) the likelihood and degree of success in preventing or minimising the harm or nuisance of each of the measures that might be taken; and*
- (e) the financial implications of taking each of those measures.*

While this legislation provides mechanisms for the protection of wetlands and waterways from environmental harm, it is worth noting that environmental impacts may only become evident several years down the track and at locations remote from the original works. There may not always be clear and unambiguous links between the activity and the environmental consequences. In such cases, the issue of an environmental protection notice may not be appropriate. A preferred approach may be the provision of practical advice to those undertaking works and dissemination of best practice guidelines on how to minimise the environmental impacts. For further information contact the Environment Division of DPIWE.

Crown Lands Act 1976 (CLA 1976)

Crown Land Services (CLS) manages crown lands under licence, lease or being held for sale. CLS facilitates the assessment within the State Government of all applications for crown land use, including the private use of reserved lands under both the CLA 1976 and the National Parks and Wildlife Act 1970. This covers new developments such as weirs, channel modification, Telstra services, roads, pump stations or other structures on banks. Such developments are, however, still subject to LUPAA 1993 requirements. No works can commence until all approvals are received from CLS and, depending on the local planning scheme, the relevant council. In some cases riparian reserves may be leased back to local government to manage. Prior to undertaking any activities likely to disturb flora or fauna on crown land, authority is required from the local ranger.

National Parks and Wildlife Act 1970 (NP&WA 1970)

The Parks & Wildlife Service has responsibility for the on-ground management of all public reserves under both the CLA 1976 and the NP&WA 1970. Recent amendments to LUPAA 1993 (to be proclaimed) will require developments and certain activities conducted on lands reserved under the NP&WA 1970 to be subject to local government planning approval. As the local Parks District have the key role in enforcing regulations and in developing and implementing management plans, they are the appropriate first point of contact when planning to undertake works on wetlands or waterways likely to affect public reserves.

Water Management Act 1999 (WMA 1999)

The Assessment Committee for Dam Construction (ACDC) regulates the construction of all on-stream dam construction and all off-stream storages larger than 1 ML. As stated above, a permit granted by the ACDC under this Act negates any need for a permit for the same works under LUPAA 1993. For dam proposals a Regional Water Management Officer completes a dam assessment report based on guidelines for issues such as dam safety, environmental impact, geo-heritage, threatened species, aboriginal and cultural heritage and fish passage. A water licence is also required from DPIWE to store water behind this structure where water usage is not covered under stock or riparian rights. Water diversion works and activities are, in most cases, regulated under the Act.

The creation of water districts and the development of riverworks or drainage schemes for purposes such as channel modification, bank protection or removal of flow obstructions, requires Ministerial approval under the Act. The Minister is required to consult with the Director of Environmental Management. Subject to the requirements of the local planning scheme, development approval may also be required from council. A permit is not required, however, for works undertaken in the normal course of their operation.

A water entity administering a water management plan or a water district is not required to hold a permit for any activities which are -

- (a) necessary for the operation, maintenance, repair, minor modification, upgrading or replacement of existing works managed or owned by that water entity and will not cause environmental nuisance, material environmental harm, serious environmental harm or result in an increased risk to human life; or*
- (b) required urgently to protect persons from injury or those works from damage so long as the activities will not cause serious environmental harm. (Section 185).*

Where these activities have resulted in material environmental harm or serious environmental harm, the Minister under this Act may serve notice on the water entity directing it to rectify the effects of the activity.

The point of contact for activities covered by the WMA 1999 will generally be the Regional Water Management Officer, Water Resources Division DPIWE.

State Policy on Water Quality Management 1997

Local councils are responsible under the RMPS for the prevention or control of pollution in surface water by activities within their jurisdiction which are not level 2 or level 3 activities. The Policy applies to surface waters and groundwaters and details a range of mechanisms for the control of point source and diffuse source pollutants.

The development and implementation of best practice environmental management strategies are seen as the key principle for control of diffuse source pollution. Regulatory authorities should take account of the application of such codes when considering enforcement action under legislation in areas such as agricultural and urban run-off, forestry, road construction and other forms of land disturbance. Section 39.2 of the Policy states

Regulatory authorities shall develop criteria for the approval of stream management works and require that any such works are designed and carried out in accordance with best practice environmental management and so as not to prejudice the achievement of water quality objectives.

All works must comply with the requirements of the State Policy. Further information on implementing the Policy can be obtained from the Environment Division of DPIWE.

Inland Fisheries Act 1995

The focus of this Act is on maintaining fish passage & protection of fish habitat. Section 126 prohibits the flow into inland waters containing fish any "liquid, gaseous or solid matter" likely to harm fish or spawning grounds or food - this would include sediment. Section 139 states that a person must not place or use in any inland waters any equipment, instrument or device likely to hinder or obstruct the free passage of fish in those waters, without the written consent of the Director of Inland Fisheries. Sections 154 & 155 enable the creation of fauna reserves within inland waters and the placement of restrictions upon activities within such reserves. For further information contact the Inland Fisheries Service.

Forest Practices Act 1985 & Forest Practices Regulations 1997

The Forest Practices Act 1985 and Forest Practices Regulations 1997 cover the environmental regulation of forestry operations on public and private land and are administered by the Forest Practices Board. Forestry activities must comply with the requirements of the Forest Practices Code 2000 and may require a Forest Practices Plan. Streamside reserves, drainage lines and swamps are defined as 'vulnerable land' and generally forest clearing is prohibited, even where no commercial wood is produced. Circumstances in which harvesting or clearing is allowed are detailed in *Environmental Best Practice Guidelines 7: Managing Riparian Vegetation*.

Forestry activities within State forests and Private Timber Reserves do not require a permit from local government. However, non-forestry related activities affecting waterways remain subject to planning scheme requirements. The relevant point of contact for further information is the Forest Practices Board.

Threatened Species Protection Act 1995

Section 51 makes it an offence to knowingly take, destroy, injure, trade, keep or disturb listed flora or fauna without a permit. The Act allows the Minister to make an interim protection order to conserve the habitat, or part of the habitat, of a listed or nominated taxon of flora or fauna on either private or crown land. Interim protection orders prevail over planning schemes and can incorporate the prohibition or regulation of any activity likely to affect the habitat adversely.

Threatened species gain this status because their abundance, range or habitat has been reduced or threatening process are occurring likely to result in population reduction. In Tasmania there are 14 species of freshwater plants, over 30 riparian plant species and 76 species of freshwater fauna listed under the Act. The presence of threatened flora or fauna in the vicinity can be determined by contacting the Threatened Species Unit, Parks and Wildlife Service or by electronically accessing GT Spot (www.gisparks.tas.gov.au), which holds the threatened species data base.

Environment Protection and Biodiversity Conservation Act 1999

This commonwealth statute establishes powers over new projects or developments which may have a 'significant impact' on matters of 'national environmental significance' (i.e. listed threatened species and ecological communities; Ramsar wetlands; listed migratory species; and World Heritage properties).

For freshwater ecosystems the Act may encompass irrigation and other consumptive use developments; water infrastructure projects (such as weirs, channels, levee banks or dams); flow altering or pollution causing developments affecting native fish and wetlands; and land clearing activities.

Further details are provided at the Environment Australia website
<http://www.ea.gov.au/epbc/assessapprov/referrals/significanceguide.html>

Aboriginal Relics Act 1975

This Act covers the physical remains of Aboriginal occupation in Tasmania and makes it illegal to interfere, conceal, remove, damage or destroy an Aboriginal relic, such as middens, stone tools and rock shelters, regardless of land tenure (unless a permit has been granted by the Minister on the advice of the Director, National Parks and Wildlife).

River verges and wetlands are likely to have a long history of Aboriginal use. Surveys may be required where works are planned in areas likely to contain Aboriginal relics. Generally these surveys are done by private consultants. The Aboriginal Heritage Section, Tasmanian Heritage Office should be contacted for further information.

Historic Cultural Heritage Act 1995

Restrictions on works may apply where a waterway or a structure on a waterway is deemed to have historic cultural heritage significance to any group or community in relation to the archaeological, architectural, cultural, historical, scientific, social or technical value of the place. Specified works and specified primary production within a heritage area may have Ministerial exemption.

The planning authority (or Heritage Council where local government does not have that delegated power) may only approve a works application in respect of works which are likely to destroy or reduce the historic cultural heritage significance of a registered place or a place within a heritage area if it is satisfied that there is no prudent and feasible alternative to carrying out the works.

The Tasmanian Heritage Register is accessible at www.tasheritage.tas.gov.au or contact the Cultural Heritage Unit of the Tasmanian Heritage Office.

The Register of the National Estate which is maintained by the (Commonwealth) Australian Heritage Commission under the Australian Heritage Commission Act 1975 may also impact where works and activities require government approval.

Agricultural and Veterinary Chemicals (Control of Use) Act 1995

A person proposing to use chemicals to control pests (including weeds) in streams or along river banks must use non chemical means of control wherever practical. Where it can be demonstrated that chemical control poses less net environmental risk, chemicals must be used in accordance with this Act. An operator providing a commercial spraying service must hold a Commercial Operator Licence and a Certificate of Competency relevant to the type of work undertaken.

A Code of Practice for Ground Spraying has been developed for ground spraying which prescribes responsibilities and minimum standards. No spraying should take place on waterways or waterbodies or waterlogged areas unless the product is approved for such use. When spraying, chemical is not to move off-target to extent it may adversely affect waterways or waterbodies or waterlogged areas. The Code can be accessed via the internet - www.dpiwe.tas.gov.au. Contact the Chemical Management Unit, DPIWE for further details on legislative requirements.

Weed Management Act 1999

This is the principal legislation concerned with the management of declared weeds in Tasmania and is an important component in delivering the State Weed Management Strategy (WeedPlan). A plant considered a serious economic, environmental and/or social risk, is declared under the Act, allowing legally enforceable actions to be undertaken to control it. Examples of declared riparian weeds are willows and blackberries.

Weed Management Plans are developed for each weed species. These contain information relevant to the legally enforceable management of that weed and includes measures to control, eradicate or restrict the spread of the weed, and establishes the law in relation to its importation, distribution and sale.

Many councils have a gazetted weed management officer. This allows councils to strategically manage weeds in their municipality and help fulfil any obligations they have under the Act. For more information on weed control and the Act, contact a DPIWE Regional Weed Management Officer or access the DPIWE website.

Mineral Resources Development Act 1995

In rare cases, where there is a benefit to the waterway and surrounding environment, sand and gravel extraction from a waterway may be acceptable. Where more than 100 tonne per annum of any rock, stone, sand, gravel and clay is to be extracted, the Mineral Resources Development Act 1995 requires a mining lease to be issued by Mineral Resources Tasmania and compliance with the requirements of the 1999 Tasmanian Quarry Code of Practice. Quantities less than this extracted from crown land will require a licence from Crown Land Services. Operators of new extractive pits, with the exception of forestry quarries, will also be required to hold a permit issued by a planning authority under LUPAA 1993. Most permits will be discretionary and will require public advertisement of the application. Further information is available from Mineral Resources Tasmania.

Public Health Act 1997

Works on wetlands and waterways may impact upon water quality through re-suspension of sediments and erosion impacts. Increasing turbidity levels will generally increase the cost of drinking water disinfection.

Section 128 of the Act requires that any agency, public authority or person managing or in control of water must manage the water in a manner that does not pose a threat to public health; and on becoming aware that the quality of the water is, or is likely to become, a threat to public health, notify the Director of Public Health in accordance with any relevant guidelines.

If a council receives a report from an environmental health officer that the quality of water is, or is likely to become, a threat to public health, the council must take any necessary and practicable action in accordance with any relevant guidelines to prevent the threat by

- (a) *restricting or preventing the use of the water; or*
- (b) *restricting or preventing the use of any food product in which the water has been used; or*
- (c) *rendering the water safe; or*
- (d) *giving warnings and information to the public about the safe use of the water or risk of using the water. (Section 128.3)*

Where further information is required contact the Director of Public Health.

2. Complementary resource management tools

A strategic approach to natural resource management is essential for positive environmental outcomes. The following publications and programs should be considered where appropriate. Access to funding support for on-ground activities may require compliance with the objectives or recommendations of one or more of the following programs.

Tasmanian Natural Resource Management (NRM) Framework

The Natural Resource Management Bill 2002 provides the statutory basis for the implementation of the Tasmanian NRM framework. Resource management priorities determined by state and regional committees will have implications for the management of wetlands and waterways in areas such as the protection of biodiversity, water quality and soil values.

Rivercare Plans

For works funded under the Natural Heritage Trust, development of Rivercare Plans incorporating professional advice is required before works are undertaken. Such plans provide an assessment of community and environmental values associated with these ecosystems and a plan for implementation and on-going maintenance of works. *Environmental Best Practice Guidelines 8: Guiding Community Involvement in Works on Waterways & Wetlands* describes the process for plan development.

Other resources

- State Wetlands Strategy (under development)
- Directory of Important Wetlands in Australia
- Tasmanian Nature Conservation Strategy (under development)
- Threatened Species Strategy
- Tasmanian Geo-conservation Database
- Integrated Catchment Management Plans
- Landcare/community based plans
- Planning by Water Authorities (e.g. Hobart Water, Esk Water)
- National Action Plan for Salinity and Water Quality
- National Local Government Biodiversity Strategy

3. CHECKLIST**Legislative and Policy Requirements for Protecting Waterways & Wetlands when Undertaking Works**

Given the range of legislation and policy which may be triggered by works in wetlands and waterways, decisions on the application and interpretation of legislation and policy are not always clear-cut. Typically such decisions are aided by the collection of adequate information about the impacts, or potential impacts, of a development.

Outlined below are examples of the type of questions to be asked about proposed works when determining whether a specific piece of legislation or policy is applicable. These are examples only. Other information may also be required to allow a considered decision to be made.

When in doubt about the application or interpretation of legislation or policy, contact the relevant government agency for advice.

- ☐ Approval of landowner / land manager (Appendix 1)
Has the property title for the wetland or waterway been checked? Has permission been obtained from the landowner and/or land manager to undertake works?
- ☐ Tasmanian Resource Management and Planning System (Page 1)
Is the activity compatible with the sustainable development of water resources? Will the activity adversely affect the life-supporting capacity of aquatic ecosystems?
- ☐ Land Use Planning and Approvals Act 1993 (Page 1)
Does the planning scheme further the objectives of sustainable development? Is the planning scheme prepared in accordance with the State Policy on Water Quality Management 1997? Is a planning permit required for the proposed activity? Do land-use & environmental effects arising from use or development comply with planning scheme requirements?
- ☐ Local Government Act 1993 (Page 2)
Are there by-laws relating to the execution of works in wetlands and waterways? Is the activity likely to cause danger or harm to the health, safety or welfare of any person? Is the activity likely to cause a risk to public health? Does it give rise to unreasonable or excessive levels of pollution in waterways?
- ☐ Environmental Management & Pollution Control Act 1994 (Page 2)
Is environmental harm being or likely to be caused? Has environmental harm already occurred and remediation of that harm is required? Is the activity consistent with State Policy or an environment protection policy? Is there compliance with the general environmental duty?
- ☐ Crown Lands Act 1976 (Page 3)
Does the development involve the private use of crown lands? Are approvals required from Crown Land Services? Are development approvals required from council?
- ☐ National Parks and Wildlife Act 1970 (Page 3)
Is the activity on a riparian public reserve or within a national park? Does the development require approval from the Parks & Wildlife Service? Is development approval required from council?
- ☐ Water Management Act 1999 (Page 3)
Does the proposal involve dam construction? Does it require consideration by the Assessment Committee for Dam Construction (i.e. all on-stream dam construction and all off-stream storages larger than 1 ML)? Has a Regional Water Management Officer completed a dam assessment report? Has a water licence to store water been obtained from DPIWE? Are there works associated with the creation of water districts requiring a development approval from council?

- ☐ State Policy on Water Quality Management 1997 (Page 4)

Do all works comply with the requirements of the State Policy? Have best practice environmental management strategies been adopted? Are water quality objectives being protected?

- ☐ Inland Fisheries Act 1995 (Page 4)

Is fish passage being maintained? Is fish habitat protected?

- ☐ Forest Practices Act 1985 (Page 4)

Do forestry activities affecting waterways & wetlands require a permit from local government? Will works comply with riparian clearance restrictions enforced by the Forest Practices Board?

- ☐ Threatened Species Protection Act 1995 (Page 5)

Are threatened flora or fauna likely to be affected by the works? Has there been investigations into the presence of threatened flora or fauna in the vicinity?

- ☐ Environment Protection & Biodiversity Conservation Act 1999 (Page 5)

Does the project or development have a 'significant impact' on matters of 'national environmental significance' - e.g. Ramsar wetland site?

- ☐ Aboriginal Relics Act 1975 (Page 5)

Is there likely to be some evidence of Aboriginal occupation in the vicinity of works site? Will works interfere, conceal, remove, damage or destroy an Aboriginal relic?

- ☐ Historic Cultural Heritage Act 1995 (Page 5)

Will works affect a site on the Tasmanian Heritage Register or Register of National Estate? Has the planning authority or Heritage Council approved a works application?

- ☐ Agricultural & Veterinary Chemicals (Control of Use) Act 1995 (Page 6)

Is the herbicide to be used approved for use near waterways? Are the requirements within the Code of Practice for Ground Spraying being met?

- ☐ Weed Management Act 2000 (Page 6)

Is the weed targeted for removal declared under the Act? Has a Weed Management Plan been developed for the target weed?

- ☐ Mineral Resources Development Act 1995 (Page 6)

Is a planning permit held where extraction is taking place within a waterway? Does the amount extracted require a mining lease to be issued?

- ☐ Public Health Act 1997 (Page 6)

Will water quality impacts of the activity likely to be a threat to public health?

- ☐ Complementary Resource Management Tools (Page 7)

Are Rivercare Plans, Natural Resource Management Plans or other resource management tools available to enable a strategic approach to on-ground works?

Appendix 1: Determining ownership of riparian areas

Legislative changes over the years has meant that determining ownership of riparian areas is not always clear cut and may require some research. The Land Information System Tasmania (LIST) is available to local government for checking land titles (<http://www.thelist.tas.gov.au/index.html>). The most likely scenario is that a piece of land will either be private land or crown land.

Option 1: Private land (freehold title)

Private land is subject to riparian rights exercised by landowner. These are natural rights arising from ownership of the land. Adjoining landowners generally own to middle of the streambed unless the title says otherwise (i.e. may be a riverside reserve, see below). Many wetlands are also under private ownership.

Option 2: Crown land reserved under different Acts

Riparian land and wetlands may be 'public reserves' as declared by ministerial order under section 8 of the Crown Lands Act 1976 (CLA 1976). These are declared for a variety of public purposes as set out in schedule 5 (conservation, public recreation, cultural values etc.). The origins of some public reserves on major streams and rivers may predate the CLA 1976. A consequence of this is the possibility of different width buffer zones - 15 metre, 20.1m (one chain) or 30.5 metre (100 feet) - between the streambank and adjoining private land. The presence or absence of fences is not always a reliable method for determining tenure.

Riparian land and wetlands are also found within the more extensive areas covered by the National Parks and Wildlife Act 1970 (declared reserves: National Park, State Reserve etc.) and the Forestry Act 1920 (State Forest and Forest Reserves).

These guidelines should be used in conjunction with the appropriate technical advice and literature.

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Environmental Best Practice Guidelines 2. Construction Practices in Waterways and Wetlands

Undertaking works in waterways and wetlands without expert advice can cause environmental harm that may be difficult and expensive to remediate.

1. Potential environmental effects

Undertaking works and operating machinery in and near waterways and wetlands can cause environmental harm by

- eroding stream beds and banks
- filling in deep holes and pools
- destroying riparian and wetland vegetation
- smothering aquatic vegetation
- killing aquatic animals
- polluting water
- exacerbating flooding.

2. Environmental management principles

Before starting works in waterways and wetlands a works plan should be prepared. The plan should outline the works to be undertaken and the measures that will be used to minimise the risk of causing environmental harm. The measures outlined should include those described below. These measures should be required of all contractors and plant operators working in waterways and wetlands.

2.1 Prepare for works

- Expert advice should be sought before excavating in waterways and wetlands. Depending on the scale of the works, advice may needed from one or more experts, including a stream biologist, river engineer, fluvial geomorphologist or hydrologist.
- The risk of causing environmental harm should be minimised. Short-term disturbances may be unavoidable but steps should be taken to minimise their effects at the site as well as upstream and downstream of the site. The environmental harm that could result from the works should be assessed and measures developed to minimise the harm. For example, works should be avoided when aquatic species are migrating and birds are breeding.
- The proposed construction methods and procedures should be specified in the works plan.
- All downstream neighbours and river users, such as water authorities, should be notified of the works.
- All relevant authorisations for the works should be obtained. See *Environmental Best Practice Guidelines 1. Legislative and Policy Requirements for Protecting Waterways and Wetlands when Undertaking Works*.
- Everyone involved in the works should attend a site briefing before starting work.

2.2 Minimise sediment disturbance and control erosion

- The works should be scheduled appropriately. For example, works should be timed to coincide with periods of low flow and completed quickly, and works should be stopped if conditions are not suitable, such as during and after heavy rain.
- Damage to the ground cover should be minimised and confined to the works site. Blading and grubbing of the banks and the area adjacent to the works site should be avoided. The width of

any access tracks should be minimised. Vegetation on unstable and erodible banks should be cleared by hand. If possible, trees should be felled away from the waterway.

- In-stream structures (culverts, etc) should be installed according to the manufacturer's specifications.
- The type and size of any heavy machinery and attachments (eg crab-grab) should be appropriate for the site and the works being done.
- All machinery should be kept out of the waterway on dry and stable areas within the works site.
- Existing crossings should be used to move equipment across the waterway. If there is no crossing and the stream must be crossed, any disturbance should be minimised. If crossing once, the machinery should be carefully 'walked' across the stream. If crossing many times, a temporary crossing should be made by laying a pad of clean rock at a shallow point of the waterway. The rock should be removed when works have finished.
- When excavating the channel, the flow should be diverted and the works site isolated. Sometimes, if the environmental risk is small and the flow is low, it may be possible to do the works without a diversion structure. The stream should be diverted by constructing a cofferdam, berm or temporary channel. The cofferdam should be constructed using sandbags, clean rock, steel sheeting or other non-erodible material. Clean rock is rock of varying type and size, that contains no fines, soil, wastes and contaminants. Temporary diversion channels should be protected by lining them with non-erodible materials to the high water mark.
- Boulders, rock, shingle, gravels, soil and vegetation from the stream bed and banks should not be used or removed without authorisation. Any use or removal should be specified by a river engineer.
- Excavated material should be placed well away from the waterway to minimise erosion back into the stream. Fill should not be pushed into the waterway or stored in flood-prone areas.



Keep machinery off wet and unstable areas



If excavating the channel isolate the works site

- Surface and sub-surface flows at the site should be managed to minimise erosion and sedimentation of the waterway or wetland. Geo-textile sediment fences should be used to stop sediment entering the water. They should be installed along the bases of fills and cuts, on the downhill side of soil stockpiles, and along stream banks and around wetlands adjacent to cleared areas. They should be installed along a contour, and be entrenched and staked. They should extend the full width of the cleared area.
- Any runoff from the works site should be diverted into a settling pond or sediment trap, or through a vegetated area to stop sediment entering the waterway or wetland. The settling basin or sediment trap should be designed so its capacity is large enough for the size of the area being drained and the volume of water being treated.
- The publications listed in 'Section 3. References' contain detailed information on managing soil and water at works sites.



Sediment fences need maintenance to remain effective

2.3 Avoid contaminant spills

- All workers should be trained and equipped to contain equipment spills and leaks.
- If a spill occurs, immediate steps should be taken to stop it polluting the water, including the ground water. The spill should be reported to the appropriate authorities as soon as possible.
- Petroleum products and other hazardous substances should be kept out of the waterway. Refuelling, top-ups and oil checks should be done well away from the waterway. Fuel, and servicing and refuelling equipment should be stored so the fluids cannot enter the waterway.

Non-toxic hydraulic fluids, such as vegetable-based fluids, should be used if possible. All equipment should be inspected and repaired regularly to prevent oil and other fluids leaking into the waterway.

- If equipment is to be immersed in the waterway, it should be cleaned beforehand to remove any external grease, oil and other fluids. Wash-down water is not to enter the stream.
- Dirt and mud should be removed from all equipment before entering the works site and waterway to avoid transferring weeds and disease. Wash-down water is not to enter the stream.
- Fresh concrete should be kept out of the waterway. If practical, prefabricated structures and precast components should be transported to the site and assembled on site. Any cast-in-place concrete should be isolated from the waterway for at least 48 hours to allow the pH to neutralise.
- Paints should not be allowed to enter the waterway when constructing, repairing and maintaining in-stream structures.
- When using wood treated with preservatives, the chemicals should be given enough time to fix before immersing the wood in the water.

2.4 Stabilise and rehabilitate banks

- The site should be rehabilitated when the works have finished. If practical, native vegetation should be established on all exposed soil surfaces, including the headslopes of any bridges and culverts.
- Temporary erosion control measures, such as geo-textile silt fences, diversion ditches, sediment traps and temporary seeding with fast growing annuals, should be used to control erosion at the works site and in the table drains of any approach roads. These should remain in place until the long-term erosion control methods are established and functioning.
- Long-term measures should be used to control erosion at the works site. Suitable measures include slope stabilisation, revegetation, soil coverings, rip-rap and armouring, check dams, sediment traps, brush barriers and vegetation filters. The measures used should be inspected and maintained regularly to make sure they are effective.

3. References

Hobart Regional Councils. 1999. *Guidelines for Soil and Water Management*. Hobart Regional Councils, Hobart.

Hobart Regional Councils. 1999. *The Soil and Water Management Code of Practice for Hobart Regional Councils*. Hobart Regional Councils, Hobart.

Launceston City Council. 2000. *The Soil and Water Management Code of Practice for Launceston City Council*. Launceston City Council, Launceston.

These guidelines should be used in conjunction with the appropriate technical advice and literature.

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Checklist

This checklist summarises the environmental management principles outlined in *Environmental Best Practice Guidelines 2. Construction Practices in Waterways and Wetlands*. The plan of works prepared should describe the proposed works and show that the measures listed below will be used to minimise the risk of causing environmental harm during and after the works.

- ☐ Works plan prepared

Prepare for works (Section 2.1)

- ☐ Expert advice sought
- ☐ Risk of causing environmental harm assessed
- ☐ Construction methods and procedures specified
- ☐ Downstream neighbours notified
- ☐ Water authorities notified if appropriate
- ☐ Appropriate authorisations obtained
- ☐ All site workers briefed

Minimise sediment disturbance and control erosion (Section 2.2)

- ☐ Works scheduled appropriately
- ☐ Ground cover disturbance minimised
- ☐ In-stream structures installed to manufacturer's specifications
- ☐ Heavy equipment appropriate for site and works
- ☐ Machinery restricted to dry and stable areas
- ☐ Crossing sites selected if appropriate
- ☐ Works site isolated from channel
- ☐ Any removal of boulders, rock, shingle, gravels, soil and vegetation authorised
- ☐ Excavated material placed away from waterway
- ☐ Sediment control devices selected and sited appropriately

Avoid contaminant spills (Section 2.3)

- ☐ Contingency plan prepared that outlines measures to minimise likelihood of spills on site and response if spills occur
- ☐ Workers trained and equipped to contain spills
- ☐ Refuelling and servicing equipment located away from waterway
- ☐ Arrangements made to clean vehicles and other equipment away from waterway
- ☐ Hazardous materials kept out of waterway

Stabilise and rehabilitate banks (Section 2.4)

- ☐ Site rehabilitated and stabilised
- ☐ Temporary erosion control measures installed
- ☐ Long-term erosion control measures installed and inspection and maintenance plan prepared

Environmental Best Practice Guidelines 3. Excavating in Waterways

Many works in waterways involve excavating stream beds and banks. Such works include stabilising stream beds, protecting and stabilising stream banks, diverting streams, creating channels to drain land and alleviate floods, deepening stream holes to increase the capacity of water off-takes, extracting sand and gravel, and works associated with developing infrastructure, such as bridges and pipelines.

Excavating can severely degrade or destroy ecosystems in waterways and wetlands so the precautionary principle should be followed. Excavating should not be allowed if it is likely to cause significant environmental harm. If the works will result in substantial benefits and minimal harm to the waterway and surrounding environment, excavating the bed and banks may be acceptable. However, the appropriate safeguards must be taken.

1. Potential environmental effects

1.1 Changes stream geomorphology

River systems will move towards a state of dynamic equilibrium after disturbance. A stream modified by removing alluvial material or channelising will attempt to revert to its 'natural' state. The resulting erosion, increased sediment transport, and reduced water quality may continue or even accelerate for many years after the works have been completed. Continual maintenance may be needed to control this process.

Removing alluvial material from the stream bed

Extracting material from the stream bed can trigger changes in the stream profile, along the stream and from bank to bank. Changes to the flow regime and disturbing the balance between the supply of sediment and the sediment carrying capacity of the flow can have the following effects.

Headcut erodes the stream bed: Excavating the channel deepens the stream bed. A nick point is created in the bed at the point where the flow velocities increase due to the steeper gradient. If the increased flow velocities erode the stream bed, the nick point migrates upstream in a process known as 'headcutting'. This continues until the gradient of the stream stabilises or the nick point meets an obstacle, such as a rock outcrop. Headcutting releases large amounts of sediment from the stream bed, which is transported and deposited downstream. The deposition fills in deep holes and pools, and changes the form of the channel.



Headcut eroding stream bed

Increased flow capacity affects sediment movement: Excavating the channel increases its cross-sectional area and hence its flow capacity. Larger floods ('1 in 2 year floods' and up) are more readily contained within the modified channel and are less likely to have their energy dissipated across the flood plain. This increases the stream energy during floods, which further erodes the channel, and increases sediment supply and transport from the stream reach.

Collapse of stream banks due to increased height: Deepening the stream bed can increase the height of the stream banks and make them more prone to erosion and collapse. If the banks collapse, the sediment load in the stream will increase. Widening of the stream due to extensive bank collapse increases flow capacity, and increases sediment supply and transport downstream.

Removal of gravel armouring the stream bed: Removing gravel that is protecting or 'armouring' the stream bed and stabilising the banks and bars may expose material that is more susceptible to erosion. If this occurs, excessive scouring of the bed and movement of sediment may result.

Loss of stream roughness: Removing objects that create roughness in the stream, such as large woody debris and boulders, when excavating can reduce the structural integrity of the stream and ecosystem health. These objects help control the morphology and hydraulics of the stream, and help regulate the storage of gravel and other sediments.

Channelising

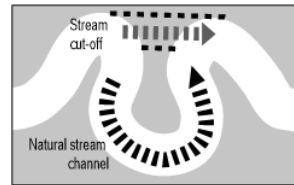
In general, increasing the stream's flood carrying capacity by channelising the stream - that is, re-aligning the channel and smoothing the banks - decreases the stability of the stream. This can result in unforeseen and unintended erosion upstream and downstream of the channelled section.

Increased slope increases flow velocities: Constructing meander cut-off channels and re-aligning the stream usually shortens the stream, which steepens its gradient. Abrupt changes in the slope of the channel cause erosion and degradation of the channel upstream, and aggradation (increased silt, sand or gravel deposition) of the channel downstream (see Figure).

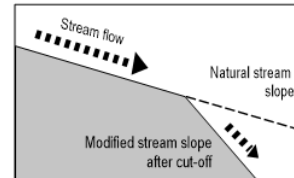
The significance of increased flow velocities depends on the composition of the bed and banks and the state of the riparian vegetation cover. Coarse, rough materials, such as cobbles and gravel, are more resistant to erosion from increased flow velocities than clay, fine sand and unconsolidated fill. A wide, healthy cover of native riparian vegetation helps resist erosion.

Increased flow downstream increases bank erosion:

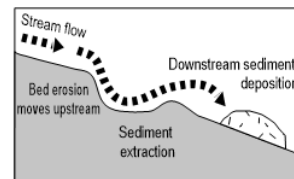
Larger volumes of flow being funnelled downstream can destabilise the banks due to the greater erosive forces of the flow and more frequent overtopping of the banks. The amount of water flowing in a waterway shapes the profile of the stream channel (along with sediment load) so increasing the flow may trigger further changes in the stream profile.



Channel diversion & loss of meander will shorten the channel, and...



...this will increase the slope of stream bed, which...



...increases flow velocity, causing 'headcut' erosion in the upstream direction and sediment deposition downstream.

Bed erosion due to channel diversion
(adapted from WA Water & Rivers Commission,
River Restoration Report No. RR10 - Stream Stabilisation.)

1.2 Effects on surface and ground water flows

In-stream works can change the local hydrology and lead to unpredictable changes in the surface and ground water flows.

Removing alluvial material

Excavating the stream bed and banks may lead to

- a lower water table
- reduced bank storage
- drainage of associated wetlands
- greater variations in stream flow
- more intermittent stream flows
- more uniform stream flow conditions.

Channelising

Straightening the stream and smoothing the banks will increase the flow capacity and flow velocities of the stream. This may have a number of consequences, including

- The higher average flow velocities may aggravate flooding downstream.
- The greater quantity of water flowing may trigger unintended changes in the course of the stream.
- Improved drainage of the land adjacent to the stream may increase the discharge of ground water, which may reduce the amount of water available for stream flows during dry periods.
- Stockpiles of soil and overburden left on the floodplain after excavating may change the hydraulics of the channel during floods.

1.3 Degrades aquatic and riparian habitat

The physical and biological changes arising from works in streams may reduce the abundance, composition and diversity of plant and animal species, especially sensitive species, and reduce the health of ecosystems. The effects may not be confined to the works site. They may also extend a long way upstream and downstream.

Excessive suspended sediment: Excavating changes the physical composition and stability of substrates in the stream and releases large amounts of sediment into the stream. Other activities at the works site, such as clearing, grading, stockpiling of materials and constructing an access track, can erode soil into the waterway and increase sediment loads (see *Environmental Best Practice Guidelines 2. Construction Practices in Waterways and Wetlands*). Clearing the riparian vegetation when excavating may increase the sediment load in the stream because less sediment is filtered from the overland flow. Operating heavy equipment in the channel bed can increase turbidity and suspended sediment downstream (see *Environmental Best Practice Guidelines 2. Construction Practices in Waterways and Wetlands*).

Increased sediment loads and increased deposition can create an unstable environment that is hostile to many fish and other aquatic animals by

- creating conditions favourable only to silt-tolerant plants and animals
- reducing the availability of benthic food due to smothering
- reducing light penetration and productivity of the waterway
- making it difficult for plants and animals to respire
- reducing the tolerance of fish to diseases and pollutants
- increasing physiological stress in fish by clogging and damaging their gills
- smothering fish eggs and reducing the success of spawning.

Removal of riparian vegetation: Trees and vegetation may have to be removed from the banks so workers and equipment can reach the excavation site. Collapse of the stream banks and lowering of the water table as a result of excavation can also destroy riparian vegetation. Less riparian vegetation may

- exacerbate fluctuations in water temperature and reduce the concentration of oxygen in the water by reducing shade
- reduce the amount of food, shelter, and spawning and breeding habitat available for aquatic and terrestrial animals.



Channelising the stream can destroy riparian habitat

Less diversity of aquatic habitat: Channelising the stream produces a straight, uniform channel with fewer features, such as pools, riffles, and undercut banks, that are important habitat for aquatic animals. Removing large woody debris, boulders, and so on during excavation works further simplifies the structure of the stream and reduces the range of habitats available. Operating heavy equipment in the channel bed may degrade or destroy habitat.

Habitat may also be lost if the works result in a shallower stream. Low water levels may expose riffles and cobble substrate in high gradient streams, and logs and snags in low gradient streams - all of which are important habitat for fish and other aquatic animals.

Restricts fish movement: Shallower surface flows caused by excavating in the stream may stop fish migrating upstream during low flows. The water may be too shallow for fish to remain submerged as they cross shallow sections. Previously submerged structures, such as logs and rock shelves, may no longer be submerged and may create a barrier that fish cannot get over.

1.4 Damages infrastructure

Erosion triggered by excavating the stream may damage public and private property far from the works site. Channel incision may undermine bridge piers and expose buried pipelines and utility lines. Exacerbating flooding downstream may increase the risk of damaging infrastructure and necessitate the construction of flood-protection structures, such as flood levees.



Excavating the stream may lead to infrastructure loss

Excavating streams does not always cause instability upstream and downstream. However, nearby landowners may attribute such problems to the excavation works and may take legal action to recoup their perceived costs.

1.5 Degrades water quality

Excavating streams can increase sediment loads and turbidity downstream, which may degrade the quality of domestic and stock water supplies. A new channel course may increase or decrease runoff and sediment input from the adjacent land. If the increased runoff is from agricultural land, more salts, nutrients and pesticides may be discharged into the stream. If town water supplies have to be treated, this will involve additional costs for the supplier.

1.6 Reduces recreational and aesthetic values

Recreational activities, such as fishing, swimming and bird-watching, need streams that are relatively free of sediment and visible pollutants. Excavating streams can reduce their recreational values if sediments and pollutants are mobilised. Preserving landforms and vegetation cover when excavating will preserve the stream's aesthetic values.

2. Methods for controlling erosion

Before undertaking works to control erosion in streams it must be determined that the rate of erosion justifies the cost of the works, and that the works are likely to be successful and not create new problems. The methods used will depend on the scale of the erosion problem. Methods that stabilise and protect the banks are usually appropriate for managing localised bank instability, such as erosion of meander bends. If there is severe degradation of the stream bed, the bed may need to be stabilised before stabilising the banks. A variety of bed-control structures (also referred to as grade-control or full-width structures) can be used for this purpose. Extensive degradation of the river system may need a catchment-based approach that focuses on changing land use in the catchment.

The design requirements of structures to control and stabilise stream beds and banks can be found in the following publications

- The WES Stream Investigation and Streambank Stabilization Handbook (Biedenharn et al., 1997)
- Riparian Land Management Technical Guidelines Volume 2: On-ground Management Tools and Techniques (Lovett & Price, 2002)
- A Rehabilitation Manual for Australian Streams, Volume 2 (Rutherford et al., 2000)
- Guidelines for Stabilising Waterways (SCR&C, 1991)
- Stream Stabilisation. River Restoration Report No. 10 (WRC, 2001b).

2.1 Stabilising the banks

The two main approaches to controlling bank instability are re-aligning the flow and modifying the stream bank. At some sites both approaches will be needed.

Re-aligning the flow

The re-aligning approach uses structures that extend part-way into the channel to redirect the flow so the hydraulic forces along the bank are reduced and do not cause erosion, or the flow is directed away from the erodible bank. The partial-width structures most commonly used are groynes (extend

from the eroding bend into the channel at an angle to the flow) and retards (a series of piles with cross members that provide a permeable barrier to flow). Large woody debris anchored to the bank can also be used (see *Environmental Best Practice Guidelines 6. Managing Large Woody Debris in Waterways*). If placed appropriately, a series of any of these structures will reduce flow velocities near the bank and increase sediment deposition along the bank, which will allow revegetation.



Seek expert advice if installing bank stabilisation structures such as pin groynes

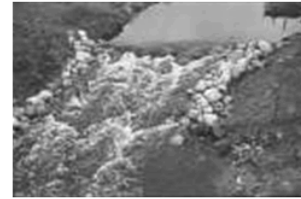
Other structures that can be used are pin retards (unconnected pins), brush retards (pins connected by branches), jacks (tripods anchored by cables to each other and the bed), and low flow deflectors (low profile structures extending into the stream).

Modifying the banks

Stream flow is not the only cause of bank erosion. Inadequate vegetation cover, trampling by stock, and overland flow can also trigger bank erosion. It is important to determine the cause of the erosion so the most appropriate remedy can be used. The range of remedies is considerable. Revegetating the bank is probably the best remedy from an environmental and aesthetic perspective. However, revegetation must be combined with other approaches if the bank instability is too great. Battering or terracing the bank may be necessary to reduce the slope of the bank and allow plants to establish. Using organic geo-textile mats (natural fibre mats) will provide better conditions for growing plants if the area is not subject to high velocity flows. If the bank instability is due to undermining of the bank, the bank toe can be hardened by installing rock gabions (stone-filled wire cages) or rock rip-rap (loose rock). Dead trees and root wads can be used instead of rock in some situations.

2.2 Stabilising the bed

Bed-control structures stabilise the stream bed. They stop the active headcut moving upstream (including into tributaries) by creating a hard point in the bed that resists the erosive forces. Alternatively, they change the hydraulic conditions so the stream energy no longer scours the bed. Some bed-control structures do both.



Seek expert advice if installing bed control structures such as rock chutes

Bed-control structures usually span the width of the channel and allow some overflow. They also allow a temporary backwater pool to form upstream, and a permanent, stable scour pool to form downstream. Rock chutes are the most commonly used bed-control structures because rock is long lasting and copes with high flows. Grass chutes are sometimes used on seasonal waterways with low base flows. Reinforced-concrete drop structures and piped drops are less desirable because they may stop fish swimming upstream. Timber, can also be used, either a single log that spans the channel to form a low weir or angled logs that meet in the centre and concentrate low flows.

2.3 Changing land use in the catchment

Activities such as clearing vegetation, draining wetlands and damming streams will affect erosion in the catchment's waterways by changing the sediment loads and water yields. A catchment-based approach, such as a natural resource management framework, can be used to restore the sediment loads and water yields in the catchment to as close to their 'natural' levels as possible. For example, sediment going into the catchment's waterways may be reduced by establishing riparian buffer zones throughout the catchment and promoting better ways of managing stormwater.

3. Environmental management principles

Before excavating in waterways and wetlands a works plan should be prepared. The plan should outline the works to be undertaken and the measures that will be used to minimise the risk of causing environmental harm. The measures outlined should include those described below.

3.1 Get expert advice

- Undertaking works in streams without expert advice can cause environmental harm that may be difficult and expensive to remediate. Expert advice should be sought before excavating the bed and banks of waterways. Depending on the scale of the works, advice may be needed from one or more experts, including a stream biologist, river engineer, fluvial geomorphologist or hydrologist.

3.2 Avoid works on high risk sites

- The location and extent of any proposed excavation should be assessed on a case-by-case basis.
- The proposed works should meet the requirements of all relevant legislation, policies and regional strategies. Other ways of achieving the objectives of the works should be considered.
- Streams containing threatened plants and animals and having pristine ecosystem Protected Environmental Values should not be excavated.
- Significant geomorphological and cultural heritage sites should be protected.
- Avoid excavating upstream of nearby drinking water supplies and industrial water off-takes that need high quality water.
- The risk of damaging public and private infrastructure should be considered.
- The works should not damage recreational and aesthetic amenities.
- The likelihood that the sediments contain toxic materials, such as pesticides and metals, should be determined. If sediments upstream and downstream of the works site could be disturbed, these should also be assessed.
- Extracting sand and gravel from a waterway is only acceptable in rare situations where it benefits the waterway and surrounding environment. For example, where human activities outside the river reach have caused a build-up of sand and gravel (sediment slugs) that has eroded or changed the course of the stream, or destroyed habitat.

3.3 Understand site and system

- Waterways are complex systems and excavating them can cause unexpected consequences. Having accurate information about the stream channel and the discharge of water that shapes it, is critical to ensuring the works will be successful and harm minimised. Information about the geomorphology and land use in the catchment and sub-catchment should also be obtained. Stream Channel Analysis. River Restoration Report No. 9 (WRC, 2001a) (available on the internet) describes the information that should be collected before starting works. Groups and individuals excavating streams without this information risk causing environmental degradation, and having structures fail and costly maintenance problems afterwards.

Desk top survey to gather information about the stream area and catchment history	Field work to survey the stream and its catchment and gather information from locals	Calculations based on the information gathered that help plan the works
Catchment area and use	Longitudinal channel survey	Channel slope
Estimates of channel dimensions	Bank-full level	Average bank-full
Flow records	Stream cross-section	Wetted perimeter
Determine channel forming flow from flow records	Existing flow velocity	Channel roughness
Longitudinal survey of river channel	Assess bed material	Hydraulic radius
	Sketch map of channel	Median bed paving
	Assess foreshore and habitat	Flow velocity
		Discharge
		Stream power
		Critical flow

3.4 Adopt construction practices guidelines

- Contractors and plant operators undertaking works in streams should adopt the principles outlined in *Environmental Best Practice Guidelines 2. Construction Practices in Waterways and Wetlands* to minimise the risk of causing environmental harm. These guidelines focus on preparing for works, controlling sediment and erosion, avoiding contaminant spills, and stabilising and rehabilitating the stream.

3.5 Retain stream geometry, materials and habitat

- The stream should be restored to its 'natural' state after works have been completed. This will be easier if information about the waterway's environmental and aesthetic values was collected before the works started. Similar healthy, unmodified reaches in the catchment can be used as models if the site is degraded.
- Local, natural materials, such as rock and timber, should be used if possible. Artificial materials, such as concrete, old tyres and gabions, are less attractive. They also create a different flow regime to that of the original channel, need considerable maintenance, and do not provide good habitat for aquatic animals. The local materials should come from an appropriate source, such as an approved quarry.
- Creating large discontinuities in the water surface profile should be avoided. A vertical drop of more than 10 centimetres will stop native fish swimming upstream.
- A series of structures (eg a pool and riffle sequence or a series of large woody debris) should be used rather than a single structure if possible. More complex structures create a greater variety of habitats while still preventing erosion.
- Elements that create roughness in the stream, such as large woody debris, are critical for maintaining healthy aquatic ecosystems and should be restored.

3.6 Stabilise stream diversion (if required)

- If the channel is being re-aligned, the flow must be diverted into a properly designed and constructed channel that has been stabilised. It should not be diverted into an undefined channel.

3.7 Protect stream-entry points

- If extensive surface runoff may enter the receiving channel, the runoff should be directed through properly designed and constructed drainage ditches.
- It is best if drainage ditches and streams have small gradients as they approach and enter the receiving channel. If the gradient of the incoming drain or stream is steep, it may be necessary to line it with protective rock to prevent erosion of the receiving stream. If necessary, rip-rap may be used to line the bank of the receiving channel and prevent erosion and slumping of its banks.

3.8 Avoid constructing levee banks

- Levee banks are considered to be channel works even though they are not constructed in the stream channel. Levee banks deepen the flow channel during floods, which increases the likelihood of erosion along the stream bed and banks.
- Using large, long levees to prevent flooding of flood plains adversely affects the channel system and adjacent areas. Wetlands and riparian areas often rely on flooding to supply nutrients and trigger plant growth. Diverting flood waters away from these areas may make it difficult or impossible for plants to survive.
- If possible, development should be avoided on flood-prone areas. This removes the need to construct flood-protection structures.

3.9 Revegetate

- Deep-rooted plants, such as trees and shrubs, should be planted along the banks to stabilise the channel, provide shade to control water temperature, provide habitat and food for animals, and create an attractive and healthy waterway. Local, native riparian species should be used if possible.

- The works site should be monitored and maintained after revegetation to make sure the plants establish and weeds are controlled.

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Checklist

This checklist summarises the environmental management principles outlined in *Environmental Best Practice Guidelines 3. Excavating in Waterways*. The plan of works prepared for all works involving excavation in a waterway should describe the proposed works and show that the measures listed below will be used to minimise the risk of causing environmental harm during and after the works.

- ☐ Works plan prepared

Methods for controlling erosion (Section 2)

- ☐ Appropriate erosion-control method/s selected

Get expert advice (Section 3.1)

- ☐ Expert advice sought

Avoid works on high risk sites (Section 3.2)

- ☐ Environmental risk assessed
- ☐ Legislative and policy requirements met
- ☐ Sensitive ecosystems protected
- ☐ Geomorphological and cultural heritage sites protected
- ☐ Downstream water supplies and sensitive industrial off-takes not affected
- ☐ Public and private infrastructure not threatened
- ☐ Recreational and aesthetic effects minimal
- ☐ Public safety and use protected
- ☐ Contaminated sediments not present

Understand site and system (Section 3.3)

- ☐ Stream survey undertaken

Adopt construction practices guidelines (Section 3.4)

- ☐ Works conform to *Environmental Best Practice Guidelines 2. Construction Practices in Waterways and Wetlands*

Retain stream geometry, materials and habitat (Section 3.5)

- ☐ Natural geometry, materials and habitat maintained or restored

Stabilise stream diversion (Section 3.6)

- ☐ Diversion channels stabilised

Protect stream-entry points (Section 3.7)

- ☐ Stream entry points protected

Avoid constructing levee banks (Section 3.8)

- ☐ Flood protection used to minimise environmental effects

Revegetate (Section 3.9)

- ☐ Rehabilitation and revegetation program prepared

Environmental Best Practice Guidelines 4. Minimising Environmental Harm from Agricultural Drainage Channels

Agricultural lands are usually drained to improve crop production. Drainage removes excess water from the soil surface and the soil profile of crop land and pasture by gravity or artificial means. This helps create a well aerated soil, which enables better uptake of nutrients by plants. Draining wet soils allows early ploughing and planting, vigorous crop growth, and better productivity. Sub-surface drainage may also be used to prevent salinity in heavily irrigated soils.

Properly planning, designing and maintaining drainage channels will minimise the likelihood that they cause environmental harm and alleviate some of their adverse effects.

1. Potential environmental effects

Agricultural drainage improves crop production but it can also cause environmental harm.

Degrades waterways: Drainage works, such as straightening channels so water moves downstream faster, can alter the morphology and function of waterways. This can trigger erosion of the stream bed and banks, and degrade aquatic and riparian habitats.

Destroys wetlands: Wetlands perform important hydrological, biological, chemical and physical functions for the environment at the farm and catchment levels. They provide temporary water storages that reduce flooding during periods of high rainfall. They provide habitat for wetland plants and animals. They act as a filter or 'sink' for sediments and nutrients moving through the catchment. Draining wetlands destroys these functions.

Increases sediment loss during construction: Constructing drains can cause increased erosion and soil transport in the surface water. The effects may be only temporary as they may diminish when the exposed soil has been revegetated and stabilised. However, the increased movement of sediment may persist if the drainage leads to greater surface runoff.

Increases erosion due to increased water velocity: Drains on sloping land can increase water velocities. This can lead to erosion of the base and banks of the drains, greater transport of sediment, and siltation downstream. Serious erosion may occur even on very low gradient slopes (1:100 or less) if there is no vegetation cover.

Exacerbates flooding downstream: Improved drainage can lead to flooding elsewhere if more water enters the waterway during times of high rainfall. If the receiving waterway is unable to accommodate the extra water, flooding, erosion and habitat disturbance downstream may result. 'Solving' the flooding problem at a site by building a drainage system may cause or increase the severity of flooding downstream. Drainage may move the problem rather than solve it.

Degrades water quality: Draining land may reduce the quality of water in the receiving stream by increasing the amount of sediment, fertiliser, herbicide, pesticide, organic waste and other pollutants washed into it. The pollutants may adversely affect aquatic plants and animals, and restrict water use downstream.

Increases drain outfall erosion: Headward erosion in the base of the outfall drain may result if there is no outlet structure and there is a substantial drop between the outlet of the agricultural drain and the normal low flow level of the stream. Extensive bank erosion may result if the drainage flow goes under or around the outfall pipe or upstream headwall. The erosion may also destroy the outfall structure.



Drainage works can have significant environmental impacts



Badly designed drainage works can trigger serious erosion

2. Environmental design requirements

Before starting drainage works a works plan should be prepared. The plan should outline the works to be undertaken and the measures that will be used to minimise the risk of causing environmental harm. The measures outlined should include those described below.

Further information on farm drainage can be found in the Drainage Information Package produced by the Department of Primary Industries, Water and Environment (DPIWE, 2002).

2.1 Seek expert advice

- Undertaking drainage works without obtaining expert advice can cause environmental harm that may be difficult and expensive to remediate.
- Professional advice will usually be needed when designing a drainage system. In some cases only a preliminary assessment will be needed. However, for larger systems detailed soil analyses, and hydrological and hydraulic design engineering advice may be needed.
- Advice should be sought from one or more experts, such as a river engineer, soil manager or hydrologist, before excavating stream beds and banks.

2.2 Plan adequately

- All relevant legislative and policy requirements should be taken into account when planning a drainage system (eg Ramsar wetland sites, threatened species, possible water pollution). See *Environmental Best Practice Guidelines 1. Legislative and Policy Requirements for Protecting Waterways and Wetlands when Undertaking Works*.
- Drainage works may increase or decrease flows on neighbouring properties. Neighbours should be notified of the proposed works and their consent obtained. This will reduce the likelihood of legal action being taken to remedy flood damage or perceived changes in water availability.
- Existing elements of the drainage system, such as natural channels, wetlands and riparian vegetation, should be preserved. If possible, drains should be designed to follow the existing drainage lines in well defined depressions.
- The land capability should be determined. Will the slope of the land sustain the drainage proposed? Does the design need to be changed to minimise the risk of causing environmental harm?
- The soils should be analysed to make sure they can sustain the drainage proposed. Some soils are more prone to erosion than others. Specialised drainage systems may be needed for dispersive, saline or sodic soils and where acid-sulphate soils may occur.
- The drainage capacity must be adequate. The likelihood of floods and the extent of waterlogging should be assessed to determine whether the proposed drainage system can convey the volumes of water anticipated. Floodplain maps, if available, can help in this assessment.
- The drainage proposal must show how the drainage water will be disposed of. Disposing of good quality drainage water poses few problems. However, care must be taken to ensure that poor quality discharge water does not affect land and water supplies downstream. In these cases, the design must prevent any adverse effects. Sediment traps may be needed, or collecting and reusing the water on site may be a better alternative.

2.3 Drainage channel design and construction

- The drainage system should be constructed during the dry months to minimise muddying of the waterway downstream. The drain banks should be allowed to revegetate before water flows again.
- The drainage system should not be 'over-designed' so excessive earthworks and bank armoring are needed.
- Paddock drains should be constructed with the minimum effective gradient to avoid erosion. Flow velocities in the drain must be non-erosive: less than 0.6 metres/second in loams and silts, and less than 1.2 metres/second in clays and gravels.

- Steep drain banks (batters) should be avoided as they are more likely to erode than banks with gentle gradients.
- Open ditches should be flat bottomed rather than V-shaped to prevent scouring.
- The existing waterways should not be straightened because straightening will increase the steepness of the drainage system and increase erosion.
- Areas of bushland should be retained, particularly along drains, to slow runoff and filter stormwater pollutants.
- Grass or other ground cover should be planted in the drain to prevent erosion into the waterway. The vegetation will also hold the banks together.
- Access for drain maintenance should be provided.

2.4 Outlet design

- An outlet structure will usually be needed so the drainage entering the waterway does not erode the outfall drain and the stream bed and banks.
- The choice of outlet structure will be determined by the site characteristics. The outlet structure may be a natural depression, excavated earthen drain, pipe, rock chute, flume or drop structure. The hydraulic characteristics that should be taken into account include design flows, exit velocities, and tail-water levels in the receiving stream, and the effects of greater-than-expected flows.
- The smallest but most effective outlet should be installed at a number of points to reduce sediment and nutrient transport by reducing the amount of water discharged at any one point. This approach is often used in 'hump-and-hollow' drainage systems but it can also be used with more conventional open-ditch systems.
- The concrete cut-offs around the outlet structures should be large enough to prevent flows bypassing the outfall pipe and causing erosion around the structure.
- Advice on outlet structures should be sought from experts, particularly for larger drainage systems. Rivercare Engineers and DPIWE Regional Water Management Officers are good sources of initial advice and referral.



Drainage line discharge should not flow unconfined across the landscape

2.5 Maintenance

- Stock access to the drains should be controlled. Fencing off the drains stops stock damaging them and defecating into them. This reduces the need to de-silt the drains, which reduces maintenance costs. It also reduces nutrient levels, which restricts weed growth. The fences should be inspected regularly to make sure they have not been damaged.
- A carefully planned weed control program should be implemented annually. Using the wrong weed control methods could be expensive and make the drains ineffective. If using chemical sprays, select the right chemicals so that the weeds are controlled without killing animals, such as frogs and fish, that may live in the drain. Contact a DPIWE Regional Weed Management Officer for information on the most appropriate sprays to use. Further information is also available in the Rivercare Guidelines for Safe and Effective Herbicide Use near Water, which is available on the DPIWE website.
- Check regularly for erosion in the drains and receiving waterway. Remediate if necessary.

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Checklist

This checklist summarises the environmental design requirements outlined in *Environmental Best Practice Guidelines 4. Minimising Environmental Harm from Agricultural Drainage Channels*. The plan of works prepared should describe the proposed works and show that the measures listed below will be used to minimise the risk of causing environmental harm during and after the works.

- ☐ Works plan prepared

Seek expert advice (Section 2.1)

- ☐ Expert advice sought

Plan adequately (Section 2.2)

- ☐ Legislative and policy requirements taken into account
- ☐ Neighbours notified
- ☐ Natural channels, wetlands and riparian vegetation preserved
- ☐ Land capability assessment undertaken
- ☐ Soil assessment undertaken
- ☐ Drain capacity adequate
- ☐ Drainage water will not adversely affect water quality downstream

Drainage channel design and construction (Section 2.3)

- ☐ Construction scheduled for dry period
- ☐ Excessive earthworks and bank armouring avoided
- ☐ Drain gradient (longitudinal and bank) will not trigger erosion
- ☐ Drain flat-bottomed
- ☐ Areas of bushland along drain retained
- ☐ Grass cover in drain planted
- ☐ Access for drain maintenance provided

Outlet design (Section 2.4)

- ☐ Outlet structure appropriate
- ☐ Smallest, most effective drainage outlets chosen
- ☐ Concrete cut-offs large enough

Maintenance (Section 2.5)

- ☐ Drains fenced off to control stock access
- ☐ Weed control plan prepared
- ☐ Erosion inspection and maintenance program prepared

Environmental Best Practice Guidelines 5. Siting and Designing Stream Crossings

1. Background

These best practice guidelines discuss the siting and design principles that should be used to minimise environmental harm when constructing stream crossings. The principles should be considered by local councils when developing planning schemes and assessing planning permits for the construction of stream crossings.

Undertaking construction works in waterways and wetlands without expert advice can cause severe environmental harm that may be difficult and expensive to remediate. Depending on the scale of the works, advice may be needed from one or more experts, including a stream biologist, river engineer, fluvial geomorphologist or hydrologist.

2. Stream crossing types

The type of stream crossing selected will depend on the crossing's purpose and anticipated frequency of use, the site characteristics (bank height, bed stability, flow regime, depth, etc), and the budget.

If possible and appropriate, use the structure that is least likely to cause environmental harm. As a general rule of thumb, in descending order of preference, use bridges, arch culverts, open-bottom box culverts, closed-bottom box culverts, and pipe culverts.

Bridges are raised structures that carry a path or road over a waterway. They are used when frequent crossings are anticipated. Typically, bridges are used on waterways with clearly defined drainage channels, permanent and semi-permanent pools, and wetlands connected to rivers. Usually, they have little or no in-stream framework so they do not impede flows. As a result, they can be used during most floods.

Bridges are the most appropriate crossings for sites

- with actively eroding banks
- where the channel is too steep for a culvert
- with steep banks that would need considerable infilling if a culvert were used
- with threatened species, fish habitat or aquatic vegetation.

Culverts are arched, boxed or piped conduits that allow water to pass under a road or other structure. They are usually made of concrete or galvanised corrugated steel pipe. The location and size of the culvert will be determined by its flow capability requirements and the need for it to be safe during high flows. Like bridges, some large box and arch culverts do not significantly alter the form of the stream bed or the width of the channel.

Causeways are structures that raise the base of the stream bed. They allow water to go through a culvert underneath when flows are low but are inundated during floods. Typically, causeways are located on waterways with intermittent flows, poorly defined drainage channels, and semi-permanent pools that provide habitat for aquatic animals. They are suitable for wide shallow streams with gravel and soft substrate beds where it is too expensive to construct a bridge or culvert and intensive use is not anticipated.

Fords are vehicular crossings that are almost level with the river bed. Low flows pass over the structure rather than through a culvert below. They are used when infrequent use is anticipated (if more frequent use is anticipated, a permanent or temporary culvert may be needed to prevent disturbance to the channel). Fords are 'wet' crossings so they should be used only when flows are low or non-existent. Fords are suitable for intermittent waterways with little or no defined drainage channel, no lasting pools, and little or no vegetation.

Stock crossings are natural stream crossings that have had little or no modification. Stock crossings are 'wet' crossings so they should be used only when flows are low or non-existent. Stock are one of the major causes of environmental harm to waterways so stock access to waterways - and stock crossings - should be controlled and minimised.

3. Site selection

Crossings can cause severe environmental harm to waterways and are expensive to install so the number of crossings should be minimised. Existing crossings should be used if possible. If a new crossing is needed and there is a choice of sites, the site should be selected to comply with the following requirements

- the stream reach is straight, well defined and unobstructed
- a right-of-way exists
- to minimise need for training works the geology and soil conditions should be stable with minimal scouring, and minimal deposition and displacement of sediments (that is, little active erosion and meandering)
- select an area where the risk from environmental hazards such as floods and landslides is minimal
- the hydraulic effects of natural features (eg waterfalls) and artificial in-stream structures (eg weirs)
- avoid wetlands and floodplains
- avoid areas where the works could mobilise contaminated sediments
- avoid areas that have threatened species and pristine ecosystem Protected Environmental Values
- avoid areas with significant cultural heritage or geomorphological values
- select an area where disturbance to the riparian vegetation can be minimised
- select an area where public safety, use and enjoyment will not be compromised
- avoid areas of aesthetic value
- additional care will be needed if the crossing is upstream of domestic and town water supplies, aquaculture and other industrial off-takes, sensitive ecosystems, and recreational areas.

4. Bridges

Potential environmental effects

Reduces stream stability: Mobilising and removing alluvial material during construction, and scouring caused by the bridge's piers and footings can reduce the stability of the stream bed and banks.

Degrades water quality: Mobilising sediments during construction, and scouring caused by the bridge's piers and footings may increase the sediment load and turbidity of the waterway. Runoff from the bridge's decking and approach roads may also degrade water quality.

Destroys bank vegetation: The stream banks under bridges are usually permanently dry and shaded because light and moisture are blocked by the bridge. The resulting death of the vegetation cover can lead to instability of the banks, less filtering of overland flow, and a loss of food and shelter for animals.

Restricts movement of animals: The bridge footings and bank armouring may stop animals moving along the banks. This may force animals to use the nearby roads, which increases their chances of being killed on the road, particularly on busy roads.

Environmental design requirements

Before constructing a bridge a works plan should be prepared. The plan should outline the works to be undertaken and the measures that will be used to minimise the risk of causing environmental harm. The measures outlined should include those described below.

- Contractors and plant operators undertaking construction works in streams should adopt the principles outlined in *Environmental Best Practice Guidelines 2. Construction Practices in Waterways and Wetlands* to minimise the risk of causing environmental harm.
- The bridge should be designed and constructed to accommodate all flow conditions. Expert advice will be needed on a range of geographical, hydrological, hydraulic and geo-technical issues. If the bridge is to be used by the public and heavy vehicles, detailed design drawings should be submitted. The drawings should be certified by a qualified engineer and satisfy all the relevant Australian Standards.
- The bridge should be perpendicular to the waterway.
- The waterway's natural hydraulic regime should be preserved as much as possible. The piers and footings should be placed beyond the channel and above the high water mark to avoid constricting the channel and reducing the flow area.
- If the piers and footings must be placed in the channel, they should be parallel to the flow so the flow is not directed onto the banks. The minimum number of optimally shaped pylons should be used to minimise eddying and scouring of the waterway. Erosion protection should be included if scouring is likely to occur.
- Rock beaching is usually used on the batters to protect against scouring of the abutment because it is unlikely the area will revegetate due to a lack of light and moisture under the bridge. Generally, the beaching should extend three metres upstream and downstream of the bridge. The batters should be excavated to the depth of the beaching to maintain the channel area. The batter slope should be 1:1-1:2 (vertical:height). Generally, the beaching should extend at least 600 mm below the toe of the banks to prevent undermining. Rock beaching may not be needed if the banks are stable.
- Using grated decking on a multi-lane bridge, so light and moisture can penetrate, may be considered if the risk of pollution from road spills is minimal.
- If possible, enough space should be provided under the bridge for animals to walk along the banks.
- Steep approaches to the bridge should be avoided.
- Cross-fall drains should be used to drain water from the access road into a sediment trap or the roadside vegetation. The drains should be at least 20 metres away from the crossing.



The number of piers and footings should be kept to a minimum in stream channels

5. Culverts

Potential environmental effects

Degrades stream bed and associated habitats: If a culvert replaces a section of the stream, the stream bed and its associated aquatic and riparian habitats will be lost.

Initiates erosion of channel: If a culvert is installed too high - so the downstream end lies above the stream bed (perched culvert) - a waterfall will result. This can lead to bed scouring, bank erosion, and undercutting and structural damage of the culvert. If the culvert slope is too great, the increased water velocity can cause erosion downstream.

Initiates erosion around culvert: Confining the stream flow to a culvert may alter the flow regime and trigger erosion, deposition at the inlet, and scouring at the outlet.

Causes flooding: Blockage of culverts by waterborne debris can cause flooding during high flows. Bridges are better able to accommodate high flows.

Restricts fish movement: Tasmanian freshwater fish migrate downstream to estuaries to spawn and the juveniles migrate upstream. Fish have always had to overcome natural barriers, such as waterfalls and log-jams, when migrating. However, the expansion of forestry and urbanisation has greatly increased the number of barriers they face. A complete barrier can lead to extinction of migratory species upstream and possibly downstream. Tasmanian native freshwater fish cannot jump so a perched culvert with a drop of more than 10 centimetres will usually be a barrier to migration upstream. A survey of culverts in southern Tasmanian forestry catchments found that 50 percent of those surveyed did not allow fish to enter because of perching. A survey of culverts on Tasmanian roads would probably produce similar results.



Perched culverts are a barrier to fish passage

Culvert inlets constrict stream flow, which increases the flow velocity at the inlet. The increased velocity may make it difficult for fish to swim upstream out of the culvert.

When culvert gradients are more than 2 percent (1:50), the resultant high water velocities can make it difficult for native fish to swim through. The problem is more severe during high flows and in culverts with smooth walls, particularly if there are no resting places (eg behind baffles) in the culvert. A survey of culverts in southern Tasmanian forestry catchments found that 70 percent of those surveyed impeded the movement of fish because the culvert slope was greater than 2 percent (1:50). High water velocities can also impede the movement of other aquatic species, such as platypuses and water rats.

If several small pipes are used rather than one large barrel, the culverts may be too small for fish to swim through. The fish may also be reluctant to enter the culverts because they are too dark. Anecdotal information suggests that some platypuses and giant freshwater lobsters (*Astacopsis gouldi*) are killed on roads when avoiding such culverts.

Fish cannot swim large distances without resting. A lack of pools and rest areas immediately upstream and downstream of the culvert may make the culvert impassable if the distance they have to swim without a rest is too far.

Debris and sediment may block small diameter culverts particularly if trash screens or stock barriers have been installed. While total blockages are unlikely, the accumulated debris may stop migratory species passing through by creating a physical barrier or increasing flow velocity.

Reduces recreational use: Culverts may reduce recreational use of the river, particularly for fishing and canoeing.

Environmental design requirements

Before constructing a culvert/s a works plan should be prepared. The plan should outline the works to be undertaken and the measures that will be used to minimise the risk of causing environmental harm. The measures outlined should include those described below.

Round culverts are the most commonly used and worst designed culverts in terms of environmental outcomes. However, all culverts can cause significant environmental harm.

The flow characteristics and road alignment may restrict the design of culverts. Nevertheless, they should be designed and installed according to the following requirements.

- Contractors and plant operators installing culverts should adopt the principles outlined in *Environmental Best Practice Guidelines 2. Construction Practices in Waterways and Wetlands* to minimise the risk of causing environmental harm.
- The culvert's capacity should be able to accommodate peak flow volumes.

Open-bottom culverts with the natural streambed running through them are the preferred culvert structures

- Open-bottom culverts should not create a break in the bed substrate, and should be large enough not to constrict flows or trap debris during normal flow conditions.

If an open-bottom culvert is not possible, the following requirements apply

- One large culvert spanning the width of the waterway is preferable to two or more small culverts because it is usually more efficient hydraulically.
- If multiple culverts are needed to span the stream bed, one or more should be slightly lower than the others to concentrate low flows and allow fish to swim through.
- The culvert should be perpendicular to the flow to minimise the length needed (less than 4 metres) and allow fish to swim through.
- The culvert gradient should be similar to that of the stream, which should be gently sloping. If fish may be passing through, avoid using culverts on a waterway that has a gradient of more than 2 percent (1:50). The gradient immediately downstream of the culvert should be less than 5 percent (1:20) so fish can approach the culvert outlet.
- The culvert should not create any significant discontinuities in the water profile. Its size and placement should not cause ponding upstream, unless ponding is typical of the river reach. Perched culverts should be less than 10 centimetres above the receiving waters.
- If fish may be moving through the culvert, the culvert invert should be buried so a minimum of 20 percent of the diameter (round culvert) or 20 percent of the height (box culvert) lies below the channel bed. Generally, the invert should be placed so the water in the culvert is at least 200-500 millimetres deep during low flows.
- If the culvert gradient is 0.5-3.5 percent (1:200-1:30) the culvert diameter should be at least 1.25 times the width of the channel and the downstream invert should be embedded at least 20 percent below the stream bed. Natural substrate should be placed in the culvert if possible. This guideline applies only if the product of channel slope and culvert length is less than 20 percent of the culvert diameter.
- If possible, the culvert should be designed so its hydraulics are similar to that of the stream and the weakest fish species can swim through. The water depth should allow the largest fish species to remain submerged.
- The culvert should have at least 600 millimetres of space above the typical base flows so it is light enough inside that fish are not discouraged from entering and swimming through.
- Water velocities in the culvert should be similar to those at the site before the culvert was constructed. There should also be no differences in the flow rates upstream, in and downstream of the culvert.
- Baffles or large angular rocks typical of the area can be cemented along the base of longer concrete culverts to reduce flow velocities and allow fish and invertebrates to pass through. Lining the base of the culvert with a rough concrete finish and/or natural substrate will increase turbulence and make it easier for fish to swim through. Velocities of less than 0.3 metres/second will allow most native fish to swim through a 5 metre culvert. Placing small rocks along the base may also help other species, such as platypuses and water rats, pass through the culvert.
- Water velocities may be decreased and water depths increased by using appropriately designed tail-water control devices. These devices can be incorporated into the outlet-basin design.
- Fish resting pools constructed upstream and downstream of the culvert should be at least two metres long along the direction of flow, be deep enough for fish to remain submerged, and contain rocks and vegetation to provide cover. Aquatic and riparian plants can provide shading.

- Inlet and outlet flow velocities of less than 0.9 metres/second will not transport silt.
- A rip-rap apron should be placed up to six culvert diameters beyond the end of the pipe to prevent erosion downstream of the culvert outlet, particularly if the slope of the stream bed is greater than 2 percent (1:50). The apron should have a V-shaped cross-section so fish can swim through when water levels are low.
- The capacity of the culvert should be large enough to accommodate some deposition of gravel in the culvert.
- The culvert should be large enough to accommodate the anticipated debris and sediment load. The greater the anticipated load the greater the cross-sectional area needed for the culvert. Regular maintenance will be needed to remove debris and sediment and check for erosion.
- The culvert should not reduce the cross-sectional area of the channel and infilling of the channel should be avoided.
- Fill placed below the high water mark must be free of fines, sediment, soil, pollutants, contaminants, toxic materials and other waste materials.
- Steep approaches to the crossing should be avoided.
- Cross-fall drains should be used to drain water from the approach road into a sediment trap or the roadside vegetation. The drains should be at least 20 metres away from the crossing.

6. Causeways

Potential environmental effects

Initiates erosion: Poorly sited causeways can lead to erosion of the stream bed and banks. Scour holes may develop downstream of the causeway, and may undermine and outflank the structure. Restricted sediment transport and increased flow velocities may increase bed erosion.

Deposits sediment into river: Poorly designed causeway approaches can erode and deposit large amounts of sediment into the waterway.

Causes flooding: Causeways can cause more frequent local flooding if they restrict flows.

Restricts fish movement: In steep gradient streams, a drop may be created on the downstream side of the causeway. This may make it difficult for fish and other aquatic animals to cross. Many freshwater species, particularly fish, need to swim freely in rivers to survive. Fish blocked by structures are more likely to be taken by birds.

Environmental design requirements

Before constructing a causeway a works plan should be prepared. The plan should outline the works to be undertaken and the measures that will be used to minimise the risk of causing environmental harm. The measures outlined should include those described below.

- Contractors and plant operators constructing causeways should adopt the principles outlined in *Environmental Best Practice Guidelines 2. Construction Practices in Waterways and Wetlands* to minimise the risk of causing environmental harm.
- If a culvert is used it should comply with the environmental design requirements for culverts (see 'Section 5. Culverts').
- The causeway should be sited on a straight stretch of the waterway that has a minimal gradient.
- The causeway should be perpendicular to the waterway.
- The river's normal hydraulic regime should be preserved as much as possible.
- The site should have a stable substrate and scour resistant material immediately downstream.
- The causeway should not be sited near a riffle or pool if possible because of the likelihood of causing erosion and degrading aquatic habitat.
- Both ends of the causeway should be 'keyed in' to the bank for 3-5 metres.
- The surface of the causeway should be constructed of erosion-proof material, such as interlocking angular rock or concrete.
- Deep box cuts should be avoided on the approaches to the causeway.
- Cross-fall drains should be used to drain water from the approach road into a sediment trap or the roadside vegetation. The drains should be at least 20 metres away from the crossing.



Multi level culverts may allow fish to pass through causeways during low flows

7. Fords

Potential environmental effects

Initiates erosion: Poorly designed and sited fords may trigger stream bed and bank erosion. Scour holes may develop below the ford if the invert is higher than the stream bed. This may eventually undermine and outflank the ford. Poorly designed approaches to fords may erode and deposit large amounts of sediment into the waterway.

Destabilises channel: Frequent use of unhardened fords may destabilise the channel and cause bed and bank erosion and siltation.

Restricts sediment transport: Fords may block sediment moving downstream by acting as a weir. Restricted sediment transport and increased flow velocities may increase bed erosion downstream of the ford.

Causes flooding: Fords may increase the frequency of local flooding by restricting flows.

Restricts movement of fish and aquatic animals: Fixed structures, such as concrete fords, cannot adjust their form as the height of the stream bed changes. If the stream bed deepens in a steep gradient stream, a vertical drop and waterfall may develop on the downstream side of the ford. This may prevent or make it difficult for fish and other aquatic animals to travel upstream across the ford.

If the ford is made of smooth concrete, the increased water velocities may make it difficult for fish and other aquatic animals to cross.

Flows are often spread across the width of fords during low flows. As a result, the water may be too shallow to allow fish and other aquatic animals to cross.

Environmental design requirements

Before constructing a ford a works plan should be prepared. The plan should outline the works to be undertaken and the measures that will be used to minimise the risk of causing environmental harm. The measures outlined should include those described below.

- A ford is appropriate only if infrequent use is anticipated.
- Contractors and plant operators constructing fords should adopt the principles outlined in *Environmental Best Practice Guidelines 2. Construction Practices in Waterways and Wetlands* to minimise the risk of causing environmental harm.
- The ford should be constructed and used during the driest times of the year.
- The site of the ford should have a stable, non-erodible rock or bedrock base to minimise siltation from traffic. Sandy, vegetated and silty sites are not appropriate.
- The ford should be perpendicular to the waterway.
- If rocks are used to construct the ford, they should be almost level with the stream bed and they should not affect flows significantly. Only clean material from another site should be used. Excavating rock from the stream is rarely acceptable.
- The surface of the ford should be constructed of an erosion-proof material, such as interlocking angular rock or concrete.
- Concrete fords should have a 'V'-shaped or rounded notch on the thalweg of the stream (lowest point of main channel) so fish can swim across the ford during times of low flow. The 'V' or notch should be least 5 centimetres deep and 30 centimetres wide.
- Avoid deep box cuts on the approaches to the ford. The height of the banks adjacent to the ford should be less than 2 metres.
- Non-erodible material should be used on both banks to stabilise the approaches to the ford.
- The amount of vegetation removed adjacent to the ford should be minimised.



Fords should be perpendicular to the waterway on non-erodible substrate

- Cross-fall drains should be used to drain water from the approach road into a sediment trap or the roadside vegetation. The drains should be at least 20 metres away from the crossing.
- Grease, oil and other fluids should be cleaned off all vehicles before entering the ford.
- A fence may be needed to stop stock entering the stream from the ford.

8. Stock crossings

Potential environmental effects

Degrades stream bed and banks: Stock in waterways degrade stream beds and banks by destroying the vegetation cover, eroding the bed and banks, compacting the soil and introducing weeds.

Degrades water quality: Stock in waterways degrade water quality by stirring up sediment. They also increase the number of bacteria and viruses in the water when they defecate into waterways. If access is uncontrolled, injured and dead stock can contaminate the stream and threaten public health.



Uncontrolled stock access can destabilise the stream bed and banks and degrade water quality

Environmental design requirements

Before constructing a stock crossing a works plan should be prepared. The plan should outline the works to be undertaken and the measures that will be used to minimise the risk of causing environmental harm. The measures outlined should include those described below.

- Contractors and plant operators constructing stock crossings should adopt the principles outlined in *Environmental Best Practice Guidelines 2. Construction Practices in Waterways and Wetlands* to minimise the risk of causing environmental harm.
- Stock crossings should not be used as watering points.
- If a naturally hardened substrate is not available, modification of the stream should be limited to hardening the stream bed.
- The approaches should be constructed of gravel or stone.
- Smooth approach ramps and walkways allow manure to be removed with a scraper.
- Electric fences should be placed on both sides of the walkway to stop stock moving along the stream bed and banks. Alternatively, plain-wire fences may be used because they are easily repaired and replaced after floods. Mesh-type fences (eg ringlock) should not be used because they catch debris and restrict flood flows.

If a temporary watering point is needed

- Allow stock to drink only at properly constructed and controlled access points. The watering point should be located on the downstream side of an inside bend that is not prone to erosion.
- Fencing off the riparian zone allows the timing, intensity and duration of stock access to the waterway to be controlled. Fences around the watering point should extend into the water.
- Providing water in troughs and dams away from the stream is better than creating a temporary watering point along the bank.

9. Ongoing maintenance

All stream crossings should be maintained regularly to minimise the risk of causing erosion and flooding, and obstructing the passage of fish and other animals. Regular inspections and maintenance should be carried out on new crossings, after periods of high flow, and before fish and other animals begin migrating. The inspection and maintenance should

- clear debris from the crossing's surface, entrance and exit
- remove excess silt from the entrance and exit of the culvert/s if more than a third of the entrance is blocked.
- make sure erosion is not being exacerbated.

10. Removing crossings

Stream crossings impede the movement of migratory fish and other animals. If a crossing is no longer being used, consider removing it and rehabilitating the site. Seek advice from the Inland Fisheries Service before removing any crossings.

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Witheridge, G. 2003. *Fish Passage Requirement for Waterway Crossings: Engineering Guidelines*. Institute of Public Works Engineering, Sydney. (in press)

These guidelines should be used in conjunction with the appropriate technical advice and literature.

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Checklist

This checklist summarises the environmental design requirements outlined in *Environmental Best Practice Guidelines 5. Siting and Designing Stream Crossings*. The plan of works prepared should describe the proposed works and show that the measures listed below will be used to minimise the risk of causing environmental harm during and after the works.

- ☐ Works plan prepared

Stream crossing types (Section 2)

- ☐ Crossing type appropriate

Site selection (Section 3)

- ☐ Stream straight and well defined
- ☐ Right-of-way exists
- ☐ Geology and soil conditions appropriate
- ☐ No major environmental hazards
- ☐ Flow not affected by in-stream natural features or other structures
- ☐ Not wetland or floodplain
- ☐ Contaminated sediments not likely to be mobilised
- ☐ Threatened flora and fauna protected
- ☐ No pristine ecosystem Protected Environmental Values
- ☐ Sensitive ecosystems protected
- ☐ Cultural heritage and geomorphological values protected
- ☐ Vegetation disturbance minimised
- ☐ Public safety and use not compromised
- ☐ Minimal aesthetic effects
- ☐ Downstream town and domestic water supplies protected
- ☐ Sensitive downstream industrial off-takes protected

Bridges (Section 4)

- ☐ Works conform to *Environmental Best Practice Guidelines 2. Construction Practices in Waterways and Wetlands*
- ☐ Engineering advice sought
- ☐ Design drawings comply with Australian Standards
- ☐ Perpendicular to waterway
- ☐ Piers and footings designed and sited appropriately
- ☐ Appropriate rock beaching used
- ☐ Grated decking considered
- ☐ Terrestrial access along stream banks provided
- ☐ Approaches well designed
- ☐ Sediment control measures used

Culverts (Section 5)

- ☐ Works conform to *Environmental Best Practice Guidelines 2. Construction Practices in Waterways and Wetlands*
- ☐ Expert advice sought
- ☐ Retains natural stream bed
- ☐ Peak flow capacity adequate
- ☐ Low flows concentrated
- ☐ Perpendicular to flow
- ☐ Length does not restrict movement of aquatic animals
- ☐ Gradient approximates stream gradient
- ☐ No ponding upstream
- ☐ Drop less than 10 cm in perched culverts
- ☐ Pipe culvert embedded in stream bed
- ☐ Culvert size allows light entry
- ☐ Natural flow velocities retained
- ☐ Internal surface modified to reduce water velocities
- ☐ Tail-water control devices considered
- ☐ Shaded fish resting pools upstream and downstream of culvert
- ☐ Erosion control at outlet if necessary
- ☐ Anticipated sediment and debris load accommodated
- ☐ Fill material effects minimal
- ☐ Approaches well designed
- ☐ Sediment control measures used

Causeways (Section 6)

- ☐ Works conform to *Environmental Best Practice Guidelines 2. Construction Practices in Waterways and Wetlands*
- ☐ Expert advice sought
- ☐ Complies with culvert environmental design requirements
- ☐ Site appropriate
- ☐ Perpendicular to flow
- ☐ Stream substrate stable
- ☐ Not sited near riffle or pool
- ☐ Causeway 'keyed in' to banks
- ☐ Roughened erosion-proof surface used
- ☐ Approaches well designed
- ☐ Sediment control measures used

Fords (Section 7)

- ☐ Frequency of use appropriate
- ☐ Expert advice sought (depending on scale of works)
- ☐ Works conform to *Environmental Best Practice Guidelines 2. Construction Practices in Waterways and Wetlands*
- ☐ Site appropriate
- ☐ Minimal effects on flows
- ☐ Substrate stable
- ☐ Approaches well designed and stable
- ☐ Roughened erosion-proof surface used
- ☐ Fish able to cross during low flows
- ☐ Fenced off to control stock access
- ☐ Sediment control measures used

Stock crossings (Section 8)

- ☐ Expert advice sought (depending on scale of works)
- ☐ Works conform to *Environmental Best Practice Guidelines 2. Construction Practices in Waterways and Wetlands*
- ☐ Site and substrate appropriate
- ☐ Walkway at or near stream bed level
- ☐ Minimal effects on flow
- ☐ Fenced off to control stock access
- ☐ Off-stream watering points considered
- ☐ Access points hardened
- ☐ Sediment control measures used

Ongoing maintenance (Section 9)

- ☐ Maintenance program prepared

Environmental Best Practice Guidelines 6. Managing Large Woody Debris in Waterways

Branches, large limbs and trees that have fallen into rivers are commonly referred to as large woody debris (LWD) or snags. LWD is a vital component of Tasmanian waterways and its removal can severely degrade their health.

'De-snagging' and the removal of vegetation for forestry and agriculture has reduced the amount of LWD in our waterways. More willows and fewer native trees in riparian areas has also led to changes in the amount and type of LWD. All three processes have reduced the richness and density of macro-invertebrates in our waterways.



Woody debris is a vital component of healthy waterways

In recent years, a better understanding of the importance of LWD for aquatic ecosystems has led to changes in the way our rivers are managed. The focus of management has shifted from widespread 'de-snagging' of streams to maintaining and re-introducing LWD into streams.

When managing LWD in waterways, the challenge is to weigh up the ecological benefits of retaining the LWD against the possible adverse changes in river level the LWD may cause.

1. Importance of LWD

Stabilises river beds and banks: LWD decreases erosion of river beds and banks by resisting and deflecting flows.

Provides fish habitat: LWD provides shelter from high velocity flows, shade, feeding and spawning sites, nurseries for larvae and juvenile fish, territory markers for migratory fish, and refuges from predation. For example, river blackfish use hollow logs in the LWD for protection while spawning in spring and early summer.

Provides niche habitat: LWD creates a range of flow conditions from deep pools to chutes and aerated water, which provide a variety of habitats for aquatic plants and animals.

Improves water quality: LWD oxygenates the water flowing over it during low flows and reduces water stagnation. This increases the availability of oxygen for fish and reduces odours.

Provides space for colonisation: LWD provides a range of surfaces, including grooves, splits and hollows, on which invertebrates, microbes and algae can colonise. These tiny organisms lie at the bottom of the food chain and provide food - directly and indirectly - for all the animals living in the stream, including macro-invertebrates, fish, water rats and platypuses.

Provides food: The dissolved and particulate organic material (carbon) from LWD is an important source of food for aquatic invertebrates and fish. For example, the giant freshwater lobster (*Astacopsis gouldi*), which is listed in Commonwealth and Tasmanian threatened species legislation, relies on decaying wood for its diet.

Supports invertebrate life cycle: Many aquatic invertebrates have a terrestrial adult stage. These species need LWD that protrudes out the water so they can emerge from the larval to the adult stage of their life cycle.

Aids re-colonisation: Scour pools formed by LWD provide pockets of habitat for aquatic species in streams with little or no summer flows. The species living in these pools provide a reservoir of species that migrate and colonise the rest of the stream when flows increase.

Provides perches: Birds, reptiles and mammals use protruding LWD as resting, foraging and lookout sites.

Provides alternative food sources: LWD may be the main source of food for aquatic animals if streams in the catchment have been extensively dammed and stripped of their riparian vegetation.

2. Re-positioning LWD

Re-positioning LWD is an option if the debris is causing detrimental variations in flow and removing it cannot be justified on economic and ecological grounds. The objective of re-positioning is to minimise the negative effects on flow while still maintaining an ecologically desirable range of flow velocities and water depths in the channel.

Potential environmental effects

Initiates bank erosion: Re-positioning LWD may initiate bank erosion by diverting flows. The likelihood that LWD will initiate erosion depends on the alignment and size of the debris, the flow velocity and depth of the river, and the composition of the bed and banks. Generally, the likelihood of erosion decreases as river size increases.

Mobilises sediment: Re-positioning LWD may increase the maximum stream velocity in the centre of the river, which may mobilise bed sediment and deepen the stream. Sometimes, relocating LWD causes more problems than leaving it in place.

Degrades water quality: Short-term disturbance of sediment during re-alignment, and long-term erosion and mobilisation of sediment after re-alignment may degrade water quality.

Destroys habitat and food sources: Excessive re-alignment of logs closer to the bank may disturb or destroy existing aquatic habitats and food sources.

Environmental management principles

Before re-positioning LWD a works plan should be prepared. The plan should outline the works to be undertaken and the measures that will be used to minimise the risk of causing environmental harm. The measures outlined should include those described below.

- Undertaking works in waterways without expert advice can cause environmental harm that may be difficult and expensive to remediate. Depending on the scale of the works, advice may be needed from one or more experts, including a stream biologist, river engineer, fluvial geomorphologist or hydrologist.
- A proposal for re-positioning LWD should be treated like any other development needing council approval. A management proposal should be prepared that justifies the project and states its objectives (supported by hydraulic calculations that show the effects on velocity and flow), evaluates the environmental impact, and specifies the intended works. All relevant agencies and interested parties should be given the opportunity to comment on the proposed works.
- Works in or near streams should adopt the principles outlined in *Environmental Best Practice Guidelines 2. Construction Practices in Waterways and Wetlands* to minimise the risk of causing environmental harm.
- Logs lying perpendicular to the flow should be rotated so they lie closer to the bank at an angle of 0-40°. This should improve the capacity of the channel to carry peak flows while retaining a reasonable variety of habitats. Placing LWD this way creates lower water levels, maintains the surface area of the debris for aquatic plants and animals, and increases the availability of low velocity habitats.
- Placing all the logs along the edge of the stream bank will improve the flow capacity but reduce the availability of slow water habitats. While the LWD should be roughly aligned to the direction of flow, it should be placed in a variety of locations and alignments so it creates a variety of habitats. It should also be arranged so it is closely spaced.
- It may be necessary to anchor the re-positioned LWD so it is not carried away during high flows.
- The works should be inspected and maintained regularly to make sure they are effective.



LWD provides feeding and refuge areas for fish and other aquatic species. Hydraulic forces around LWD contribute structural diversity to the river bed - eg upstream scour pools (A). LWD should not be disturbed unless it is shown to be causing unacceptable flooding or erosion. If action is required, re-aligning LWD nearer to the bank is preferred to removal (B).

3. Removing LWD

In the past, river management agencies and landowner groups and individuals removed LWD from rivers - often because they were concerned it could cause flooding. However, there is little evidence to support the argument that removing LWD reduces the frequency of floods or improves the capacity of rivers to carry floods.

A river channel must be blocked substantially before the movement of flood waters is affected. Such blockages are generally obvious and would usually be described as a log-jam. LWD that lies perpendicular to the flow and covers more than 10 percent of the channel's cross-section may increase the likelihood of the stream flowing over its banks during floods. Smaller LWD has little effect on water levels.

Potential environmental effects

Initiates erosion and mobilises sediment: Removing LWD reduces the resistance to flow and may divert flows. This may trigger channel instability and further erosion without alleviating the flooding problem. Removing LWD may also increase the maximum stream velocity in the centre of the river, which may mobilise bed sediment and deepen the stream bed.

Degrades water quality: Short-term disturbance of sediment during removal, and long-term erosion and mobilisation of sediment after removal may degrade water quality.

Exacerbates flooding downstream: Complete removal of LWD and riparian vegetation in the middle to upper catchment may increase flow conveyance and exacerbate flooding problems for towns and properties downstream.

Destroys habitat and food sources: Removing LWD may disturb or destroy aquatic habitats and food sources.

Environmental management principles

Before removing LWD a works plan should be prepared. The plan should outline the works to be undertaken and the measures that will be used to minimise the risk of causing environmental harm. The measures outlined should include those described below.

- The preferred - and the most effective and cheapest - approach is to leave the LWD undisturbed, unless it is causing unacceptable flooding or severe erosion.
- If a log-jam is causing flooding it may be possible to re-position the tree trunks or lop the limbs. Re-positioning the fallen tree trunks so they are more closely aligned to the bank will reduce the effect they have on river levels while still maintaining their ecological benefits. Lopping the limbs to reduce the amount of debris they trap may reduce their effect on flow levels.
- Removing the LWD may be the only option if the debris is blocking a large proportion of the channel and it cannot be re-positioned, is hazardous to recreational users, or becomes trapped around a bridge and creates a safety hazard.
- Undertaking works in waterways without expert advice can cause environmental harm that may be difficult and expensive to remediate. Depending on the scale of the works, advice may be needed from one or more experts, including a stream biologist, river engineer, fluvial geomorphologist or hydrologist.
- A proposal for removing LWD should be treated like any other development needing council approval. A management proposal should be prepared that justifies the project and states its objectives (supported by hydraulic calculations that show the effects on velocity and flow), evaluates the environmental impact, and specifies the intended works. All relevant agencies and interested parties should be given the opportunity to comment on the proposed works.
- Works in or near streams should adopt the principles outlined in *Environmental Best Practice Guidelines 2. Construction Practices in Waterways and Wetlands* to minimise the risk of causing environmental harm.
- If long-lasting hardwoods are being removed, consider relocating the wood or storing it for future habitat restoration works.
- The works should be inspected and maintained regularly to make sure they are effective.

4. Re-introducing LWD

Extensive clearing of riparian and floodplain vegetation has removed the sources of LWD in many of our waterways. Even if successful stream bank revegetation has been undertaken, it may take hundreds of years to generate a new supply of LWD. Re-introducing LWD should be considered when restoring rivers to speed up their recovery. This will complement the effects of revegetating the banks and improve the river's ecological health.

Potential environmental effects

Re-introducing LWD will usually improve the river's health. However, it can cause detrimental environmental effects.

Degrades water quality: Short-term mobilisation of sediment when re-introducing LWD, and long-term erosion and mobilisation of sediment after re-introducing LWD may degrade water quality.

Destroys habitat: Re-introducing LWD can change the stream's hydraulic regime. This may lead to a loss of the plants and animals that were adapted to the previous conditions at the site.

Environmental management principles

Before re-introducing LWD a works plan should be prepared. The plan should outline the works to be undertaken and the measures that will be used to minimise the risk of causing environmental harm. The measures outlined should include those described below.

- Undertaking works in waterways without expert advice can cause environmental harm that may be difficult and expensive to remediate. Depending on the scale of the works, advice may be needed from one or more experts, including a stream biologist, river engineer, fluvial geomorphologist or hydrologist.
- A proposal for re-introducing LWD should be treated like any other development needing council approval. A management proposal should be prepared that justifies the project and states its objectives (supported by hydraulic calculations that show the effects on velocity and flow), evaluates the environmental impact, and specifies the intended works. All relevant agencies and interested parties should be given the opportunity to comment on the proposed works.
- Works in or near streams should adopt the principles outlined in *Environmental Best Practice Guidelines 2. Construction Practices in Waterways and Wetlands* to minimise the risk of causing environmental harm.
- LWD loads vary according to the type of river and river reach (ranging from zero upwards). Similar healthy, unmodified river reaches in the catchment should be used as models to determine the amount of LWD needed.
- The LWD should be placed on the downstream end of outside bends and have a range of alignments. When deciding where to place the LWD consider whether access to the bank by machinery may be needed in the future, whether single objects or more complex structures would be more appropriate, how much LWD should protrude above the water, and the reduction in flow velocities needed.
- A range of debris sizes should be used to promote habitat diversity. Native species should be used rather than introduced species (willows) and artificial materials (car bodies and concrete).
- The timber used should not come from the river's banks or floodplain. Logging waste may be a suitable alternative.
- Changed hydraulic conditions may cause erosion and scouring of the bed and banks around the LWD. This is not necessarily a problem as it may increase habitat diversity. Creating a wide enough riparian buffer zone will ensure the erosion cannot damage fences and other structures further away.
- It may be necessary to anchor the LWD so it is not carried away during high flows.
- The works should be inspected and maintained regularly to make sure they are effective. The ongoing maintenance may include lopping, re-alignment and selective removal.



Re-introducing LWD can help improve stream health.

5. References

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These guidelines should be used in conjunction with the appropriate technical advice and literature.

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Checklist

This checklist summarises the environmental management principles outlined in *Environmental Best Practice Guidelines 6. Managing Large Woody Debris in Waterways*. The plan of works prepared should describe the proposed works and show that the measures listed below will be used to minimise the risk of causing environmental harm during and after the works.

- ☐ Works plan prepared

Re-positioning LWD (Section 2)

- ☐ Expert advice sought
- ☐ Management proposal prepared
- ☐ Works conform to *Environmental Best Practice Guidelines 2. Construction Practices in Waterways and Wetlands*
- ☐ Logs aligned at angle of 0-40° to stream bank
- ☐ Logs placed in variety of locations and alignments
- ☐ LWD anchored if necessary
- ☐ Inspection and maintenance program prepared

Removing LWD (Section 3)

- ☐ Leaving LWD undisturbed considered
- ☐ Re-positioning of trunks and lopping of limbs considered
- ☐ Expert advice sought
- ☐ Management proposal prepared
- ☐ Works conform to *Environmental Best Practice Guidelines 2. Construction Practices in Waterways and Wetlands*
- ☐ Extracted hardwoods relocated or stored for future use
- ☐ Inspection and maintenance program prepared

Re-introducing LWD (Section 4)

- ☐ Expert advice sought
- ☐ Management proposal prepared
- ☐ Works conform to *Environmental Best Practice Guidelines 2. Construction Practices in Waterways and Wetlands*
- ☐ LWD load modelled on similar healthy, unmodified reaches
- ☐ LWD placed on outside bends with range of alignments
- ☐ Native timber with range of debris sizes used
- ☐ Timber does not come from banks or floodplain
- ☐ Riparian buffer zone wide enough
- ☐ LWD anchored if necessary
- ☐ Inspection and maintenance program prepared

Environmental Best Practice Guidelines 7. Managing Riparian Vegetation

1. What is a riparian zone?

Riparian zones are areas of land that adjoin, influence or are influenced by a body of water. Typical examples are river banks, floodplains, lake foreshores and wetland fringes.

Riparian 'buffer' zones are fenced-off (usually) areas within riparian zones that are managed or reserved to protect the waterway or wetland, or provide a transition between the waterway or wetland and the adjacent land. The width and extent of a buffer zone depends on the management objectives. It may be only 20-30 metres wide if the objective is to protect bank stability. However, it may extend the entire width of a floodplain if the objective is to prevent damage from flooding. In some cases, the width of riparian reserves along larger waterways is set by statutory processes rather than management needs.

2. Importance of riparian vegetation

Healthy riparian zones are essential for maintaining healthy ecosystems and economic productivity along rivers. Some riparian zones in rural and urban landscapes are degraded and should be rehabilitated. The key to preserving the value of a riparian zone is to maintain a diverse vegetation cover.

A healthy riparian vegetation cover	A degraded riparian vegetation cover
Supports a diversity of aquatic habitats.	Has fewer aquatic habitats because there is less live and dead aquatic vegetation.
Shades the river, which reduces fluctuations in water temperature.	Allows more light to reach the river, which increases water temperature, which may trigger algal growth and reduce water quality.
Stabilises the stream banks.	Reduces the stability of the stream banks because there are fewer roots and less vegetation to hold the soil together.
Filters sediments and nutrients from the surface and sub-surface water, which reduces pollution of the river.	Allows sediments and pollutants in the surface and sub-surface water to enter the river, which may pollute the river.
Is a high productivity zone that provides food for aquatic animals.	Deposits less organic matter into the stream, which means there is less food for aquatic animals.
Adds agricultural value to the property by allowing selective timber harvesting, forage production and apiculture; providing a windbreak for adjoining paddocks; and providing emergency feed.	
Adds to the capital value of the land.	
	Deposits little woody debris into the river, which reduces stream 'roughness' and affects the flow regime.
	Can alter the depth of the water table and exacerbate the effects of salinity.



Healthy riparian vegetation cover



Severely degraded riparian vegetation cover

3. Threats to riparian zones

In many areas the only healthy riparian zones are patches of remnant vegetation. Many of these areas are threatened by human activities, including vegetation clearance, water regulation, fire, weeds, cattle grazing, and changes to ground-water conditions. Natural disturbances, such as floods, fire and extreme climatic conditions, can also threaten degraded or stressed riparian ecosystems.

4. Environmental management principles

If works in waterways and wetlands may affect the riparian zone, the works plan should describe the measures that will be used to minimise the risk of causing environmental harm to the riparian zone. The principles for managing riparian areas are described below.

Information on planning and managing activities in riparian zones can be found in the publications listed in 'Section 6. References'. Most of these publications are available on the internet. Information on plant communities and threatened species is available on the Department of Primary Industries, Water and Environment (DPIWE) website at www.gisparks.tas.gov.au.

Preserve remnant vegetation

It is easier to protect riparian zones in reasonable to good condition than it is to remediate seriously degraded ones. The first priority for managing reasonably healthy riparian areas should be to preserve the remnant native vegetation by minimising human disturbances.

Seek expert advice

In some situations - very active bank erosion, foreshore improvement and so on - remediation and revegetation will be necessary. These projects are more likely to be successful if groups draw on the experiences of others when planning and implementing their works. This can be done by reviewing relevant publications, talking to individuals and groups that have done similar works, and seeking the advice of riparian ecologists and botanists.

Fence off riparian zone

Livestock are a major cause of damage to riparian vegetation on rural land. Excluding stock from riparian zones usually leads to a steady improvement in land condition, vegetation cover, stream health and water quality. Appropriate fencing makes it possible to exclude stock from riparian zones. It also allows access by stock when needed for emergency feed and weed control.

Buffer width should reflect management objectives

The width of a riparian buffer zone will be determined by the management objectives for the area and the site characteristics. The zone should be wide enough to achieve the management objectives for the area. The site characteristics that should be considered include slope, soil texture and erodibility, drainage area, bank height, adjacent land use and existing vegetation. The large number of factors to be considered means that, although setting 'generic' widths for riparian zones at a regional or state level offers some protection for waterways, a detailed analysis is needed to determine the most appropriate width. For example, the publication *Guidelines for Stabilising Streambanks with Riparian Vegetation* (Abernethy & Rutherford, 1999) (see 'Section 6. References') describes a method for determining the width needed for a buffer zone designed to stabilise the banks.



Uncontrolled stock access can cause serious bank erosion

Ideally, a riparian zone should be as large as possible. This will maximise the benefits of the riparian vegetation and minimise the effects of the adjacent land use on the waterway.

Stabilise channel

Stream beds should be stabilised before revegetation works begin. If a channel is actively deepening and widening, fencing off and revegetating the riparian zone will not stabilise the channel and its banks. In this situation, stream-bed control structures should be installed and the banks protected before revegetation begins.

Use native species

Native vegetation along degraded Tasmanian waterways may regenerate without replanting if stock are excluded and weeds controlled. If revegetation is necessary, advice should be sought on the most appropriate species for the site. Using inappropriate species, such as willows, may cause environmental harm that may be difficult and expensive to remediate. The species composition and community structure of the vegetation will vary with distance from the waterway or wetland as soil conditions become drier.

Remove weeds

Planning and ongoing maintenance are essential components of all weed removal programs. Removing weeds, such as gorse and willows, from waterways and riparian zones without timely revegetation can lead to erosion, bank instability, and loss of animal habitat and food.

If using chemical sprays, select the right chemicals so that the weeds are controlled without killing animals, such as frogs and fish, in the waterway. Contact a DPIWE Regional Weed Management Officer for information on the most appropriate sprays to use. Further information is also available in the Rivercare Guidelines for Safe and Effective Herbicide Use near Water (Noble, 2002), which is available on the DPIWE website.

Preserve small and large waterways

Riparian vegetation is critical for maintaining healthy ecosystems in small waterways and the upper reaches of large waterways. Leafy and woody debris from the riparian vegetation of small waterways is essential for local aquatic ecosystems. It is also an important source of carbon and nutrients for ecosystems downstream, where there is less shading and less leafy and woody debris entering the waterway.

If resources are scarce and the objective of management is protecting the riverine environment, preserving the riparian vegetation along small waterways should be given the same or greater priority as preserving the riparian vegetation along large waterways.

5. Riparian clearance controls

Forest Practices Board

The Forest Practices Act 1985 and the Forest Practices Regulations 1997 prohibit forest clearing on defined 'vulnerable land', such as stream-side reserves, drainage lines and swamps, even if no commercial wood is produced. The only exception to this is if the works are undertaken to protect public safety or maintain existing infrastructure, such as roads, fences and buildings. In such cases, the volume of timber cleared must be less than 5 tonnes or cover an area of less than 1 hectare (whichever is the lesser) per year on any property.

This clearance prohibition applies to all woody plants with a height or potential height of 5 metres or more, whether live, dead, standing or fallen. It includes all species native to Tasmania, including tree ferns, as well as introduced species used for processing or harvesting timber, such as pine and eucalypt plantings. It does not extend to removing non-native species, such as willows and fruit trees.

Selective harvesting on vulnerable land may be permitted in certain circumstances. Any harvesting must be approved under a Forest Practices Plan (FPP), certified by a Forest Practices Officer, and comply with the Forest Practices Code 2000. Exemptions from a FPP apply for small-scale operations where

- the owner of the land gives consent; and
- the harvesting of trees is necessary to protect public safety or maintain existing infrastructure, such as roads, fences and buildings; and
- the volume of timber harvested is less than 5 tonnes or the area of land cleared is less than 1 hectare (whichever is the lesser) on any property per year.

Exemptions also apply for harvesting timber and clearing trees for the development of easements for powerlines, gas pipelines and public roads.

Protecting vulnerable land is regarded as a duty of care. Substantial penalties can result from failure to comply with these requirements. Further information is available from the Forest Practices Board (<http://www.fpb.tas.gov.au/fpb>).

Local government

Planning schemes vary as to whether a permit is required to remove riparian vegetation on private and Crown land. In those municipalities where a permit is required, variations exist as to what land-use activities are considered exempt.

Some recent planning schemes incorporate a Wetlands and Waterways Schedule, which specifies the objectives and standards for development in or near waterways and wetlands. While the details of the Schedule vary between planning schemes, they typically cover general works, road construction, water quality protection, and riparian vegetation clearance (see generic example in box).

A key objective of the Schedule is to maintain riparian vegetation. This provides a natural filter for nutrients and soluble pollutants, prevents erosion and increased sediment flows, and provides habitat to preserve biological diversity. In implementing the Schedule, removing vegetation is generally prohibited within a set distance of the outer boundary of a stream bank of a waterway or a wetland. Removing vegetation within this distance may be approved if it can be demonstrated that the performance criteria have been met.

Issue: Riparian Vegetation	
Objective	
To maintain riparian vegetation as a natural filter for nutrients and soluble pollutants, and to prevent erosion and increased sediment flows.	
Acceptable solution	Performance criteria
a) No vegetation is to be removed in or within 30 metres of <ul style="list-style-type: none"> i) a permanent wetland ii) a waterway iii) a shoreline or estuary. 	a) If it is proposed to remove vegetation in or within 30 metres of the boundary of a waterway or wetland, applicants should demonstrate through a plan of management how <ul style="list-style-type: none"> i) the capacity of the remaining vegetation to act as a natural filter for nutrients and soluble pollutants will not be adversely affected ii) increased sediment flows will be prevented iii) biological diversity will be maintained iv) weeds will be removed in accordance with best practice environmental management principles.
b) No filling, draining or alteration of the water level of a naturally occurring waterway or wetland is allowed.	b) Any development or works affecting the water level of any naturally occurring waterway or wetland must not adversely affect natural flows and there is to be no increase in erosion or sedimentation as a result of the development or works.

Other controls

Clearing riparian vegetation can trigger a number of other legislative requirements

- Environmental Management and Pollution Control Act 1994
- Crown Lands Act 1976
- National Parks and Wildlife Act 1970
- Threatened Species Protection Act 1995
- Environment Protection and Biodiversity Conservation Act 1999
- Aboriginal Relics Act 1975
- Agricultural and Veterinary Chemicals (Control of Use) Act 1995.

These statutory requirements are outlined in *Environmental Best Practice Guidelines 1. Legislative and Policy Requirements for Protecting Waterways and Wetlands when Undertaking Works*. The relevant government agencies should be contacted for further advice.

6. References

Abernethy, B. & Rutherford, I. 1999. *Guidelines for Stabilising Streambanks with Riparian Vegetation*. Technical Report 99/10. Co-operative Research Centre for Catchment Hydrology, Melbourne. <http://www.catchment.crc.org.au/pdfs/technical199910.pdf>

Bryant, S. & Jackson, J. 1999. *Tasmania's Threatened Fauna Handbook*. Threatened Species Unit, Department of Primary Industries, Water & Environment, Hobart. <http://www.dpiwe.tas.gov.au>

Forest Practices Board. 2002. *Information Sheet: Land Clearing*. FPB, Hobart. <http://www.fpb.tas.gov.au/fpb/>

Kirkpatrick, J.B. & Gilfedder, L.A. 1999. *Tasmanian Bushcare Toolkit*. Department of Primary Industries, Water & Environment, Hobart. <http://www.bushcare.tas.gov.au>

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Price, P. & Lovett, S. 2002. *Riparian Habitat for Wildlife. Fact Sheet 5*. Land & Water Australia, Canberra. <http://www.rivers.gov.au/manage/index.htm>

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Tasmanian Bushcare Reference Panel. 1999. *Vegetation Management Strategy for Tasmania*. Department of Primary Industries, Water & Environment, Hobart. <http://www.nht.tas.gov.au/guides/vmst.pdf>

Thorp, V. 1999. *Restoring Wetlands and Waterways: A Guide to Action*. Tasmanian Environment Centre, Hobart.

Wright, D. & Jacobson, T. 2000. *Managing Streamsides: Stock Control, Fencing and Watering Options*. Department of Primary Industries, Water & Environment, Tasmania.

These guidelines should be used in conjunction with the appropriate technical advice and literature.

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Checklist

This checklist summarises the environmental management principles outlined in *Environmental Best Practice Guidelines 7. Managing Riparian Vegetation*. The works plan prepared for any works in waterways and wetlands that may affect the riparian zone should show that the measures listed below will be used to minimise the risk of causing environmental harm to the riparian zone during and after the works.

- ☐ Remnant vegetation preserved
- ☐ Expert advice sought
- ☐ Riparian zone fenced off
- ☐ Width of riparian zone reflects management objectives
- ☐ Channel stabilised
- ☐ Appropriate native species used for revegetation
- ☐ Weed removal program prepared
- ☐ Management plan prepared

Environmental Best Practice Guidelines 8. Guiding Community Involvement in Works on Waterways and Wetlands

Tasmania has a long history of community involvement in works on the State's waterways and wetlands. Traditionally, the community has been involved in irrigation and drainage schemes, 'river improvement' schemes, and farm dam construction. In recent years, Landcare, Rivercare and Waterwatch groups have protected, monitored, managed and rehabilitated waterways and wetlands around the State.

The Rivercare Program was established to ensure progress towards the sustainable management, rehabilitation and conservation of rivers. Many Rivercare projects in Tasmania are carried out by community groups so the State Government has developed a framework to help groups plan and implement their projects. Rivercare Plans are a key component of that framework, which are designed to

- achieve sustainable outcomes for works in and along rivers by ensuring that the works are appropriate, effective, and in accordance with other activities in the catchment
- foster community spirit and cohesion in managing rivers
- ensure appropriate work practices are adopted
- encourage groups to continue maintaining and improving rivers after their projects have finished.

Community groups are advised to seek advice and support from their local council before starting their project. When notified of a proposed project, council staff should find out if the group has a plan. If not, they should suggest that one be developed as part of the assessment process. The nature of the plan will depend on the scale of the project. All projects funded by government, including National Heritage Trust and local community grants, and most self-funded projects will need a Rivercare Plan. Smaller self-funded works may only need a works plan.

1. Developing a Rivercare Plan

Guidelines for Planning Rivercare Projects in Tasmania has been produced by the Tasmanian Rivercare Technical Assessment Panel (TRTAP) and the Department of Primary Industries, Water and Environment (DPIWE) (2000) to help community groups plan their Rivercare projects. Community groups should be encouraged to use the Guidelines when developing their project. The Guidelines can be downloaded from the DPIWE website at www.dpiwe.tas.gov.au.

The steps involved in developing a Rivercare Plan are

1. Vision for the river
2. Assess river condition
3. Management issues and objectives
4. Technical assessment and advice
5. Schedule of works
6. Links with other plans and processes
7. Monitoring the project
8. Provision for maintenance
9. Display and endorsement of the plan
10. Submit Rivercare Plan or works plan to council for assessment

Groups should be encouraged to see their Rivercare Plan as a 'living document' that states their community's long-term vision for the river and outlines the works they want to do, both in the immediate future and over the next 5-10 years.

1. Vision for the river

Groups should define their vision for the river and its catchment. The vision statement can be as short or as long as the group wants, provided it adequately describes their collective vision for the river. It may describe the river's look and 'feel', quality, riverine environment, riparian vegetation, birds and animals, agricultural production, recreational use and so on.

Public consultations should be held so the wider community and local government can contribute to the vision. Consulting the community will also allow groups to determine their community's awareness of the river and its condition, and discuss ways the vision might be achieved.

2. Assess river condition

Groups should survey their river to assess its condition and identify sites that are relatively healthy or degraded. Surveying the river will make it easier to determine what works need to be done and their priority, as well as the resources needed to do the works. The data collected will usually include information about remnant native vegetation, threatened species, weeds, stream conditions, erosion, bed and bank stability, stock management and fencing.

Guidelines for Planning Rivercare Projects in Tasmania (TRTAP & DPIWE, 2000) discusses the issues likely to be faced when surveying the river and outlines the data that should be collected. It also contains proformas that can be used to record the survey data.

3. Management issues and objectives

Groups should decide on the problems they will tackle and the objectives for resolving them. These decisions will be based on the analysis of the survey data. Each objective should show how the problem will be managed in order to achieve the group's vision for the river.

Relevant landowners and river users should be consulted to ensure no problems are missed and to make sure there is consensus on how the problems will be managed.

4. Technical assessment and advice

Groups should seek appropriate advice when developing their Rivercare Plans. The advice should cover a range of specialties, depending on the needs of the project. It may include

- An engineering survey to determine the suitability of the site and make sure the design of any structures, such as riffles and rip-rap, is appropriate before works begin.
- A geomorphic assessment to show how the river functions from a physical and hydraulic perspective (at a catchment, sub-catchment and reach scale), and how it will respond to the proposed works.
- Threatened Species Unit of DPIWE to find out if the works could affect any critical habitats and endangered species.

Possible sources of advice include State Government employees, extension staff and consultants. In addition, non-government organisations such as Birds Tasmania and the Tasmanian Field Naturalists can often provide useful information on bird and animal behaviour, and habitat needs and preferences.

Groups should be encouraged to seek advice in the early stages of developing their plans, although sometimes it will be needed in the latter stages as well. The advice should always be in writing, after a site visit. Any advice should be included in the plan as an attachment that can be referred to later.

Groups should also seek advice on public liability and any other insurance issues and liabilities that could arise during and after the project.

5. Schedule of works

The schedule of works should include

- A list of the planned works, along with their intended timelines and costings.
- A detailed description of the methods to be used for each of the works.
- A series of maps and aerial photographs that show the location and extent of all planned works.
The maps are best done in 1.5-2.0 kilometre sections so they are clear and unambiguous.
- Detailed plans of all major river works, such as riffles and other structures.

General statements about the methods to be used can be given in the body of the plan. However, detailed descriptions of the proposed works should be included in the works schedule on a section-by-section basis. This is especially important if the works involve vegetation clearance (eg willows), in-stream works (eg riffles), stream bank works (eg rip-rap), or the use of machinery. Each of the descriptions should be linked to a map. An example of a works schedule can be found in Guidelines for Planning Rivercare Projects in Tasmania (TRTAP & DPIWE, 2000).

6. Links with other plans and processes

It is essential that groups obtain the support and agreement of the majority of landowners along the river when developing their Rivercare Plans. Council staff can advise community groups about the other interest groups and individuals that should be consulted. These people should be consulted to determine the likely effects of the plan on them and to obtain their consent.

It is also important to consider land use in the catchment and to link the plan to other management plans in the area. Such plans may include Rivercare Plans for other parts of the river, catchment management plans, whole farm plans, weed management strategies, and endangered species management plans.

Council planning schemes and management plans for national parks, state reserves and other Crown lands in the catchment should be considered to ensure the plan is co-ordinated with other planning processes.

If Rivercare Plans have or are being developed for other sections of the river they should be linked and integrated with each other. Groups should work out how they can co-ordinate their works with those of nearby groups. Groups working along the same river or in the same region should be encouraged to share resources and integrate their plans. The local DPIWE Water Management Officer and council planning officers may be able to facilitate this process if necessary.

7. Monitoring the project

Monitoring the river before, during and after the project will give an indication of the success of the project and the maintenance needed. However, groups do not have to do all the monitoring themselves. Members of the local community, schools and the local council may be able to help.

Several techniques can be used to monitor the success of a Rivercare Plan and its associated works. Groups can assess the condition of the river using the river survey proforma found in Guidelines for Planning Rivercare Projects in Tasmania (TRTAP & DPIWE, 2000). The proforma encourages groups to examine all components of the river, including the riparian vegetation, in-stream logs, erosion and sediments. Photo-points (photographs taken from fixed locations) can also be used to show the before and after condition of the river, and to monitor long-term changes after the project has been completed.

8. Provision for maintenance

The aim of the Rivercare program is to improve the long-term health of our rivers. Therefore, all groups must show how they will maintain the improvements they make to the river after the project has finished. Maintaining the improvements is particularly important in Tasmania where rivers can degrade quickly and the money spent improving them can be wasted if there are no follow-up works.

Long-term maintenance of the river can be funded by arrangements that share the costs equitably between the beneficiaries. The preferred arrangement is a riverworks district, which provides a framework for collecting the funds and administering and managing the maintenance. Generally, it is recommended that local councils establish riverworks districts and set up special council committees to administer them. However, incorporated trusts and Landcare groups can also establish and administer them. The local council or the DPIWE Rivercare Team can advise groups on the procedures for establishing such arrangements.

9. Display and endorsement of plan

The Rivercare Plan and its accompanying maps and aerial photographs should be displayed and made available to the public so all interested parties have the opportunity to comment on the planned works. Groups should seek endorsement from their general community, and individuals and groups likely to be affected by the plan. The local council may be able to use its normal planning processes to help groups seek public comment and endorsement.

10. Submit Rivercare Plan or works plan to council for assessment

The completed Rivercare Plan should be assessed by the local council before any works start. The level of assessment needed will depend on the scale of the works. The Department of Primary Industries, Water and Environment can be approached if the local council does not have the necessary technical and scientific expertise.

2. References

Tasmanian Rivercare Technical Assessment Panel & Department of Primary Industries, Water & Environment. 2000. *Guidelines for Planning Rivercare Projects in Tasmania*. DPIWE, Hobart.
<http://www.dpiwe.tas.gov.au>

These guidelines should be used in conjunction with the appropriate technical advice and literature.

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EPA Fact Sheets

Appendix C

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Soil & Water Management on Standard Building & Construction Sites



What is this?

A general overview of sediment and erosion control measures that are typically required for single residential building lots including when certain control measures should be installed. Useful for planning and for determining what practices might be suitable for your site. For further details about each of the control measures mentioned go to the relevant fact sheet in the series.

Why is it important?

Sediment generated from erosion on building and construction sites can be a major source of pollution to local waterways. Follow the practices discussed in this fact sheet and you will minimise erosion and control sediment run-off from your site, meet your legal requirements and help protect our waterways.

Fact Sheet 2

WHAT DO I NEED TO DO?

The timing of works and installation of control measures has a major influence on how effective soil and water management is in reducing on-site erosion and the amount of sediment that is carried off-site.

Before starting site works plan to:

- 1) Schedule earthworks in phases throughout the project so that the ground is disturbed for the shortest time possible (**see Fact Sheet 5**).
- 2) Avoid stripping and excavating until all necessary permits, licences and approvals have been obtained and you are ready to start work.
- 3) Install erosion and sediment control measures in accordance with an approved Soil and Water Management Plan (if required) (**see Fact Sheet 3**).

Install erosion and sediment control measures in sequence:

- 1) Choose a single, stabilised site access point (**see Fact Sheet 12**).
- 2) Install sediment fences or fibre rolls at the low end of the site to trap sediment (**see Fact Sheet 14**).
- 3) Divert up-slope catchment runoff around the site by installing a diversion drain and level spreader (**see Fact Sheet 7**).
- 4) Keep as much vegetation as possible to minimise soil erosion and reduce rainwater running across the site (**see Fact Sheet 6**).
- 5) Designate a location where topsoil and other excavation material will be stockpiled during building and construction. Provide suitable controls to prevent erosion (**see Fact Sheet 9**).
- 6) Stabilise areas of exposed soil with vegetation or erosion control blankets and mats (**see Fact Sheet 8**).
- 7) Protect the nearby stormwater system including any stormwater pits on and below the site from blocking up with sediment (**see Fact Sheet 15**).
- 8) Designate an appropriate location within the site where sediment-generating activities can be managed (e.g. wheel wash, brick cutting) (**see Fact Sheet 16**).

Once site works have commenced:

- 1) Monitor sediment and erosion control measures at least once a week and after each rainfall event.
- 2) Construct service trenches away from where water is likely to concentrate. Try not to have service trenches open any longer than necessary (**see Fact Sheet 9**).
- 3) Prevent clean rainwater running across the site by connecting downpipes to the stormwater system as soon as the roof is on the building frame (**see Fact Sheet 10**).

Soil & Water Management Plans



What are these?

Soil and water management plans are specific site plans or drawings that detail sediment and erosion control measures on building and construction sites. The Soil and Water Management Plan (SWMP) shows the type, location, design, installation and maintenance schedule for all these measures and should be considered as the blueprint for controlling all anticipated erosion and for preventing sediment from leaving a site.

Subdivisions or activities that create greater than 250 m² of ground disturbance typically need to submit a SWMP to council with their building or development proposals prior to any site disturbance. Once approved by council, all building and construction works need to be conducted in accordance with the SWMP.

Why is it important?

Sediment generated from erosion on building and construction sites can be a major source of pollution to local waterways. Follow the practices discussed in this fact sheet and you will minimise erosion and control sediment run-off from your site, meet your legal requirements and help protect our waterways.

Fact Sheet 3

WHAT DO I NEED TO DO?

Prepare a SWMP (see Figure 3A):

A SWMP can easily be developed by overlaying information on a copy of the engineering site drawings. The plan must detail the site development and all the systems intended to minimise erosion and trap sediment. On the SWMP show the following:

- 1) Date and author.
- 2) North point and scale.
- 3) Property boundaries.
- 4) General soil description.
- 5) Location and amount of ground disturbance.
- 6) Initial and final contours, location of watercourses, surface drainage and existing stormwater infrastructure.
- 7) Stormwater discharge point, if proposed.
- 8) Location of all proposed temporary drainage control measures.
- 9) Construction details (e.g. building or subdivision layout).
- 10) Location of vegetation to be retained and removed.
- 11) Location of stabilised site access.
- 12) Location of soil, sand or other material stockpiles.
- 13) Location and details of all proposed erosion control measures.
- 14) Location and details of all proposed sediment control measures.
- 15) A statement of who is responsible for establishing and maintaining all erosion and sediment control measures.
- 16) The installation sequence of the different sediment and erosion controls.
- 17) The maintenance program of the sediment and erosion controls.
- 18) The revegetation and rehabilitation program.

Note: Other details may be required depending on the specific requirements of the site, scale of the development and level of ground disturbance. Contact your local council for what information you are required to submit on your SWMP.

Submit the SWMP to council for approval:

A SWMP may be a requirement of your planning or building permit. Ensure that the council has approved your SWMP; otherwise you may be in breach of your permit.

Implement the SWMP and update as needed:

- 1) Keep a copy of the council-approved SWMP at the site at all times.
- 2) Ensure that all on-ground workers understand the SWMP.
- 3) Implement, update and maintain the control measures shown in the SWMP.

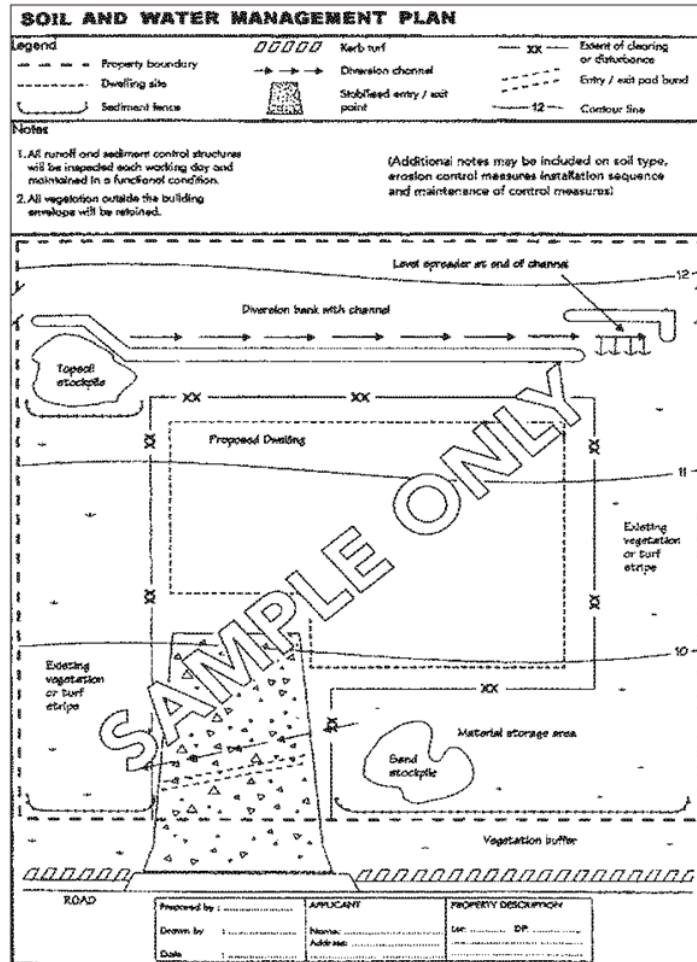


Figure 3A: Example of a SWMP

List of fact sheets

1. Soil & Water Management on Large Building & Construction Sites
2. Soil & Water Management on Standard Building & Construction Sites

3. Soil & Water Management Plans

4. Dispersive Soils – High Risk of Tunnel Erosion
5. Minimise Soil Disturbance
6. Preserve Vegetation
7. Divert Up-slope Water
8. Erosion Control Mats & Blankets
9. Protect Service Trenches & Stockpiles
10. Early Roof Drainage Connection
11. Scour Protection – Stormwater Pipe Outfalls & Check Dams
12. Stabilised Site Access
13. Wheel Wash
14. Sediment Fences & Fibre Rolls
15. Protection of Stormwater Pits
16. Manage Concrete, Brick & Tile Cutting
17. Sediment Basins
18. Dust Control
19. Site Revegetation

Remember:

Everyone working on building and construction sites has a responsibility to prevent pollution. If you do have an accident and pollution occurs you are required by law to notify the site supervisor. If the site supervisor cannot be contacted, workers should immediately notify the local council so they can work with you to minimise any harm to the environment.

Acknowledgement:

Figure 3A from Gold Coast City Council "Best Practice Guidelines for the Control of Stormwater Pollution from Building Sites". Text in this brochure has been obtained and modified from the "Do It Right On Site" brochure series, kindly provided by the Southern Sydney Regional Organisation of Councils.

Date of Issue: December 2008

Dispersive Soils – High Risk of Tunnel Erosion



What is it?

Dispersive soils, or **sodic soils**, collapse or disperse to form dissolved slurry when in contact with fresh water (rain). These soils are highly prone to erosion often leading to **tunnel** and **gully erosion**. Unlike other forms of erosion, dispersion and tunnel erosion result from an imbalance in soil chemistry.

- 1) Tunnel erosion occurs in all municipalities in Southern Tasmania.
- 2) Tunnel erosion results from a combination of both chemical dispersion and physical transport of dispersed clay particles.
- 3) Soils with greater than 6% exchangeable sodium are prone to dispersion.

Dispersion and tunnel erosion usually occurs in subsoils making early detection difficult. Building activities such as excavation, topsoil removal and ponding of rainwater all increase the risk of initiating tunnel erosion. Whilst wind, rain and water runoff are the typical causes of soil erosion on construction sites, the soil chemistry can also determine how prone it is to erosion. Chemistry of the soil determines how well it stays bound together when fresh water is added. Dispersive soils can be caused by high sodium content (i.e. >6% exchangeable sodium); hence they are sometimes called sodic soils. Typically dispersive soils are found in the subsoil as the topsoil is usually non-dispersive. All southern municipalities have dispersive soil risks and tunnel erosion is not uncommon. Dispersive soil can be very patchy in distribution with soil types changing over a few metres in distance, thus it is **very important** to look and test for signs of dispersive soil!

Fact Sheet 4

Why is it important?

Building and construction activities may increase the risk of soil dispersion and can result in the formation of tunnel erosion. Tunnel erosion initially results from the dispersion of clay soils in rainwater, but once the tunnels have formed they can quickly enlarge to form underground drainage paths. When the tunnels collapse they create gullies. Development of tunnel erosion in residential areas has resulted in damage to buildings, roads and septic systems leading to increased public health risks and major impacts on the environment.

During building and construction the runoff from areas of disturbed dispersive soils will contain large amounts of clay and will appear very cloudy. It is very difficult to remove this clay from freshwater without the addition of chemicals (e.g. gypsum). If this runoff enters local waterways it will reduce light levels and decrease water quality. Follow the practices discussed in this fact sheet and you will prevent erosion of dispersive soils from your site, meet your legal requirements and help protect our waterways.

WHAT DO I NEED TO DO?

Before starting site works:

Always ask if there has been soil testing for dispersive or sodic soils, especially in the subsoils where they are more prevalent. An appropriate soil specialist can do this.

Installing the control measures:

- 1) Minimise disturbance to topsoil and vegetation.
- 2) Choose building and construction methods that minimise the need for excavation and subsoil exposure.
- 3) Avoid concentrating water flow over areas that have dispersive topsoil or subsoils. If possible divert water to areas where the soil is not dispersive (**Note:** dispersive soils can be very patchy in distribution).

- 4) When diverting water, create diversion berms/banks by pushing the soil to create banks up hill, this maintains grass in the channel and reduces infiltration directly to the subsoil and the potential for tunnel erosion.
- 5) **Do not** create soakage pits in dispersive soils.
- 6) Immediately infill any trenches or holes to prevent collection and ponding of water on subsoil surfaces.
- 7) **Always** compact dispersive subsoils that have been disturbed or excavated. Dispersive soils require above average compaction. Consider using a 'whacker packer' for small areas or a sheeps foot roller for large areas. Apply gypsum or lime according to soil test recommendations during infilling and cover with topsoil and revegetate.
- 8) **Always** bury any exposed subsoils with topsoil and revegetate.
- 9) Top dress the surface of potentially dispersive soils with gypsum (if soil pH > 6.5) or lime (if soil pH < 5) or a mixture of both (if soil pH is within the range of 5 to 6.5) according to soil test recommendations to reduce dispersion.
- 10) Cover dispersive soils with a minimum 100 mm layer of non-dispersive soil prior to revegetation, or the placement of rock gabions, or concrete.

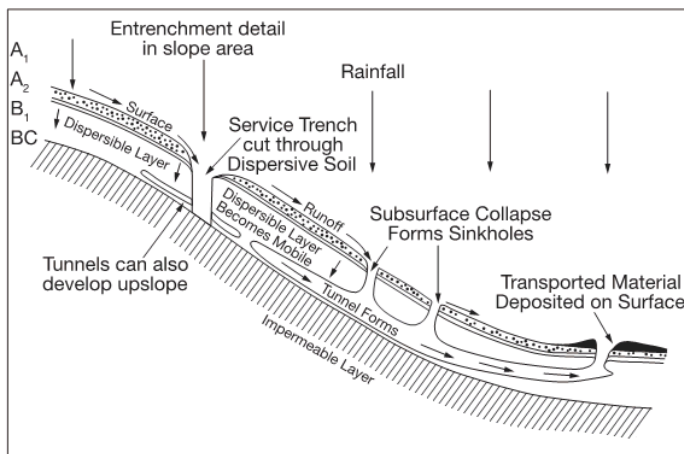


Figure 4A Tunnel erosion development in dispersive soils

Note: You can seek further information and advice on the issue of dispersive soils and tunnel erosion from several sources including: your local council, a soil surveyor, civil engineer or soil specialist, NRM South and the Land Conservation Branch of the Department of Primary Industries and Water (DPIW).

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6. Preserve Vegetation
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Remember:

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Acknowledgement:

Figure 4A after Department of Construction and Environment, Land Protection Division, Victoria "Field Erosion its Characteristics and Amelioration".

Date of Issue: December 2008

Minimise Soil Disturbance



What is it?

Minimise soil disturbance to the greatest extent practicable. Earthworks should be kept to a minimum and should be closely linked with the commencement of building and construction work. To minimise risks, preserve native topsoil and natural vegetation and implement suitable sediment and erosion control measures (see other fact sheets in this series). Areas of soil disturbance on slopes should be roughened and terraced to reduce erosion.

Why is it important?

Sediment generated from erosion on building and construction sites can be a major source of pollution to local waterways. Follow the practices discussed in this fact sheet and you will minimise erosion from your site, meet your legal requirements and help protect our waterways.

Fact Sheet 5

WHAT DO I NEED TO DO?

Design considerations:

- 1) Avoid the need for earthworks by working with the natural contours of the site. Limit building or construction on steep inclines. On slopes choose a subfloor method that will minimise excavation.
- 2) Limit the area of soil disturbance (the excavation envelope) to the minimum required, i.e. the house only.
- 3) Identify suitable sediment and erosion control measures for the excavation envelope.
- 4) Staging works. Consider scheduling earthworks in phases throughout the project to reduce erosion potential and rehabilitate exposed areas quickly to reduce the amount of soil exposed at one time.
- 5) Retain as much stripped topsoil as possible for reuse during landscaping and site rehabilitation.

Before starting site works:

- 1) Ensure approval has been granted by council.
- 2) Identify vegetation, including grass buffers, around the construction site to preserve throughout the development. Mark this as a **No Go Area** (see Fact Sheet 6) on all work plans, including the Soil and Water Management Plan (if required) (see Fact Sheet 3).
- 3) Install sediment and erosion control measures.
- 4) Ensure the operators of earthmoving equipment are aware of the excavation envelope and where stockpiles will be located.

Once site works have commenced:

- 1) Ensure vegetation buffers are protected.
- 2) Carry out staged excavation and stabilisation (if applicable).
- 3) Maintain sediment and erosion control measures.
- 4) Stabilise soil stockpiles by placing sediment fences around their lower edges, cover with fabric, plastic or vegetation.
- 5) Restrict vehicles and equipment to designated areas.

Soil roughening: when using heavy machinery (i.e. non-wheeled vehicles) on exposed slopes.

Don't smoothly grade slopes with compacted soils. This will increase runoff, is hard to revegetate and is highly susceptible to soil erosion.

Don't track heavy machinery across the slope. The track marks will create furrows that water will flow down when it rains.

Do track machinery (e.g. excavators) up and down the slope to create grooves from the wheels/or tracks that will catch seeds, fertilizer, and rainfall. The grooves will roughen the surface in a way that will slow runoff over the slope (see Figure 5A).

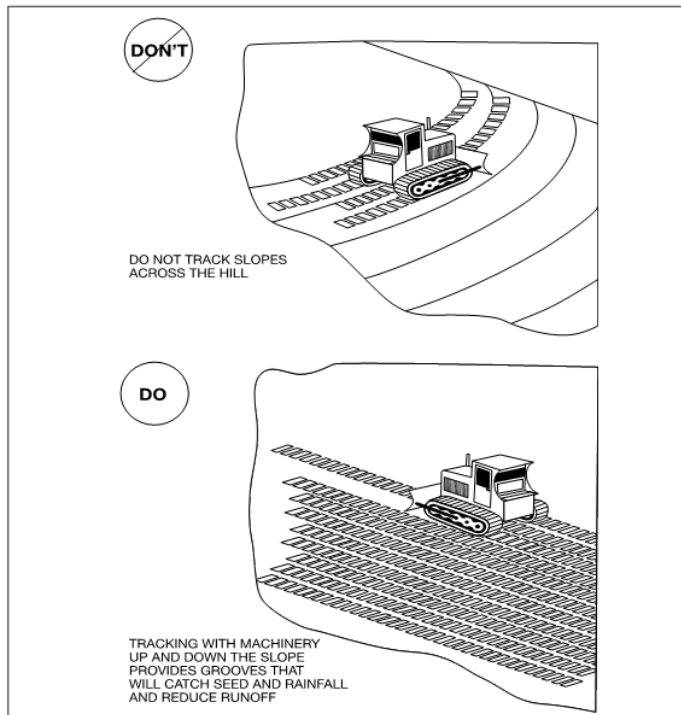


Figure 5A: Avoid moving tracked vehicles across the slope, unless the final pass involves tracking up and down the slope.

Maintaining control measures:

If topsoil has been removed it will need to be replaced (see Figure 5B).

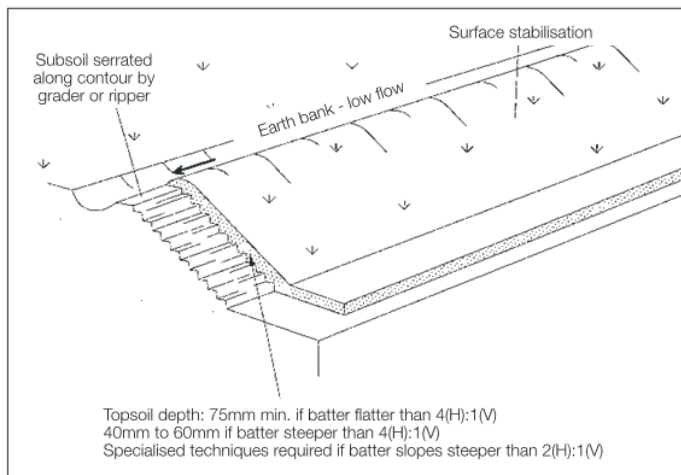


Figure 5B: Replacing Topsoil.

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Acknowledgement:

Figure 5A after California Regional Water Quality Control Board 1999 "Erosion & Sediment Control Field Manual". Figure 5B from Landcom 2004 "Soils & Construction Volume I Managing Urban Stormwater (4th edition)". Text in this brochure has been obtained and modified from the "Do It Right On Site" brochure series, kindly provided by the Southern Sydney Regional Organisation of Councils.

Date of Issue: December 2008

Preserve Vegetation



What is it?

Keep as much of the original vegetation (grass, trees, etc.) on the site by establishing **No Go Areas** for the building and construction phase as well as vegetated filter strips down-slope of the work site. Preserving grassed areas, trees and shrubs protects the soil from erosion and provides an effective filter for sediment runoff.

Why is it important?

Sediment generated from erosion on building and construction sites can be a major source of pollution to local waterways. Follow the practices discussed in this fact sheet and you will minimise erosion from your site, meet your legal requirements and help protect our waterways.

WHAT DO I NEED TO DO?

Before starting site works:

Identify vegetation (trees, shrubs and grassed areas) on site which can be kept throughout the entire building and construction phase and mark this as a **No Go Area**. Include this information on the Soil and Water Management Plan if required (see Fact Sheet 3).

Vegetation is the most effective soil stabiliser available on building and construction sites. Keep groundcover along surface drainage areas and on steeper slopes. Retain significant areas of healthy grass down-slope of the worksite, these strips can be highly effective for filtering out coarse sediment. The flatter and wider the strips are, the more effective they become. Native vegetation along streams and waterways should be retained and protected from sediment by installing additional sediment control measures up-slope e.g. fibre rolls and sediment fences (see Fact Sheet 14). On exposed sites a 400 mm wide planted turf strip between the kerb and the footpath is a good last resort sediment control, filtering the runoff before it enters the stormwater system (see Figure 6A).

Where vegetation needs to be removed, leave it in place for as long as possible and stage earthworks to minimise the amount of site cleared at any time.

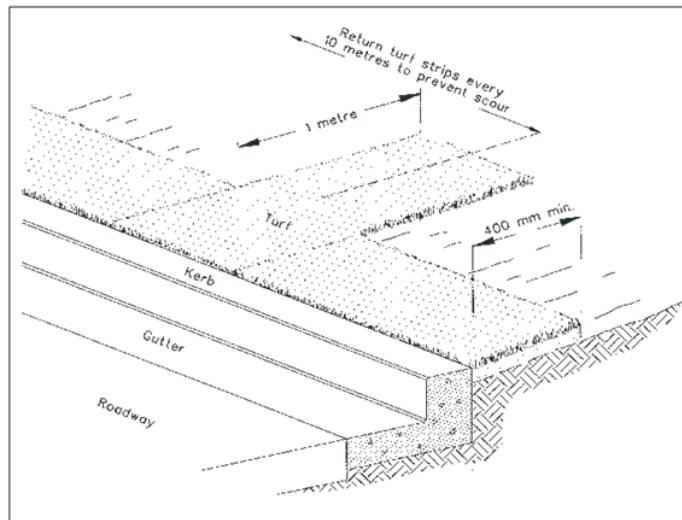


Figure 6A: Planted turf strip.

Fact Sheet 6

Installing the control measures:

Fence off the **No Go Area**. Place red tape or other bright materials around the trees, shrubs and grassed areas to be kept. Ensure staff and subcontractors know not to enter these areas or damage marked trees. Where practicable, maintain the planted turf strip in a healthy state during the building and construction process and ensure it is fenced-off to prevent traffic-induced damage.

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Acknowledgement:

Text in this brochure has been obtained and modified from the "Do It Right On Site" brochure series, kindly provided by the Southern Sydney Regional Organisation of Councils. Figure 6A from Landcom 2004 "Soils & Construction Volume I Managing Urban Stormwater (4th edition)".

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Divert Up-slope Water



What is it?

Design surface drainage up-slope of building and construction sites to divert runoff away from the site. Where practical and particularly where stormwater runoff from more than 0.5 hectares feeds into the work site, divert up-slope water around the disturbed or active work area.

Why is it important?

Sediment generated from erosion on building and construction sites can be a major source of pollution to local waterways. Follow the practices discussed in this fact sheet and you will minimise erosion from your site, meet your legal requirements and help protect our waterways.

WHAT DO I NEED TO DO?

Before starting site works:

Look at the site plans to identify site areas where stormwater can be diverted around the disturbed or active work area. Stormwater can be diverted with the use of small diversion drains. Note that the stormwater must not be diverted onto adjacent properties; instead it must discharge the work site at a legal point of discharge. Diversion drains need to be properly designed to ensure that they can convey water without overflowing or accumulating sediment. Document the diversion drains on your Soil and Water Management Plan (if required) (see Fact Sheet 3). Ensure workers on-site are aware of the need to maintain the diversion drains. Do not dig diversion drains on dispersive soils (see Fact Sheet 4), instead build soil berms.

Installing the control measures:

Diversion drains: A diversion drain is a channel constructed on the high side of a site to divert surface runoff from rainwater that would otherwise flow down onto the disturbed or active work area.

- 1) The channel should be about 150 mm deep with a curved shape.
- 2) Place the excavated soil from the channel on the down-slope side to increase the diversion drain's capacity.

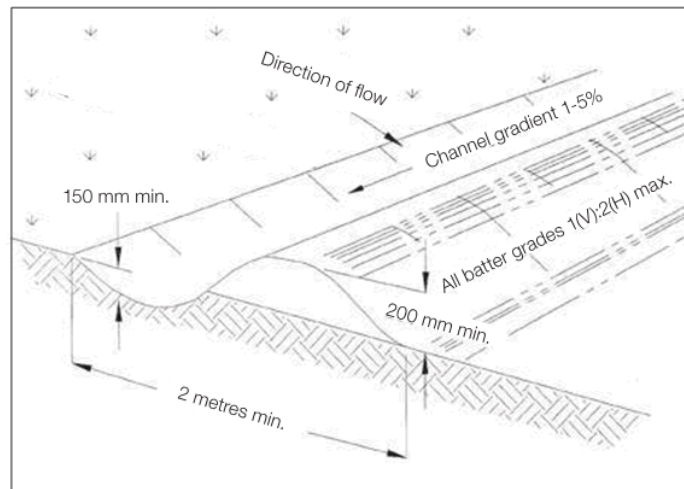


Figure 7A: Example of a diversion drain.

Fact Sheet 7

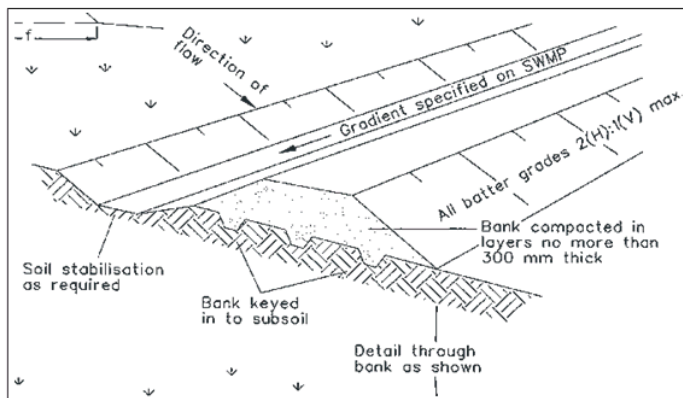


Figure 7B: Example of a diversion drain for high flow.

- 3) The diversion drain should divert flows to a stable drainage line to ensure that the channel does not itself cause erosion where it discharges.
- 4) The diversion drain should be kept clean and free of plantings and mulch as this will lead to the deposition of sediment that obstructs water flow and causes water to breach the channel and create unwanted erosion.

Level spreader: Level spreaders are generally used at the outlet of diversion channels. A level spreader is a wide, level overflow sill built across a slope. It allows even spread of water flow so velocities are reduced and soil erosion is avoided. This should only be constructed to release water to areas where the:

- 1) Water flow will not become concentrated.
- 2) Soil is stabilised and the site is not within the path of construction activities.
- 3) Ground remains well-vegetated.
- 4) Discharged water flow will be slow moving.

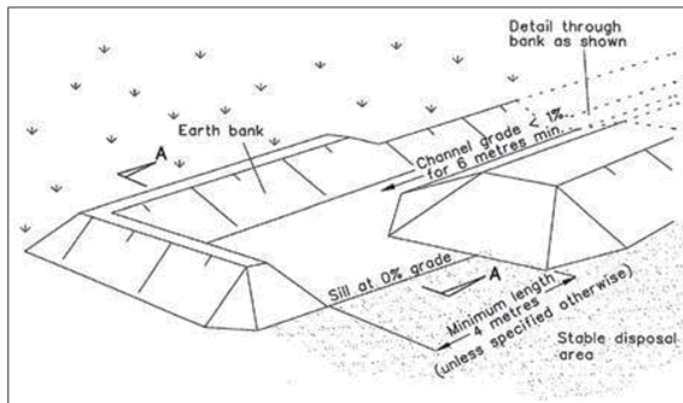


Figure 7C: Example of a level spreader used to release minor concentrated flows as sheet flow.

In some cases such as on steep slopes or where there are high flow velocities, a grass or geotextile fabric lined channel may be required to return the diverted flow to the stormwater system or a stable drainage line.

Maintaining the control measures:

Check diversion drains, level spreaders and discharge areas for signs of erosion.

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Acknowledgement:

Text in this brochure has been obtained and modified from the "Do It Right On Site" brochure series, kindly provided by the Southern Sydney Regional Organisation of Councils, Figures 7A, 7B & 7C from Landcom 2004 "Soils & Construction Volume I Managing Urban Stormwater (4th edition)".

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Erosion Control Mats & Blankets



What are these?

Erosion mats and blankets are used as a soil cover and a protective barrier for vegetation establishment. They are applied on soils with a high erosion risk, on steep sites or for site rehabilitation. When applied correctly, they are one of the most effective and practical means of controlling runoff and erosion on disturbed land prior to vegetation establishment.

Why is it important?

Sediment generated from erosion on building and construction sites can be a major source of pollution to local waterways. Follow the practices discussed in this fact sheet and you will minimise erosion from your site, meet your legal requirements and help protect our waterways.

Fact Sheet 8

WHAT DO I NEED TO DO?

Before starting site works:

Identify where erosion is likely to occur i.e. areas of bare soil, especially on slopes steeper than 3:1 or when there is a delay in building and construction work or site rehabilitation. Select erosion control mats or erosion control blankets.

Erosion control mats: are heavier, synthetic and non-degradable, they are designed to add stability to soils and are often filled with topsoil, and vegetated when installed. Erosion control mats are suitable on slopes and in channel-lining applications.

Erosion control blankets: are light-weight and open-weave made from mulch, straw and wood fibre and held together by natural or synthetic netting. They are used for establishing and reinforcing vegetation. Their application depends on the blanket materials. Synthetic netting and wood fibre is stronger and can be used on steeper slopes compared to jute and straw blankets, which rapidly degrade and are more suitable for flatter areas. Check with suppliers of erosion control blankets about the applications of their different products.

Erosion control blankets can be used in conjunction with soil seeding, preventing the seed washing away and erosion of the prepared seedbed. Once established, the vegetation provides permanent erosion control.

Document erosion control mats and blankets on your Soil and Water Management Plan (if required) (see Fact Sheet 3).

Installing the control measures:

Erosion control mats should be installed immediately on exposed soils, while erosion control blankets should be fitted on newly seeded or landscaped areas. See Figures 8A and 8B for their installation guidelines.

Maintaining the control measures:

Close inspection after rainfall events and major runoff occurrences is essential. Check for damage due to water running under the mat or blanket or if it has been displaced by wind. Restabilise with anchor pins or wooden spikes. If significant erosion has occurred repair the fabric. Grading and reseeding may also be necessary. Continue inspections until vegetation is firmly established.

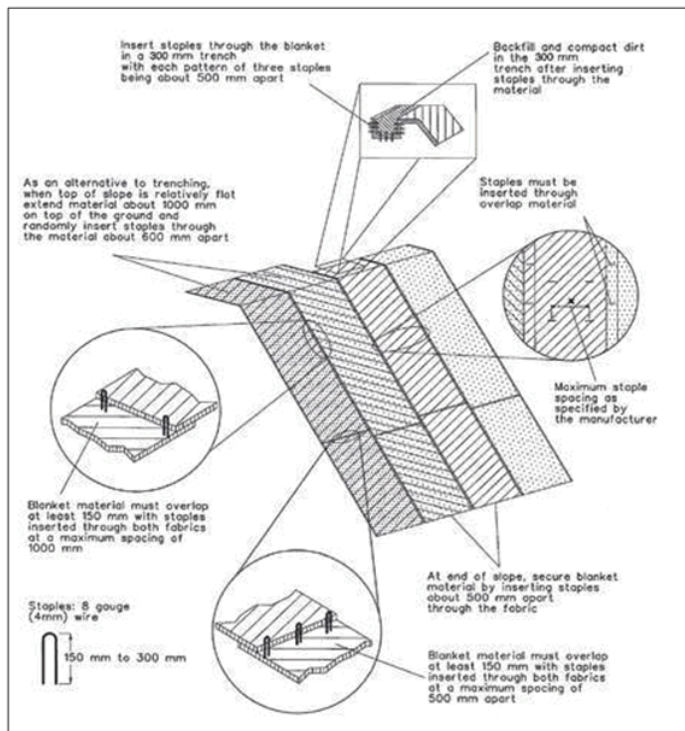


Figure 8A: Installation of an erosion control blanket on a hillside.

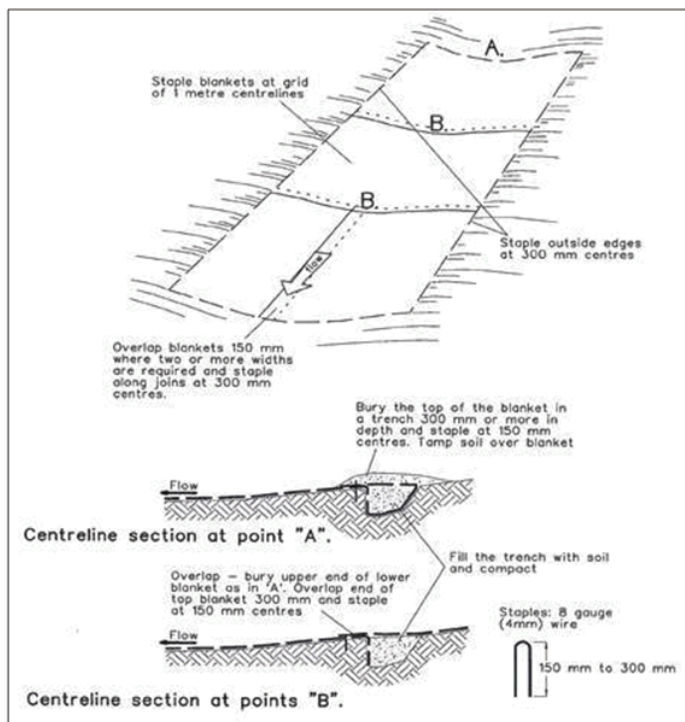


Figure 8B: Erosion control mat used to line a channel.

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Acknowledgement:

Figures 8A & 8B from Landcom 2004 "Soils & Construction Volume I Managing Urban Stormwater (4th edition)".

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Protect Service Trenches & Stockpiles



What is it?

When excavated, service trenches can concentrate runoff and cause rapid soil erosion. This fact sheet discusses methods to install service trenches in a manner that does not cause soil erosion.

Temporary stockpiles are at risk of being washed or blown away. This fact sheet discusses proper on-site storage of materials such as sand, gravel, topsoil, mulch and woodchips.

Why is it important?

Sediment generated from erosion on building and construction sites can be a major source of pollution to local waterways. Follow the practices discussed in this fact sheet and you will minimise erosion from your site, meet your legal requirements and help protect our waterways.

Fact Sheet 9

WHAT DO I NEED TO DO?

Before starting site works:

Service trenches: if your site has fine soil, protection measures may be needed. Decide where the service trenches will need to go and document them on your Soil and Water Management Plan (if required) (see **Fact Sheet 3**). Ideally they should be away from areas where water flow is likely to concentrate. Where possible coordinate the various service connections so a single trench can be used and quickly backfilled. Also try scheduling the work when rainfall is low. Be aware if you have dispersive soil (see **Fact Sheet 4**).

Stockpiles: avoid stockpile loss and stormwater pollution by limiting the amount of material on-site and remove all materials when work is complete.

Identify a protected storage area for building material stockpiles away from on-site drainage or stormwater flow paths. Place control measures such as diversion drains up-slope or sediment fences down-slope. Cover the stockpiles with fabric, plastic or a temporary grass cover. Drivers delivering stockpile material should always use the protected storage area as the drop-off. Document your storage area on the Soil and Water Management Plan (if required) (see **Fact Sheet 3**) and ensure staff are aware of its importance.

Note: Don't stockpile sediment or building materials (sand, gravel, mulch) on roadways or within drainage areas.

Installing the control measures:

Service trenches:

- 1) Remove and store vegetated topsoil so it can be replaced after works to provide immediate erosion protection.
- 2) Place the soil on the uphill side of trenches to divert water flow away from the trench line. Temporary bunds can be used.
- 3) The trench should be open for the shortest time practicable and avoid opening them when the risk of rainfall is high.
- 4) Once completed, backfill trench with subsoil and compact.
- 5) Replace top soil, level and top up to account for soil settling.
- 6) If trenches are on steep slopes, install earthbanks along the backfill surface at 6 metre intervals to divert flows and prevent erosion.
- 7) Excess soil should be used or disposed of in such a way that it does not create a wind or water erosion hazard.

Stockpiles:

- 1) Locate stockpiles at least 5 metres from stormwater flow paths, roads and hazard areas.
- 2) Place on gently sloping ground (not level areas which tend to be overland low paths) as a low, flat, elongated mound.

- 3) Stockpiles should preferably be less than 1.5 metres high.
- 4) Construct an earth bank on the up-slope side to divert runoff around the stockpile and install a sediment fence 1–2 metres down-slope of the stockpile. The height of the sediment fence should be equal to the stockpile height and the length equal to the stockpile length at the base.
- 5) Stockpiled materials should be covered during windy conditions, rain or unattended periods. Topsoil stockpiles left for extended periods should be revegetated.

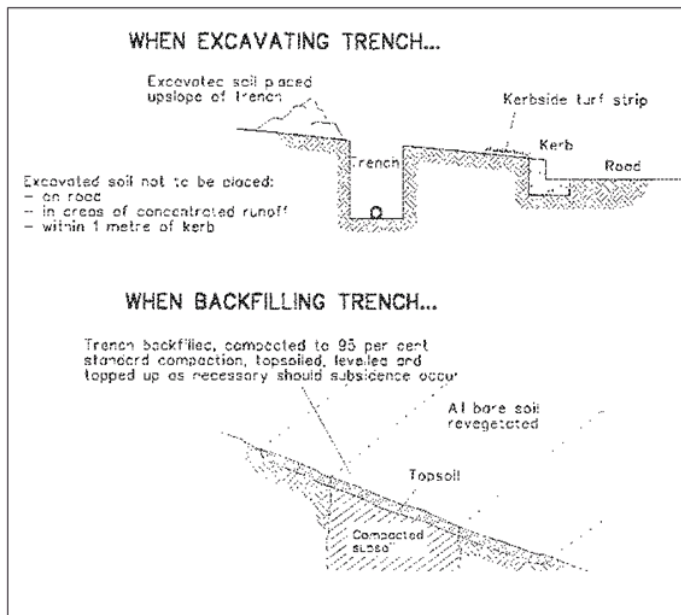


Figure 9A: Example of a service trench.

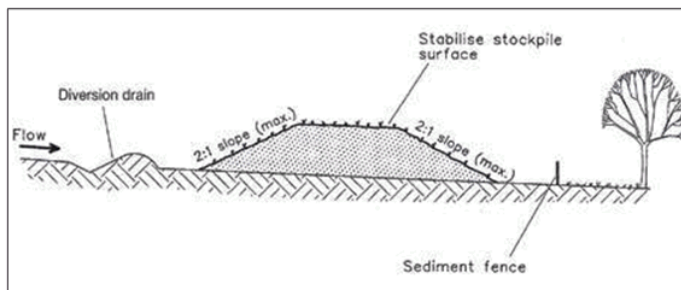


Figure 9B: Keep building materials in protected stockpiles.

Maintaining the control measures:

Service trenches: if they fill with water, pump water evenly over a stabilised vegetated area that will filter out the suspended clays. If this is not possible, add a small amount of gypsum to the water and allow the suspended clays to settle before pumping the water out.

Stockpiles: should be covered and checked regularly. Sediment and erosion controls (diversion drains and sediment fences) associated with stockpiles also need to be monitored and maintained.

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Date of Issue: December 2008

Stabilised Site Access



What is it?

A stabilised site access is a single entry/exit point for building and construction sites that is designed to reduce the tracking of sediment off-site. It provides a clean, dry surface for vehicles to enter and unload during all weather conditions without destroying vegetation or carrying large amounts of sediment onto paved road surfaces.

Why is it important?

Sediment generated from erosion on building and construction sites can be a major source of pollution to local waterways. Follow the practices discussed in this fact sheet and you will control sediment run-off from your site, meet your legal requirements and help protect our waterways.

WHAT DO I NEED TO DO?

Before starting site works:

Identify the best location to place the stabilised site access – ideally it should be in an elevated position with little or no water flowing to it from up-slope and away from any down-slope stormwater pits. All deliveries should be able to be made through this point. Document it on your Soil and Water Management Plan (if required) (see Fact Sheet 3) and ensure on-site staff are aware of its importance.

Installing the control measures:

The recommended construction method for the stabilised site access is laying down 200 mm of aggregate or recycled concrete greater than 40 mm in size (crushed sandstone is not suitable). Where the site access slopes toward the road, a diversion hump should be installed across the stabilised area to direct stormwater runoff to the side where it can be filtered by a sediment fence. If the construction process enables it, a permanent driveway can be laid and used as the access point.

Stabilised site access:

- 1) Strip at least 150 mm of topsoil, level area and stockpile in the space available.
- 2) Compact infill.
- 3) Cover the area with geotextile.
- 4) Construct a 200 mm thick pad over geotextile using aggregate at least 40 mm in size, ideally from kerb to building.
- 5) Construct a trafficable diversion hump immediately within the boundary to divert water to a sediment fence or other sediment control measure.

Note: On larger sites cattle grids or shaker grids can also be installed at the access point. These allow the wheels to turn a couple of times and shake off excess sediment. If sediment is still being tracked off-site then a wheel wash should be installed (see Fact Sheet 13).

Fact Sheet 12

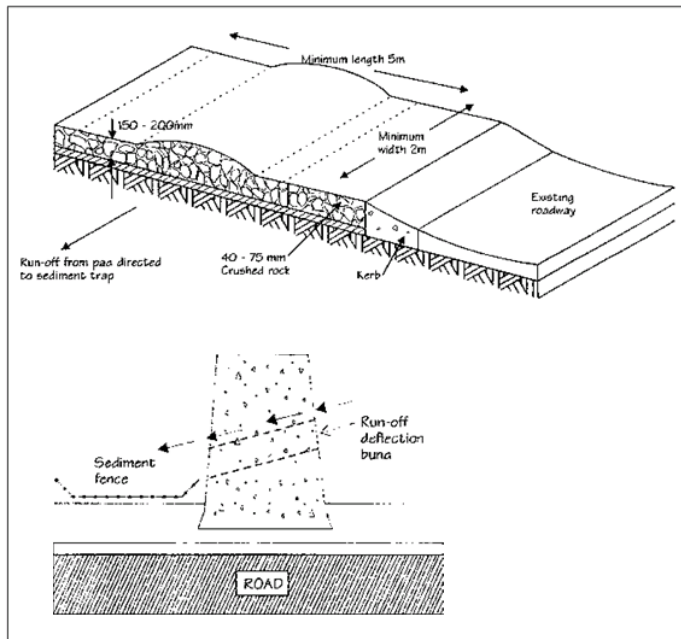


Figure 12A: Stabilised site access for building sites only.

Maintaining the control measures:

As vehicles use the stabilised site access they will slowly compact the gravel or rock. When it becomes too compacted the voids between the rock and gravel disappear and the stabilised site access will no longer trap mud and dirt.

Monitor the surface of the stabilised site access and ensure that it drains to the sediment fence or other sediment control measures. Add new gravel or rock as needed. Roads should be inspected for any sediment that has escaped the site at the end of each day and swept up if necessary. This should also be done whenever rain looks likely.

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9. Protect Service Trenches & Stockpiles
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11. Scour Protection – Stormwater Pipe Outfalls & Check Dams

12. Stabilised Site Access

13. Wheel Wash
14. Sediment Fences & Fibre Rolls
15. Protection of Stormwater Pits
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Acknowledgement:

Figure 12A and text in this brochure has been obtained and modified from the "Do It Right On Site" brochure series, kindly provided by the Southern Sydney Regional Organisation of Councils.

Date of Issue: December 2008

Sediment Fences & Fibre Rolls



What are these?

Sediment fences and fibre rolls are sediment control measures installed across slopes or along the parameter of building and construction sites. Fibre rolls are a range of organic products (coconut fibre, straw, flax) that are rolled into large diameter logs. Sediment fences are vertical barriers made from woven geotextile that are held in place by star pickets and a backfilled trench.

Why is it important?

Sediment generated from erosion on building and construction sites can be a major source of pollution to local waterways. Follow the practices discussed in this fact sheet and you will control sediment run-off from your site, meet your legal requirements and help protect our waterways.

WHAT DO I NEED TO DO?

Fibre Rolls: are log-like products commonly consisting of biodegradable fibres. They vary from biodegradable rolled coir (coconut fibre) and hessian socks filled with straw or mulch, to non-biodegradable geotextile tubes filled with mulch or straw. Biodegradable fibre rolls can be left permanently onsite to assist stabilisation and will support vegetative growth if left in place.

Sediment fences: are a commonly used sediment control measure constructed from heavy-duty geotextile. Although a sediment fence looks like shade cloth it is very different (shade cloth is not appropriate because it cannot slow water flow enough to adequately pond water up-slope of the fence and allow sediment to settle under gravity).

Before starting site works:

Identify drainage flow pathways that will intercept runoff from the site. Decide whether to use fibre rolls or sediment fences. Use fibre rolls at the base of an embankment, on slopes that are exposed, or on vegetated slopes where vegetation is failing to control erosion. Sediment fences should be used on small drainage areas and placed down-slope of potential areas of erosion. Document these measures on your Soil and Water Management Plan (if required) (see Fact Sheet 3).

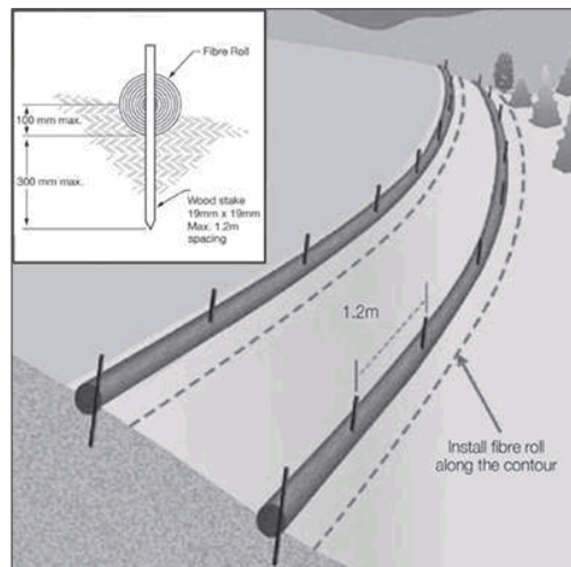


Figure 14A: Installation of fibre rolls

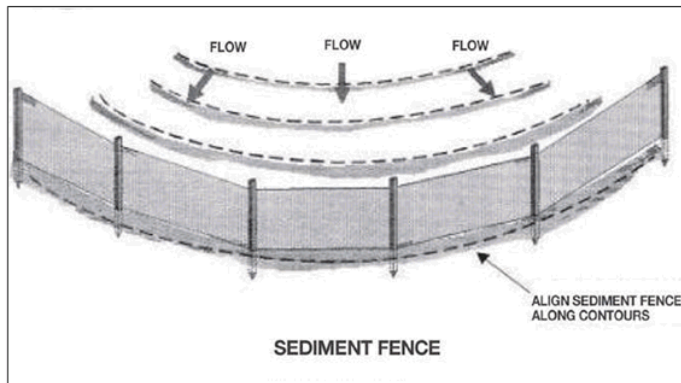
Fact Sheet 14

Installing the control measures:

Sediment control measures need to be in place prior to the start of site works. They can be altered after ground disturbance activities and if the site's drainage patterns change.

Installing fibre rolls:

- 1) Find a suitable installation site (if on a slope, place parallel to contours).
- 2) Remove large rocks and debris, and prepare a shallow concave trench (50–100 mm deep) to inset the fibre roll. (**Note:** Place excavated material on the upside of the fibre roll to prevent undercutting.)
- 3) Place the fibre roll in a shallow trench and stake through the fibre roll every 30 cm.
- 4) Place further stakes on both sides of the fibre roll to within 2 m from the end of the roll.

**Installing sediment fences:**

- 1) Survey and mark out location of sediment fence, ensure it is parallel to the contours of the site.
- 2) Dig a 150 mm trench immediately above the proposed fence line.
- 3) Place the bottom of the fabric to the base of the trench and run fabric up the down-slope side of the trench.
- 4) Backfill the trench and compact to secure anchorage of the fabric.
- 5) Drive 1.5 m star pickets into ground, 2 m apart to support the sediment fence fabric. Tension and fasten fabric to pickets using UV stabilised zip ties or wire ties.
- 6) Join sections of fabric at a support post with a 2 m overlap.
- 7) Angle the ends of the sediment fence upslope to reduce scouring.

Don't place sediment fences across creeks or major drainage lines.

Maintaining the control measures:

Fibre rolls and sediment fences should be checked regularly, especially after every rain event and cleaned or repaired. For sediment fences check that all the pickets and the bottom of the fence are secure and that there are no tears in the fabric.

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Acknowledgement:

Figures 14A and 14B after California Regional Water Quality Control Board 1999 "Erosion & Sediment Control Field Manual".

Date of Issue: December 2008

Protection of Stormwater Pits



What is it?

Protect the stormwater system from blocking with sediment and building materials by placing control measures around or inside any stormwater pits on and below the site. Stormwater pit protection is an important last resort sediment control measure that should be used in conjunction with other on-site practices.

Why is it important?

Sediment generated from erosion on building and construction sites can be a major source of pollution to local waterways. Follow the practices discussed in this fact sheet and you will control sediment run-off from your site, meet your legal requirements and help protect our waterways.

Fact Sheet 15

WHAT DO I NEED TO DO?

Before starting site works:

Identify any stormwater pits and drains on and below the site. Plan the layout of the work site so that any wash-down areas and tile or brick cutting areas are not near them. Clearly mark all the stormwater pits and drains on the site plan and choose appropriate methods that will protect them. Install these sediment control measures before site work commences. Document them on your Soil and Water Management Plan (if required) (see **Fact Sheet 3**) and ensure staff are aware of its importance.

Note: the placement of sediment control measures on road reserves (i.e. off the work site) will normally require approval from the owner of the road, i.e. council or the Department of Infrastructure, Energy and Resources (DIER).

Installing the control measures:

There are a range of sediment control measures to protect stormwater pits including, sediment fence traps, filter socks and stormwater pit traps. Those that collect sediment above the stormwater pit are easier to clean but have low storage capacity compared to controls that are installed inside the stormwater pits. Place cones around controls in the gutters or on roads to prevent vehicles damaging them.

Sediment fence trap: these are sediment fences staked around the stormwater pit to trap sediment. Fabric must be partially buried so that water and sediment does not just flow underneath. The more space between the fence and the pit, the more chance of sediment settling and the greater the capacity of the trap (see **Figure 15A**).

Filter socks: are woven tubes filled with compost or bioremediation media that separate sediment, hydrocarbons, nutrients and heavy metals from site runoff. Filter socks are more effective than sandbags or geotextile sausages filled with gravel. Filter socks are able to treat runoff at higher flow rates with significantly less ponding.

Filter socks can be installed in the kerb and gutter below the work site, while longer socks can be used as a barrier around the stormwater pit (see **Figure 15B**).

Stormwater pit traps: are baskets, trays, bags or screens placed just below the entrance of the stormwater pit. They prevent sediment from entering the stormwater system. Fine mesh or fabric filters should be used to capture sediment (see **Figure 15C**).

Maintaining the control measures:

All sediment control measures should be inspected, especially after rainfall events and cleaned regularly to maintain effectiveness and prevent bypass. The built up material can be re-stockpiled and used on-site (if it is not contaminated), or otherwise disposed to landfill.

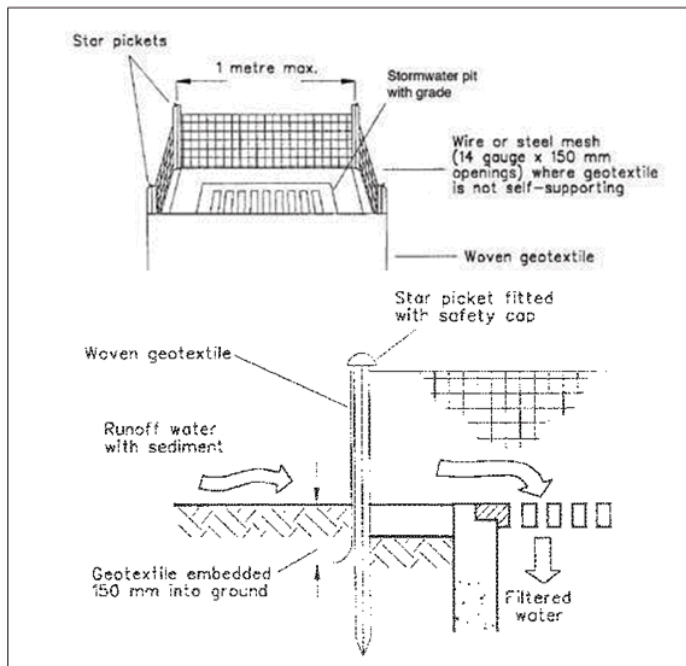


Figure 15A: A sediment fence trap.

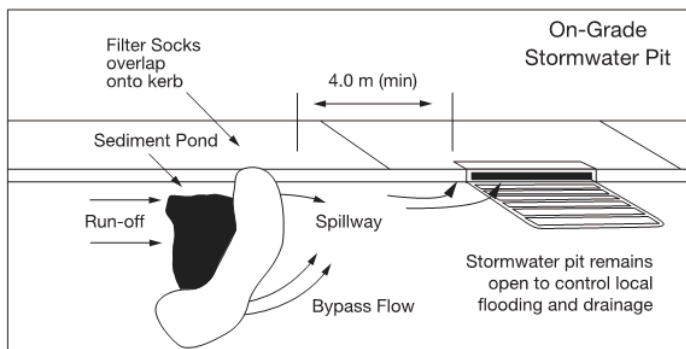


Figure 15B: A filter sock.

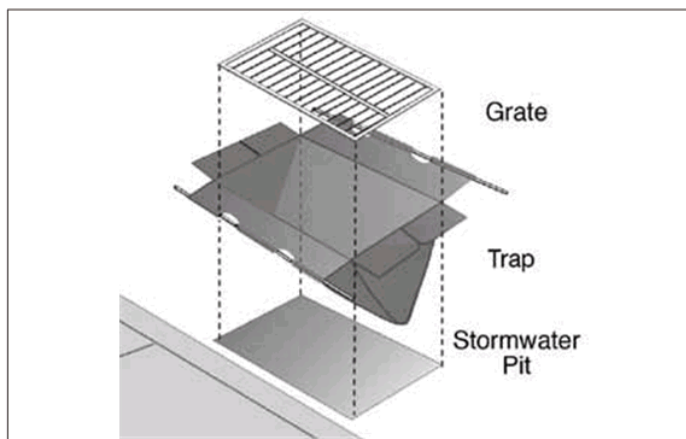


Figure 15C: Stormwater pit trap.

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Acknowledgement:

Figure 15A from Landcom 2004 "Soils & Construction Volume I Managing Urban Stormwater (4th edition)". Figure 15B after South East Queensland Healthy Waterways Partnership 2006 "Best Practice Guidelines for the Control of Stormwater Pollution from Building Sites". Figure 15C after California Regional Water Quality Board 1999 "Erosion & Sediment Control Field Manual". Text in this brochure has been obtained and modified from the "Do It Right On Site" brochure series, kindly provided by the Southern Sydney Regional Organisation of Councils.

Date of Issue: December 2008

Dust Control



What is it?

Minimise the amount of dust (soil, building materials and residues) generated by wind erosion on building and construction sites. Research shows that average dust emission rates of over 2.5 tonnes per hectare per month occur on sites which have no dust control measures in place. The control measures discussed can be used on any building or construction site where dust may be generated and where dust may cause on or off-site damage.

Why is it important?

Sediment generated from wind erosion on building and construction sites can be a major source of pollution to local waterways. Follow the practices discussed in this fact sheet and you will minimise wind erosion from your site, meet your legal requirements and help protect our waterways.

Fact Sheet 18

WHAT DO I NEED TO DO?

Before starting site works:

Good site planning can eliminate dust being a problem.

- 1) Assess the dust potential of your site. Dust generating activities include major soil disturbances or heavy construction activity, such as clearing, excavation, demolition, cutting concrete or excessive vehicle traffic.
- 2) Decide upon dust control measures. A number of methods can be used to control dust from a site. The developer or builder will have to determine which practices are suitable based on specific site and weather conditions.
- 3) Document dust control measures on your Soil and Water Management Plan (if required) (see Fact Sheet 3) and ensure everyone working on the site understands them.

Installing the control measures:

These control measures will help to reduce the amount of soil and building materials loose on the site and therefore the dust that can be generated.

- 1) Stage works and disturb only small areas of the site at a time.
- 2) Maintain as much vegetation as possible. Existing trees and shrubs act as wind breaks, slowing wind velocities and provide coverage to surface soils.
- 3) Install constructed wind barriers if there is high risk of dust generation. Wind fences divert the wind up and over the site. Ensure that it is semi-permeable otherwise down-wind turbulence can make erosion worse.
- 4) Dampen the site slightly with a light application of water during excavation or when dust is being raised (be careful to only moisten ground surface, do not wet it to the point of creating mud).
- 5) Apply mulch to recently disturbed areas. Mulch can reduce wind erosion by 80%.
- 6) Where vegetative cover and mulching cannot be used (i.e. on site roads and entrances) apply rocks and stones.
- 7) For large open areas deep ploughing (tillage) brings soil clods to the surface where they rest on top of the dust, preventing it from becoming airborne.
- 8) Install a wheel wash where vehicles and/or equipment exit the site. Alternatively, a stabilised site access can be used (see Fact Sheet 12).

- 9) Cover sand and soil stockpiles with fabric, plastic or vegetation.
- 10) Ensure that relevant equipment and machinery have dust suppressors fitted.

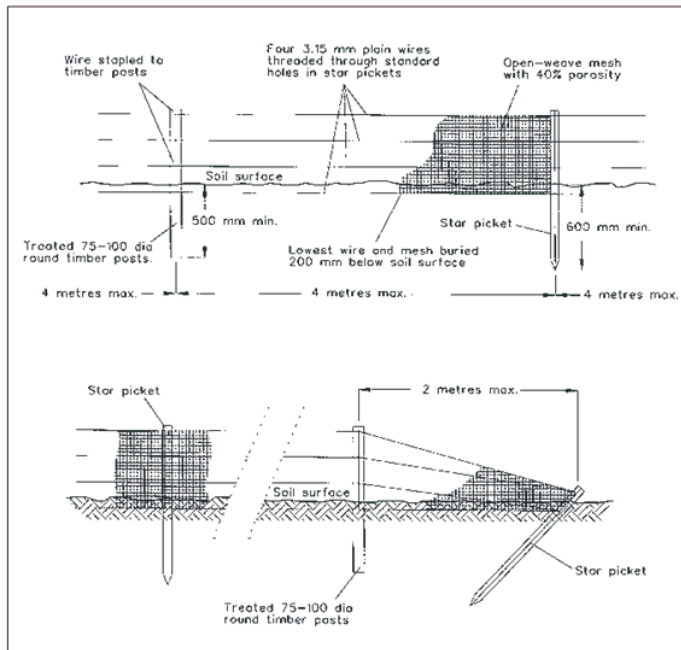


Figure 18A: Installation of a wind fence.

Maintaining the control measures:

Dust control measures involving the application of water require more monitoring than structural or vegetative controls to remain effective. If structural controls are used, they should be inspected for deterioration on a regular basis to ensure that they are still achieving their intended purpose.

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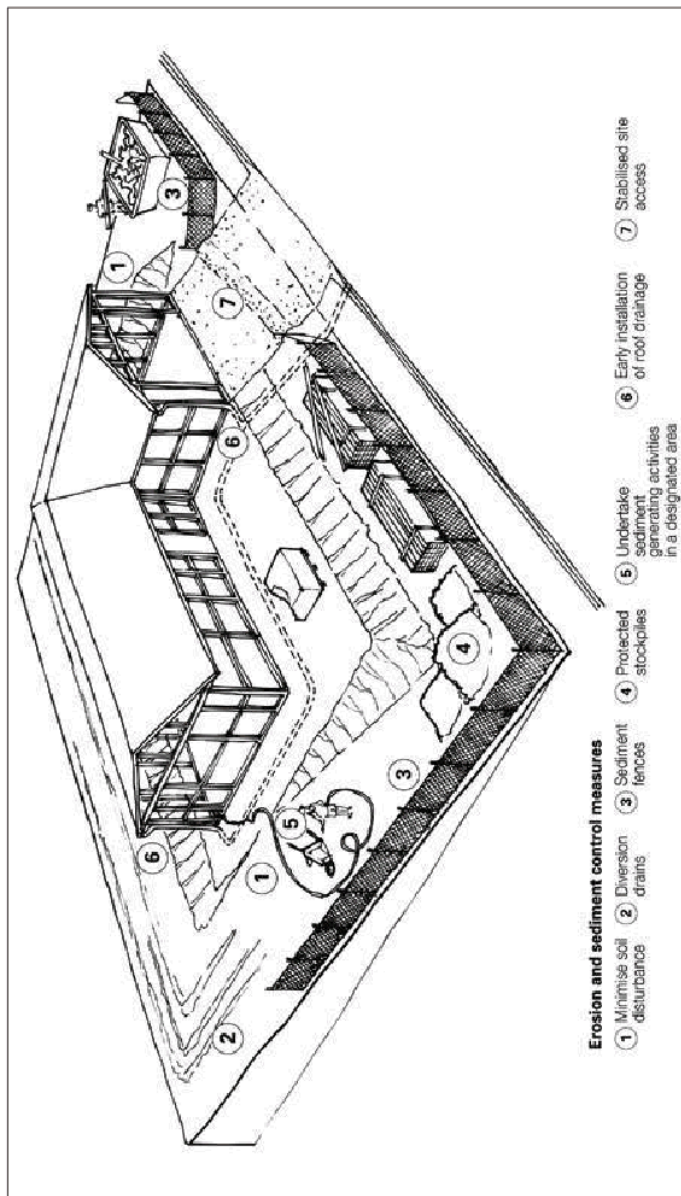


Figure 2A: Appropriate sediment and erosion control measures for single residential building lots.

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Acknowledgement:

Figure 2A was kindly provided by South East Queensland Healthy Waterways Partnership and Brisbane City Council. Text in this brochure has been obtained and modified from the "Do It Right On Site" brochure series, kindly provided by the Southern Sydney Regional Organisation of Councils.

Date of Issue: December 2008

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Soil and Water Management Plan - 321-323A and 325 Elizabeth
Street, North Hobart

**Pitt & Sherry
(Operations) Pty Ltd**
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Located nationally —

Melbourne
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Stormwater Management Plan

321–323A Elizabeth Street Car Park

Prepared for
Hobart City Council

Client representative
Glenn Doyle

Date
30 June 2022

Rev01



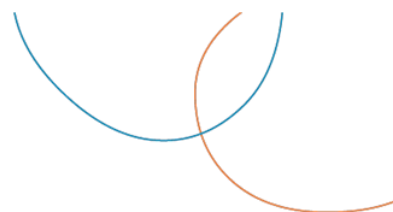


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Appendices

Appendix A — Stormwater Treatment Product Information

Prepared by — Hamish Peacock		Date — 30 June 2022
Reviewed by — Joshua Coates		Date — 30 June 2022
Authorised by — Richard Cassidy		Date — 30 June 2022

Revision History

Rev No.	Description	Prepared by	Reviewed by	Authorised by	Date
A	Stormwater Management Plan for client comment	OD / HP	JC	RC	02/03/2022
00	Final Issue	HP	RC	RC	25/03/2022
01	Updated To Address RFI's	HP	RC	RC	30/06/2022

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1. Background and design requirements

Hobart City Council (HCC) propose to formalise a car park at 321–323A Elizabeth Street, North Hobart. The site is currently separated from the adjacent Lefroy Street Car Park by Providence Rivulet. HCC intend to install a bridge to connect the two car parks, with an engineered retaining wall constructed along the eastern rivulet bank. Stormwater infrastructure is required to adequately manage and treat runoff from the site.

As part of the application process, the car park design is to demonstrate compliance with Code E7.7.1 *Stormwater Drainage and Disposal* of the Hobart City Council Interim Planning Scheme 2015. The site is zoned 'Inner Residential' (non-industrial) which requires a 20-year ARI (5% AEP) design capacity for the minor stormwater drainage system which is to be disposed of via gravity to public infrastructure. The sizing is required to accommodate a fully developed catchment.

As outlined in Code E7.7.1, Water Sensitive Urban Design (WSUD) measures are required for the site as per Clause A2 (b), in which new car parking is provided for more than 6 cars. Incorporation of WSUD must ensure that the stormwater quality targets outlined in Table E7.1 are met (see Table 1).

Table 1: Water quality pollution reduction targets

Table E7.1 Acceptable Stormwater Quality and Quantity Targets

80% reduction in the average annual load of total suspended solids (TSS) based on typical urban stormwater TSS concentrations.

45% reduction in the average annual load of total phosphorus (TP) based on typical urban stormwater TP concentrations.

45% reduction in the average annual load of total nitrogen (TN) based on typical urban stormwater TN concentrations.

Stormwater quantity requirements must always comply with requirements of the local authority including catchment-specific standards. All stormwater flow management estimates should be prepared according to methodologies described in *Australian Rainfall and Runoff* (Engineering Australia 2004) or through catchment modelling completed by a suitably qualified person.

This report will address the planning requirements for the 321-323A Elizabeth Street Carpark, 325 Elizabeth Street and proposed alterations to the stormwater infrastructure in the existing Lefroy Street carpark.

2. Site details

2.1 Existing site

The existing 321-323A Elizabeth Street site is a partially paved parking area situated behind the shop front at 323A Elizabeth Street. Providence Rivulet runs between the site and the adjacent existing Lefroy Street Carpark. Site surfaces are predominately asphalt / crushed rock. Site inspection indicates the crushed rock section to be reasonably well compacted in many areas by vehicles. The 321-323A Elizabeth Street site is approximately 1,100 m² in size with general surface grades of 4–5% falling in a north easterly direction. The existing sealed Lefroy Street Carpark encompasses a surface area of approximately 1160m² which conveys stormwater runoff to the southeast corner and discharges via an existing raingarden and pipe into the Rivulet. A portion of the proposed carpark is situated on 325 Elizabeth Street, the existing surface is fully asphalted and appears to discharge sheet surface flows directly over the property boundary and into the rivulet.

Some services including sewer and stormwater mains lie under the 321-323A parking area. Two stormwater pipes (900mm and 1050mm) discharge into a box culvert/bridge section and then into the Rivulet within the property boundary. An additional 225mm concrete stormwater main runs near and parallel to the northeast fence line of 321-323A Elizabeth Street and discharges into the Rivulet at the downstream end of the property. A sewer line also runs across the site (refer Figure 1).

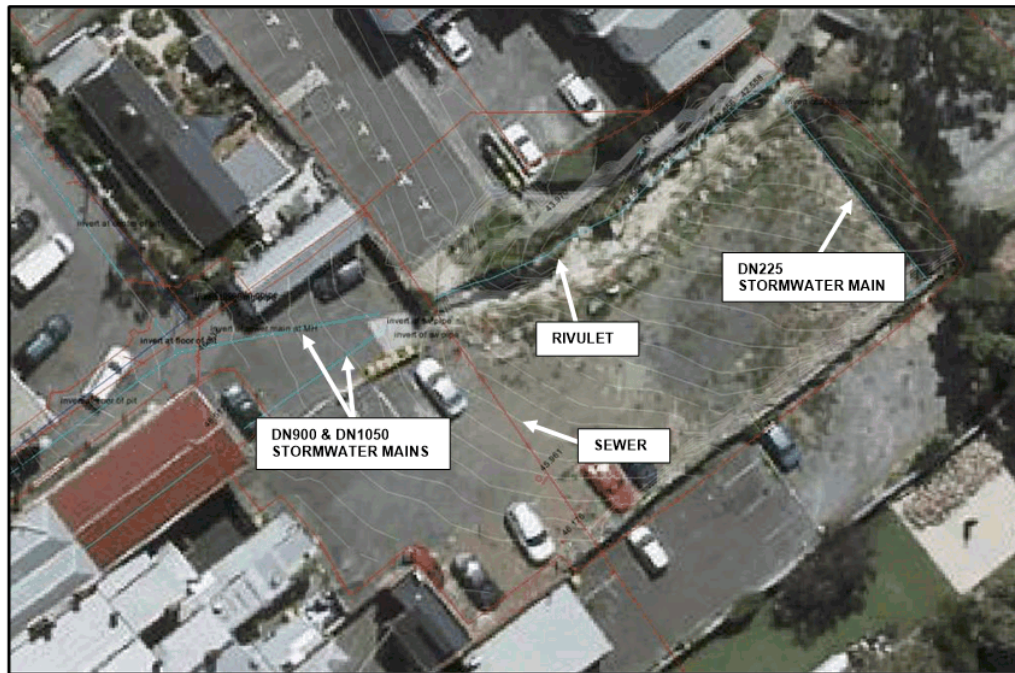


Figure 1: Existing site layout

2.2 Proposed development

The 321-323 Elizabeth Street site is proposed to be resurfaced and sealed to provide a more formal car park, acting as an extension to the adjacent Lefroy Street Car Park via a new bridge over Providence Rivulet (refer Figure 2). Most surfaces will be asphalted with remaining areas landscaped. The proposed stormwater network is shown in the submitted drawings (S-P.19.0421-00-CIV-DRG-201 & S-P.19.0421-00-CIV-DRG-202) and incorporates the following:

2.2.1 321-323A Elizabeth Street carpark

- Retainment of existing surface grades generally
- Inclusion of kerb and kerb & channel where appropriate
- Inclusion of kerb and channel drainage behind the new Rivulet retaining wall
- New raingarden to treat stormwater runoff, inclusive of overflow pit and new outlet pipe; and
- Existing stormwater discharge locations are to be maintained.

2.2.2 325 Elizabeth Street

- A new kerb will intercept the carpark flows; and
- A pit located on the property boundary will intercept the flows and discharge via a 150mm pipe penetrating the existing rivulet roof slab.

2.2.3 Existing Lefroy Street carpark

- Utilisation of existing kerb
- New proprietary water quality treatment products in the form of a Spel Stormsack in a LGAT Grated Deflector Pit and a Single 450mm Spelfilter unit placed in a DN1200 Manhole (or suitable equivalent treatment train); and
- New outfall pipe constructed at the location of existing outfall through the new proposed bridge abutment.

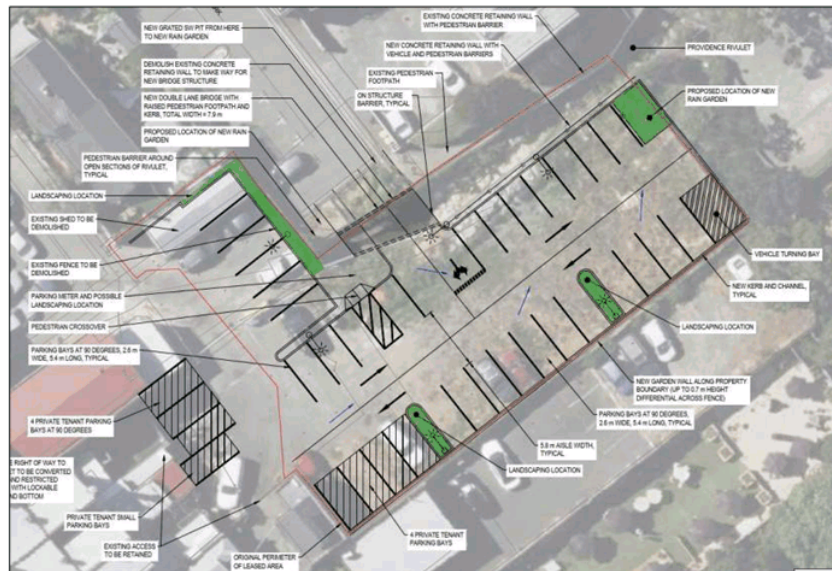


Figure 2: Indictive site layout

3. Stormwater quality and quantity assessment

3.1 Stormwater quality

Water quality modelling software MUSIC (Model for Urban Stormwater Improvement Conceptualisation) by eWater was used to assess the pollutant loads and discharge quality to demonstrate the effectiveness of the treatment measures to remove pollutants.

The following details the assessment undertaken, assumptions adopted in the formation of the model and recommended water quality improvement devices (WQIDs) to achieve best practice pollutant load reduction targets.

- Two land use nodes have been adopted to represent both carparks. Both nodes adopted the land use type 'sealed road'. Typical pollutant load generation from this surface type has been adopted
- Hobart rainfall series from 01/01/1993 to 31/12/1993 at 6-minute intervals has been adopted for the assessment. The 1993 dataset is a complete set of high-resolution rainfall which provides a representation of rainfall over a long period of time. The annual rainfall for 1993 in Hobart was 648mm which is just above mean rainfall for Hobart
- Default monthly areal evapotranspiration values for Hobart; and
- 95% impervious catchment, with effective catchment area of 0.109 hectares for the 321-323 Elizabeth Street site and 0.116 hectares for the existing Lefroy Street car Park.

A schematic of the MUSIC model is shown in Figure 3.



Figure 3: MUSIC model layout

Each car carpark has its own unique constraint which will impact what type of water quality management measure can be adopted. The management measures adopted are discussed below.

3.1.1 321-323A Elizabeth Street

As 321-323A Elizabeth Street is a new carpark, it is relatively easy to incorporate somewhat natural water quality measures. As the design of the carpark includes a blind aisle, there is opportunity to utilise the areas not appropriate for parking as a landscaped/water quality management area. A typical schematic of the proposed bioretention basin is shown in Figure 4.

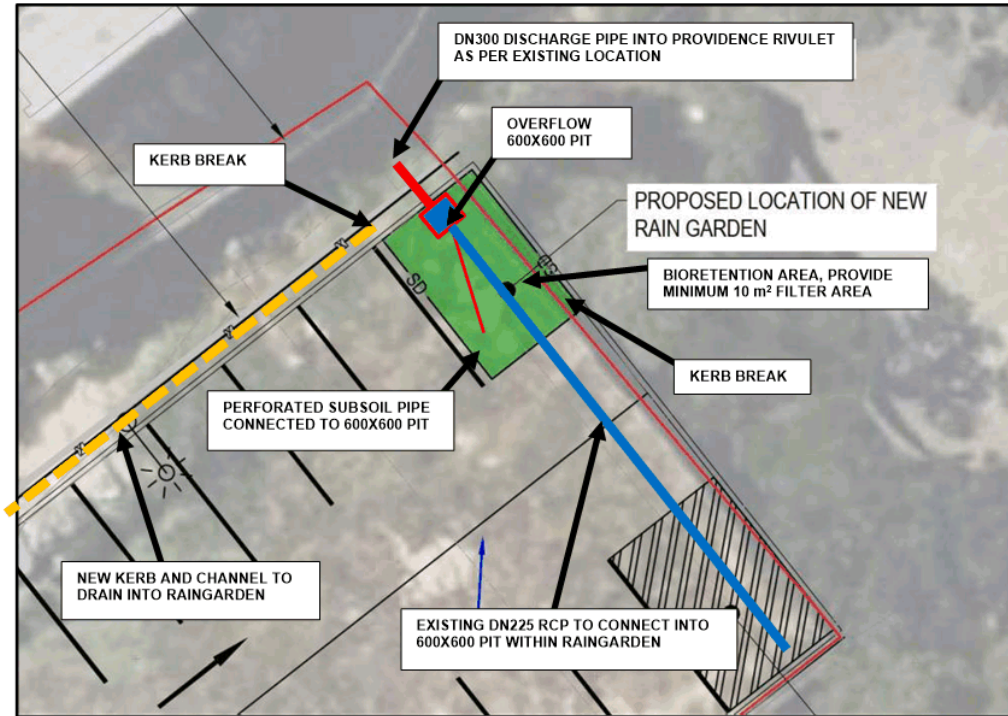
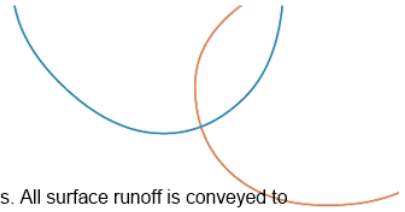


Figure 4: Indicative bioretention raingarden (See drainage plans)

To determine if a bioretention basin can effectively operate in this location, its performance has been analysed within the MUSIC model with the following parameters:

- Extended Detention Depth of 0.15 m
- Surface Area of 10 m²
- Filter Area of 10 m²
- Total Filter Depth of 0.55 m
- Saturated filter media hydraulic conductivity of 100 mm/hr
- No exfiltration and lined with impervious HDPE liner
- Effective nutrient removal plants (HCC approved species) used as vegetation
- Overflow Weir Width of 0.15 m representing TSD-SW15-v1 600x600 GP square pit (with additional weir plate); and
- Perforated subsoil pipe included.



The system allows for stormwater runoff from the car park to enter via two kerb breaks. All surface runoff is conveyed to the raingarden where it gradually percolates through the filter media, with plants assisting to remove pollutants from the water. Treated water is discharged through a subsoil pipe into the overflow pit. Overflow spills into the pit which sits 150 mm above the basin surface. Flow will be discharged from the pit to Providence Rivulet via a new DN300 RCP pipe.

3.1.2 325 Elizabeth Street

Alterations to the 325 Elizabeth street do not require Water Sensitive Urban Design as:

- New parking is provided for less than 6 cars
- No new impervious area is proposed; and
- There is no subdivision proposed.

3.1.3 Existing Lefroy Street carpark

The existing carpark encompasses an approximate surface area of 1160m² which is approximately 90-95% asphalt car park. The existing raingarden is to be removed to facilitate the new bridge over the rivulet. It is proposed to replace the raingarden with proprietary stormwater quality treatment products as it is not practical to reconstruct the raingarden within the existing carpark. The intent of the water quality design is to meet the stormwater quality targets as per *Table E.7.1. Acceptable Stormwater Quality and Quantity Targets*.

The following input assumptions were used:

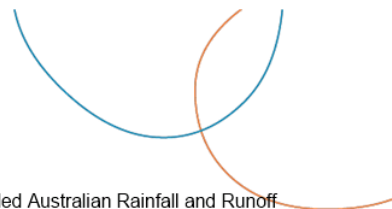
- Input rainfall and evaporation as per 321-323A Elizabeth Street
- A single 450mm high SPEL Filter (or suitable equivalent) can treat 1.47 L/s, a single unit is required to achieve the required pollutant load reduction target; and
- SPEL Stormsacks (or suitable equivalent) are proposed within a single stormwater pit. These devices primarily target gross pollutants and coarse sediment.

SPEL products have been analysed and proposed for this site, although alternate suitable products could be adopted if it can be demonstrated that they provide the same or improved pollutant load reduction.

Refer to APPENDIX A for detail on proprietary stormwater treatment devices.

3.2 Stormwater conveyance and detention

Stormwater detention is only necessary for the new car park as the existing carpark and 325 Elizabeth Street area are not proposed to have increase in impervious area. To achieve compliance with the Code *E7.7.1*, it is necessary to demonstrate that the minor stormwater drainage system can accommodate a storm with an ARI of 20 years (5% AEP) and stormwater runoff will be no greater than pre-existing runoff. Additionally, the major stormwater drainage system must be able to accommodate a storm with an ARI of 100 years (1% AEP).



The analysis was undertaken using hydraulic/hydrologic software DRAINS and included Australian Rainfall and Runoff 2019 (ARR19) recommended procedures:

- Initial Loss – Continuing Loss (IL-CL) hydrological model
- Initial and continuing loss value of 20mm and 2mm/hr respectively for the pervious landscaped areas
- Initial and continuing loss of 0mm and 0mm/hr respectively for the sealed asphalt surfaces
- Initial Loss and continuing loss of 5mm and 1mm/hr for the compacted crushed rock surfaces
- Rainfall IFD depths obtained from the Bureau of Meteorology for the 1% and 5% AEP events in the vicinity of the site
- Inclusion of storm temporal pattern variation; and
- Median pre-burst depths were adopted.

The DRAINS model was run for a range of storm durations and temporal patterns to ensure critical (peak) flow rates were observed for the 1% and 5% AEP events.

Additional assumptions include:

- The existing site catchment is predominately compacted gravel or asphalt surfaces. Surface roughness's of 0.015 and 0.025 was adopted for asphalt and gravel areas respectively. Time of concentration included the sheet flow travel time component across the parking area towards Providence Rivulet with a direct unimpeded entry into the rivulet; and
- The finished surface of the proposed car park is assumed to be completely impervious. Surface roughness's of 0.015 and 0.10 were adopted for impervious and pervious (grass/vegetation) landscape areas respectively. Time of concentration included the sheet flow travel time component across the car park and travel time component down the kerb and channel drain into the proposed raingarden.

4. Results and discussion

4.1 Stormwater quality

Results from the MUSIC model (see Table 2 and Table 3) show that inclusion of a bioretention raingarden with filter area of 10 m² in the new 321-323A carpark is effective in achieving the stormwater quality targets specified in Table E7.1 of Code E7.7.1. Similarly, the proposed proprietary treatment products in the existing carpark are adequate in achieving the required pollutant reductions (see Table 3).

Table 2: 321-323A Elizabeth Street MUSIC modelling results; treatment train effectiveness

	Sources	Residual Load	% Reduction
Flow (ML/yr)	0.419	0.401	4.5
Total Suspended Solids (kg/yr)	141	11.7	91.7
Total Phosphorus (kg/yr)	0.25	0.068	72.7
Total Nitrogen (kg/yr)	0.996	0.443	55.5
Gross Pollutants (kg/yr)	16	0	100

Table 3: Existing Lefroy Street Carpark MUSIC modelling results; treatment train effectiveness

	Sources	Residual Load	% Reduction
Flow (ML/yr)	0.443	0.443	0
Total Suspended Solids (kg/yr)	163	20.5	87.4
Total Phosphorus (kg/yr)	0.261	0.0932	64.3
Total Nitrogen (kg/yr)	1.07	0.373	65.1
Gross Pollutants (kg/yr)	17.1	0	100

4.2 Stormwater conveyance and detention

4.2.1 Existing Lefroy Street carpark

Results indicate a peak 5% AEP flow of 27l/s which is directed by kerb and channel to the Rivulet. The following features are adequate to capture and discharge this flow into the rivulet:

- LGAT Grated Deflector (TSD-SW10-v1), see TSD-RF02-v1 for pit capture curves
- 300mm RCP pipe from LGAT Grated Deflector into DN1200 Manhole
- Manhole incorporates a weir box for the Spelfilter system to work. The incoming 300mm pipe invert will be elevated to approximately this weir level; and
- The outlet pipe will be 300mm RCP discharging into the rivulet. The invert level of the pipe will be approximately 450m below the weir box spill level.

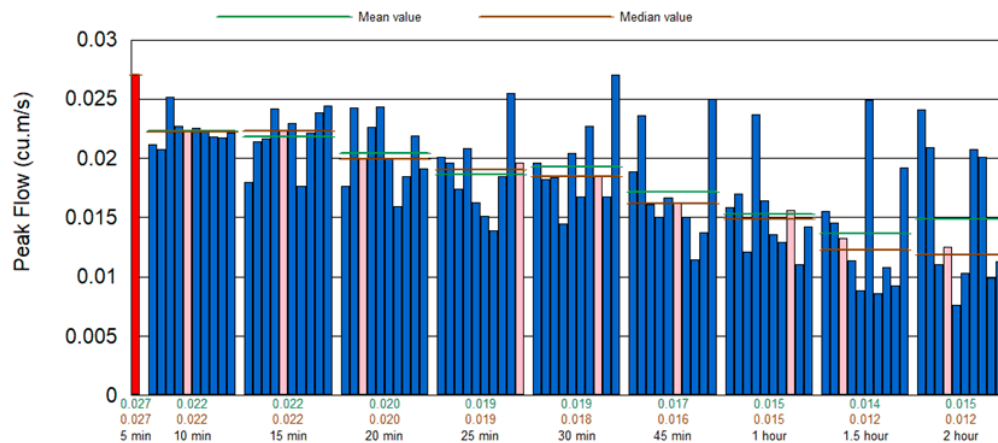


Figure 5: Existing Lefroy car park flows 5% AEP

4.2.2 321-323A Elizabeth Street

Results from the DRAINS model indicate an existing peak flow of 23 L/s and post-developed peak flow of 26 L/s (prior to raingarden) for the site subject to the 5% AEP storm event (see Figure 6 and Figure 7). A minor increase in the peak flow (3 L/s) is observed. The peak flow in the outfall pipe has been estimated at 35 L/s and incorporates flows from the neighbouring property which is shown in HCC stormwater assets¹ as the only connection. The 5% AEP hydraulic grade line for the 225mm existing and 300mm new main is shown in Figure 9 and incorporates a high tailwater which assumes significant flow within the rivulet.

Stormwater detention will be provided in the form of the raingarden storage area in the area above the pit overflow level. Note the bio-retention area below the pit surface level is not effective as detention in a significant storm. A 150mm wide by 200mm high weir on the overflow pit wall is sufficient in attenuating the peak flow to 23 L/s (Figure 8). The weir can be formed by raising the sides of the grated pit to form a rectangular contracted weir. The sides could be raised using galvanised plate or similar. This correlates to a minimum depth of 350 mm (150 mm bioretention ponding and 200 mm above overflow pit grate). The walls and kerbing around the raingarden will be located appropriately to achieve the required volumes and ensure that any overflow from the raingarden is directly into the rivulet. Any overflow emanating from the site (minimum 5% AEP capacity) will be directly over the new retaining wall into the rivulet.

Results show that the proposed stormwater drainage system has sufficient capacity to accommodate the 5% AEP storm inclusive of the fully developed catchment serviced by the existing 225mm pipe (see Figure 9).

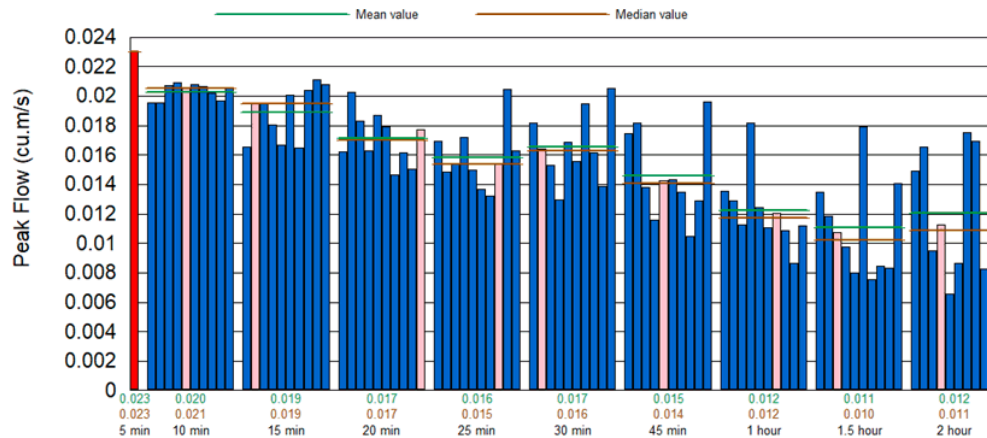


Figure 6: Existing 5% AEP peak flow

¹ <https://hobartcc.maps.arcgis.com/apps/OnePane/basicviewer/index.html?appid=e338c4c59aa448608f0b11db6f3b7285>

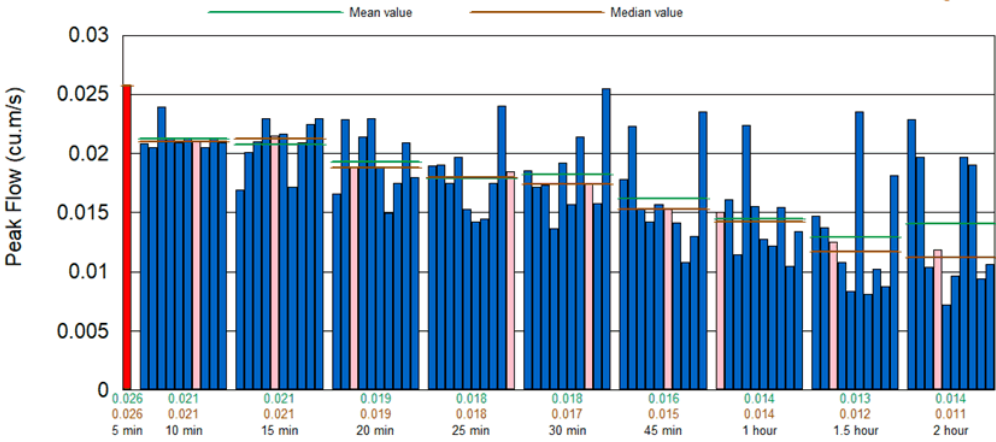


Figure 7: Proposed 5% AEP peak flow into raingarden

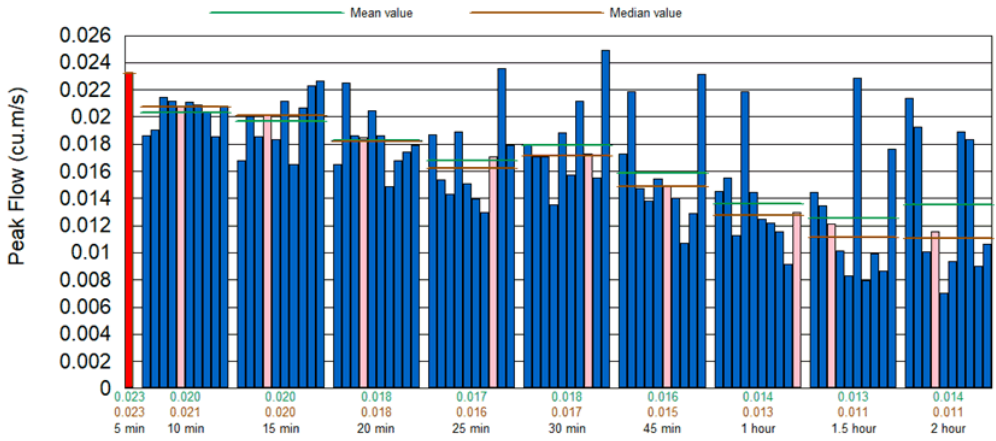


Figure 8: Proposed 5% AEP peak flow exiting raingarden (discharge point)

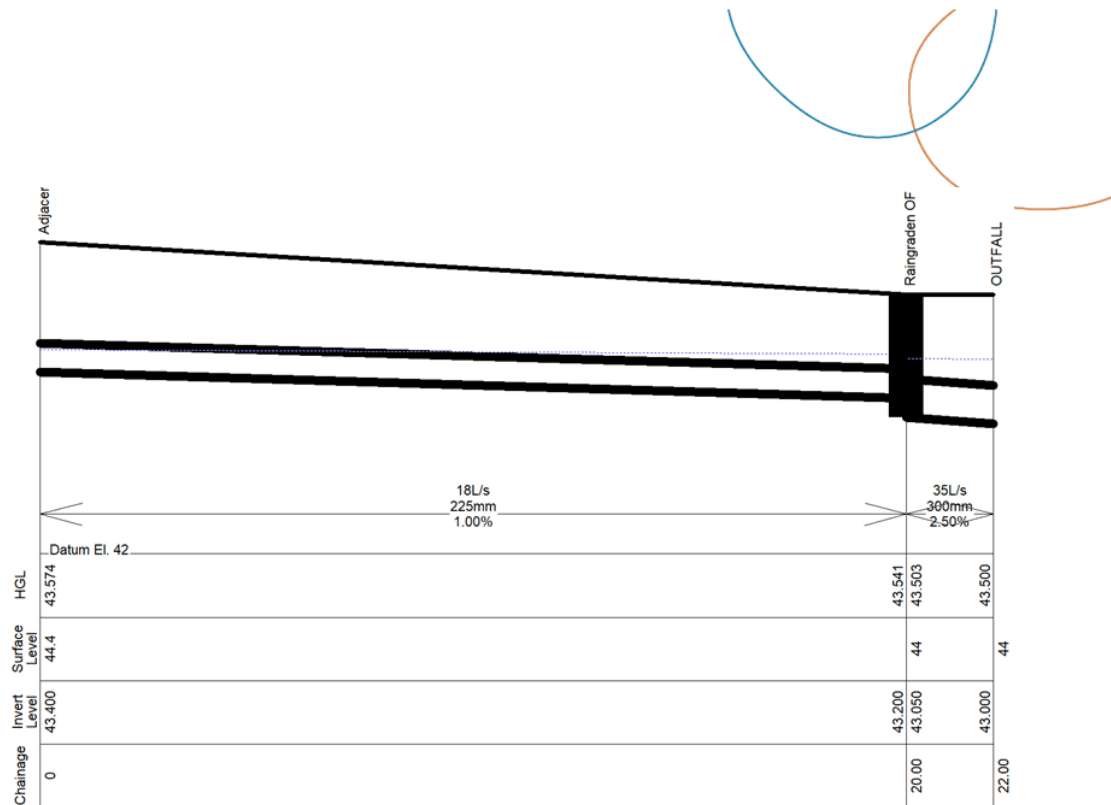


Figure 9: Hydraulic grade line (with adverse rivulet tailwater)

Results show that the proposed stormwater drainage system also has sufficient capacity to accommodate the 1% AEP storm of 35 l/s. Any overflow (major system drainage path) will fall directly into the rivulet by means of the kerb on the property boundary being raised higher than the top of the retaining wall. The proposed 300mm outfall from the stormwater main similarly has hydraulic capacity for a 1% AEP storm (47 l/s).

4.3 Providence Rivulet channel capacity

The capacity of the proposed Providence Rivulet Channel has been assessed to confirm capacity is available for the 5% AEP event when the land serviced by the channel is fully developed. For the purpose of this assessment, it has been assumed that all catchment flows can arrive at the channel, however the inundation assessment suggest this is not likely to occur with the current upstream system. The existing channel from the upstream outfall to the downstream end of the proposed bridge is shown in Figure 10 and is seen to have a concrete base lining. Beyond this location the base of the rivulet is bedrock as seen in Figure 11. The following assumptions were made:

- The catchment is assumed to be fully developed within the current zoning
- Mannings 'n' of 0.013 for the concrete lined channel section
- Mannings 'n' of 0.035 for the undulating bedrock section; and
- It has been assumed for the purpose of the assessment that the full catchment flows can arrive in the channel. However, as the supporting Inundation assessment describes (*T-P. 19.0421-DRN-REP-008-Rev01*), it is not likely this quantity of water can arrive in the channel.



Figure 10: Providence Rivulet channel through site (looking upstream)



Figure 11: Providence rivulet channel through site (looking upstream)

A peak discharge of $9.6\text{m}^3/\text{s}$ has been estimated for the fully developed catchment in a 5% AEP. The peak flows are presented in

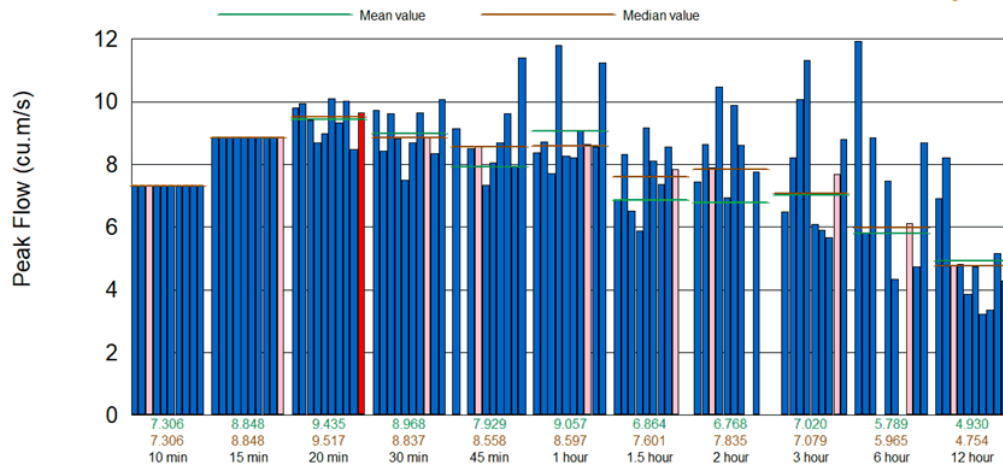


Figure 12.

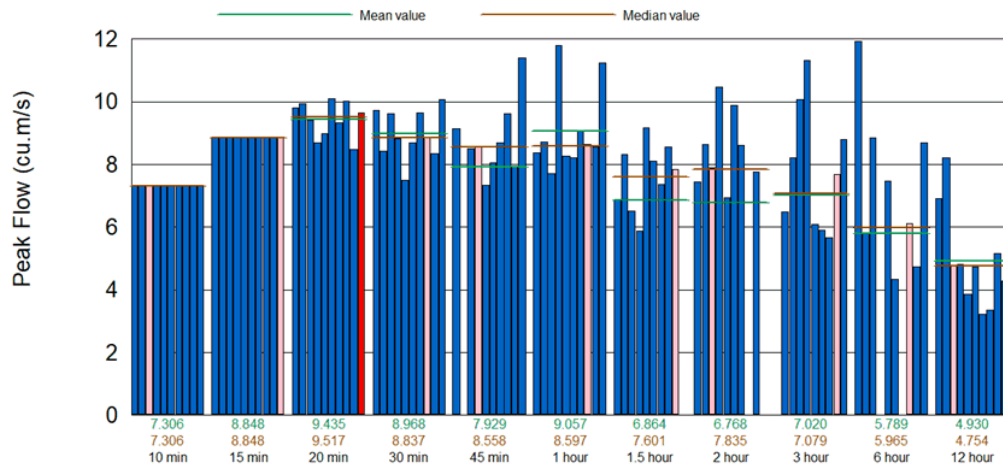


Figure 12: Providence Rivulet 5% AEP fully developed peak flows

A DRAINS model has been created to confirm the channel has capacity for the 5% AEP fully developed catchment scenario. The DRAINS model schematic is presented in Figure 14 and cross section locations shown in Figure 13. Results indicate that the proposed channel can carry the 5% AEP fully developed flow of 9.6m³/s and the cross sections are shown in Figure 15.



Figure 13: Cross section locations

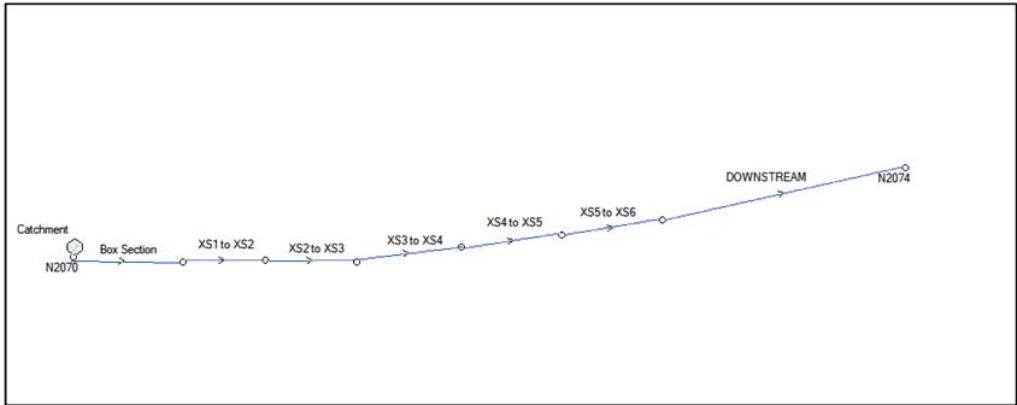
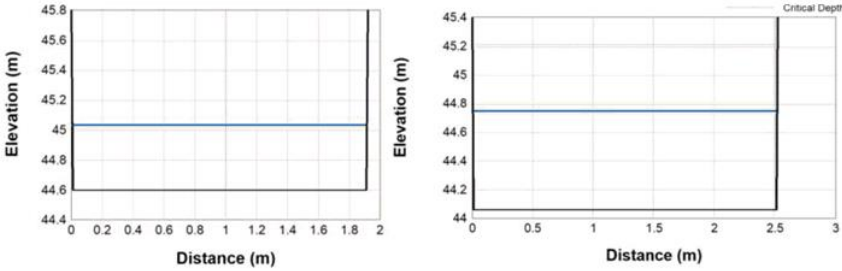


Figure 14: DRAINS channel schematic



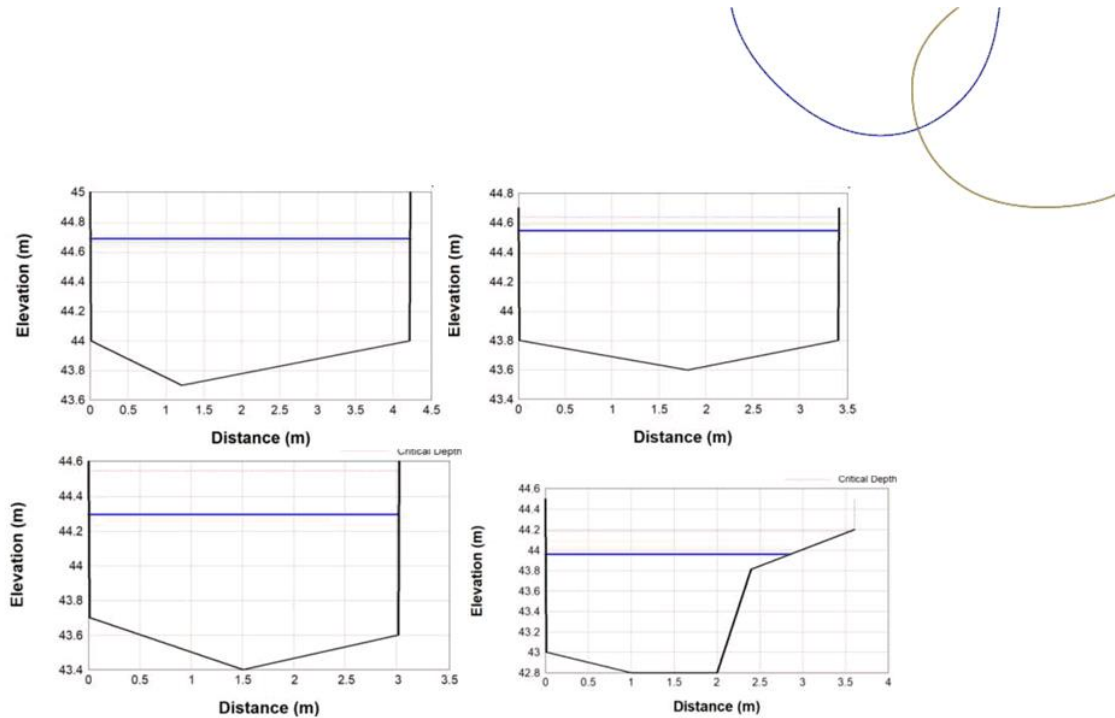


Figure 15: Peak water level 5% AEP fully developed catchment (XS1 to XS6)

5. Stormwater discharge points

5.1 Existing Lefroy Street carpark

The existing discharge appears to be via multiple points include several subsoil outlets and a larger RCP pipe outlet (see Figure 16). The outfall area is a concrete slab.

This will be consolidated into a single 300mm RCP outlet through the new bridge abutment. The proposed outfall will be flush with the bridge abutment face to provide a non-intrusive finish.



Figure 16: Existing Lefroy Street carpark discharge



5.2 323 Elizabeth Street outfall

The existing 225mm outfall is shown below in Figure 17. As can be seen the outfall is directly onto bedrock and the bank has become heavily weeded.

A new 300mm RCP outfall is proposed to discharge flush to the proposed retaining wall and discharge onto bedrock. This will provide a non-intrusive finish.



Figure 17: 323 Elizabeth Street outfall pipe

5.3 325 Elizabeth Street outfall

Currently stormwater sheets off the 325 Elizabeth Street property onto the adjacent property before falling into the rivulet.

With the inclusion of a new kerb it is proposed to pick up stormwater in a pit on the boundary and discharge via a 150mm pipe directly through the wall or roof of the rivulet tunnel on the property boundary.



Figure 18: 325 Elizabeth Street outfall location

6. Response to planning criteria

A response to definition is provided for each criterion below.

E7.7.1 Stormwater Drainage and Disposal

Objective: To ensure that stormwater quality and quantity is managed appropriately.

Acceptable Solutions	Performance Criteria
A1 <i>Stormwater from new impervious surfaces must be disposed of by gravity to public stormwater infrastructure.</i>	P1 <i>Stormwater from new impervious surfaces must be managed by any of the following:</i> <ol style="list-style-type: none"> <i>Disposed of on-site with soakage devices having regard to the suitability of the site, the system design and water sensitive urban design principles</i> <i>Collected for re-use on the site;</i> <i>Disposed of to public stormwater infrastructure via a pump system which is designed, maintained and managed to minimise the risk of failure to the satisfaction of the Council.</i>

Assessment

Acceptable solution A1 is met by conveying site stormwater runoff from each title via gravity to the two existing discharge points and 1 new discharge point (325 Elizabeth Street) in Providence Rivulet.

A2

A stormwater system for a new development must incorporate water sensitive urban design principles for the treatment and disposal of stormwater if any of the following apply:

- a) *the size of new impervious area is more than 600 m²*
- b) *new car parking is provided for more than 6 cars;*
- c) *a subdivision is for more than 5 lots.*

P2

A stormwater system for a new development must incorporate a stormwater drainage system of a size and design sufficient to achieve the stormwater quality and quantity targets in accordance with the State Stormwater Strategy 2010, as detailed in Table E7.1 unless it is not feasible to do so.

Assessment

The acceptable solution is achieved for the 325 Elizabeth Street and technically the existing carpark, however as the existing WSUD raingarden in the Lefroy Street carpark is being removed a suitable replacement is proposed to be provided that meets the water quality targets. The 321-323A Elizabeth Street does not achieve the acceptable solution and the performance criteria is required. The proposed stormwater treatment infrastructure will ensure best practice WSUD is incorporated, and the targets specified in Table E7.1 are achieved. Refer to Section 3 and Section 4.

A3

A minor stormwater drainage system must be designed to comply with all of the following:

- a) *be able to accommodate a storm with an ARI of 20 years in the case of non-industrial zoned land and an ARI of 50 years in the case of industrial zoned land, when the land serviced by the system is fully developed;*
- b) *stormwater runoff will be no greater than pre-existing runoff or any increase can be accommodated within existing or upgraded public stormwater infrastructure.*

P3

No Performance Criteria.

Assessment

For 321-323A Elizabeth Street acceptable solution A3 (a) is met by providing suitably sized stormwater infrastructure to accommodate the 20-year ARI storm (5% AEP) and direct site runoff to a 10 m² bioretention raingarden on-site. Acceptable solution A3 (b) is met by providing detention storage in the raingarden above the pit spill level via a small contracted weir formed around the overflow pit.

For the existing car park, no alterations to the existing surface are proposed and no stormwater detention is necessary.

Similarly, the 325 Elizabeth site will see no increase in impervious area and as such no detention is required.

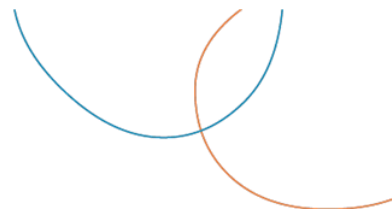
The proposed Providence Rivulet channel is shown to be able to convey the 5% AEP flow for an assumed fully developed catchment (See Section 4.3).

A4

A major stormwater drainage system must be designed to accommodate a storm with an ARI of 100 years.

P4

No Performance Criteria.



Assessment

For 321-323A Elizabeth Street the major system has been designed to direct flows to the raingarden. In an event that exceeds the capacity of the raingarden, overflow will spill directly over the retaining wall into the Providence Rivulet. This will occur by means of the kerb on the boundary being elevated above the top of the retaining wall where the raingarden is located. This is a preferred major system flow path as opposed to flows through private property. The major system for the existing car park will have any overflow (flow above 5% AEP from the grated deflector pit) directed across the bridge and down towards the raingarden where it will overflow into the rivulet. The major system overflow from 325 Elizabeth Street will continue along the carpark kerb line into the 321-323 Elizabeth Street Property. The Inundation Report (T-P.19.0421-DRN-REP-008-REV01) describes the major overland flow paths emanating from above the site.

7. Stormwater treatment maintenance and lifecycle

7.1 321-323A Elizabeth Street raingarden

During construction, raingarden filter materials should preferably not be placed until construction activity is finalised to prevent concentration of construction silts and fine sediments. Alternately divert surface water elsewhere until works are finalised.

Maintenance of the raingarden and stormwater infrastructure at 321-323A should be incorporated into HCC's general maintenance plan for similar assets. This would generally include:

- Raingarden should be inspected 3-months or following first heavy rainfall event post construction to understand typical pollutant loads occurring
- The maintenance plan can be updated based on these findings
- Raingarden inspection could be undertaken with regular site landscape maintenance activity, gross pollutants such as visible litter should be removed at these times
- The raingarden will require periodic maintenance to:
 - Remove gross pollutants and coarse sediment on a 6-12 monthly basis
 - Removal and replacement of the top 30-50mm of sandy loam periodically to remove fine silts that prevent / limit infiltration. Where the basin is inspected and seen to not drain freely (fully holding water for more than 6-hours nominally) this remedial work is recommended. This work should aim to disturb established vegetation as little as possible; and
- The location of the raingarden in the far corner of the site should allow for / enable a safe working environment to be achieved during any maintenance works.

7.2 Lefroy carpark proprietary product maintenance

Periodic maintenance of the proposed Spel Stormsack and Spelfilter are based on the anticipated pollutant loads below in Table 4 and Table 5. It has been assumed that gross pollutants have a density of 260kg/m³ and Suspended Solids 1800kg/m³. Based on this information the following maintenance periods are proposed:

Spel Stormsack

- Assumed pollutant volume available 450x900x400mm basket half full = 0.081m³
- Recommended Inspection frequency – 3-months after installation and 6-monthly for cleanout
- Clean out frequency – 6 monthly; and

- Clean Method – As per HCC maintenance of many similar products.

Spelfilter 450mm

- DN1200 Manhole with 100mm sediment build up trigger – 0.11m³
- Recommended Inspection Frequency – 3-months after installation and annually thereafter unless sediment loads are high than expected
- Clean out frequency – 4-yearly (or more regularly if sediment loads are higher than expected). A more frequent clean out frequency could be adopted if preferred to minimise the risk of sediment resuspension.
- Cleaning Method – Vacuum Truck
- Internal cartridge replacement – 7 years; and
- If Stormsack is full, Spelfilter Manhole will act as secondary gross pollutant capture.

Table 4: Spel litter trap annual loads

	Sources	Residual Load	% Reduction
Flow (ML/yr)	0.443	0.443	0
Total Suspended Solids (kg/yr)	156	61.0	61.0
Total Phosphorus (kg/yr)	0.261	0.188	28.0
Total Nitrogen (kg/yr)	1.06	0.582	45.0
Gross Pollutants (kg/yr)	17.1	0	100

Table 5: Spelfilter annual loads

	Sources	Residual Load	% Reduction
Flow (ML/yr)	0.443	0.443	0
Total Suspended Solids (kg/yr)	61.0	19.3	68.3
Total Phosphorus (kg/yr)	0.188	0.092	50.8
Total Nitrogen (kg/yr)	0.582	0.369	36.6
Gross Pollutants (kg/yr)	17.1	0	100



8. Summary and recommendations

A Stormwater Management Plan has been prepared for the proposed car park at 321–323A Elizabeth Street and alterations to the existing Lefroy Street Carpark and 325 Elizabeth street in North Hobart. The stormwater drainage and disposal standards outlined in the Hobart City Council Interim Planning Scheme 2015 have been addressed. Stormwater conveyance has been analysed using DRAINS and stormwater quality has been analysed using MUSIC. The assessment and findings of the report can be summarised as follows:

Existing Lefroy Street Carpark:

- A Type 4 LGAT Grated Deflector Pit with 300mm outlet pipe are adequate to convey the required 5% AEP storm flows; and
- A Spel Stormsack in combination with Spelfilter are adequate to meet the stormwater quality requirements.

321-323A Elizabeth Street Carpark:

- A LGAT grated pit with 300mm outfall pipe is adequate to convey the surface flows from the site and the existing adjacent property connections through the existing 225mm stormwater main
- A raingarden with filter area of 10 m² is effective in achieving the water quality pollution reduction targets outlined in Table E7.1 of the Scheme under the assumptions made
- Stormwater detention requirements can be met by utilising the storage available above the top of the grated pit in the raingarden as a contracted weir
- Excess major system overland flows (greater than 5% AEP) emanating from the sites and externally are intended to be directed straight into the rivulet by appropriately setting retaining wall and kerb heights; and
- The proposed channel will be adequate to convey the 5% AEP flows when the land serviced by the catchment is fully developed.

325 Elizabeth Street:

- A new pit will be provide on the new kerb with a 150mm discharge outlet pipe through the rivulet roof slab or wall.



Stormwater Treatment Product Information

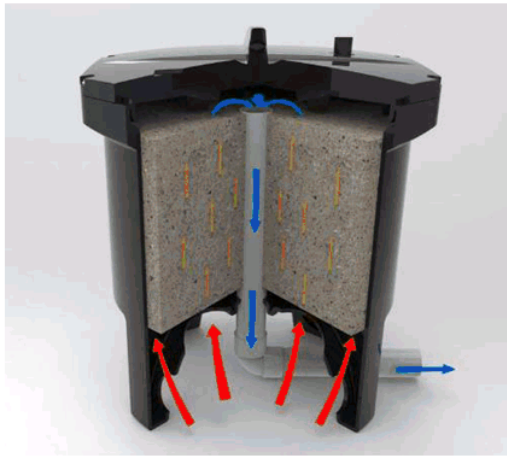
Appendix A

pitt&sherry

SPELFilter®

Cartridge filter for tertiary stormwater treatment





APPLICATIONS

- Car Parks and Shopping Centres
- Council Depots
- Industrial Estates
- Heavy Vehicle Maintenance
- Airport Aprons & Tarmacs
- Transport Depots & Loading Bays
- Tunnels
- Highways & Transport Corridors
- Recycling Yards

SPELFILTER

SPELFilter is a cartridge filter system that incorporates an upflow treatment process that maximises surface treatment area. Flow through the filter cartridges utilises a self-regulating siphon which results in a low maintenance and high performance stormwater treatment. The automatic backwash at the end of each storm event further lengthens the lifespan of the filter.

Hydraulic pressure forces water through the filter media — causing a constant velocity throughout the filter area realising a consistent media contact time and therefore treatment.

Upon completion of a treatment cycle, the filter backwashes and effectively dislodges particulates from the filtration layers. This re-establishes filter media porosity. The dislodged particles then accumulate away from the filter media allowing easy removal during maintenance.

FEATURES

The media cartridge provides a significantly greater surface contact area to footprint ratio than other filters. With a flow rate of 3L/s per cartridge and underground installation, the SPELFilter provides excellent removal efficiency whilst maintaining site surface yield.

- No moving parts, generating a true siphon effect
- 91% TSS, 75% TP and 58% TN removal
- Small footprint
- Inorganic filter media (doesn't leach nutrients)
- Can be deployed in various drainage structures such as manholes & vaults
- Contains no moving parts





HOW IT WORKS

The SPELFilter has an upflow treatment process, that maximises surface area. The benefit is excellent pollutant removal in a small footprint.

Hydraulic pressure forces water through the filter media, discharges through the centre tube and out through the outlet collection manifold.

Upon completion of a treatment cycle, each cartridge backwashes and effectively dislodges particulates from the filtration layers. This reestablishes filter media porosity. The dislodged particles accumulate on the vault floor for easy removal during maintenance. SPELFilter's patented design has no moving parts and generates a true siphon effect.

A SPEL Stormceptor Class 1 upstream of the SPELFilter in the treatment train greatly increases the life cycle interval of the SPELFilter as the SPEL Stormceptor Class1 removes the larger gross pollutants, coarse sediments, total suspended solids and hydrocarbons, enabling the SPELFilter to target fine particulate matter and nutrients.



BENEFITS

PROVEN SAND FILTER PERFORMANCE

The uniform size silica-sand filter media provides for higher removal efficiencies than coarser types of media. SPELFilter media is inorganic – it doesn't leach nitrogen and other nutrients.

Each SPELFilter automatically backflushes under gravity. The backflush clears most sediment particles from out of the the media and back into the vault floor, which allows the hydraulic conductivity from degrading throughout its service life. No moving parts are involved, which increases reliability. The SPELFilter cartridge design life is in excess of 5 years.



FLEXIBILITY

Due to the greater surface area and high flow capacity, combined with the modular cartridge design, the SPELFilter systems can be deployed in a variety of structures including manholes, precast vaults, or cast-in-place structures.

Each system is optimised to suit your specific site and local authority requirements by qualified and experienced professionals.



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DETAILS ONLINE

SPELFilter[®]

Cartridge filter for tertiary stormwater treatment

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SPEL Stormsack®

At Source Gross Pollutant Trap (GPT)

OVERVIEW

The SPEL StormSack® is specifically designed for the capture of gross pollutants: sediment, litter, and oil and grease. Ideally suited for municipal storm drain retrofits, the SPEL StormSack's unique design allows maintenance to be performed using conventional vacuum suction equipment.

BENEFITS

- Quick and easy installation.
- Cost efficient gross pollutant capture.
- Adjusts to custom pit sizes.
- Can be modelled in MUSIC in conjunction with bio-retention.
- Adjusts to custom pit sizes.

APPLICATIONS

Council Storm Drain Retrofits
Commercial/Retail/Residential
Litter Prone Urban Areas
Scrap Metal/Solid Waste/Oil Storage/Etc
Part of Treatment Train
Construction Sediment
<200 micron capture

www.spel.com.au



SPEL Stormsack®

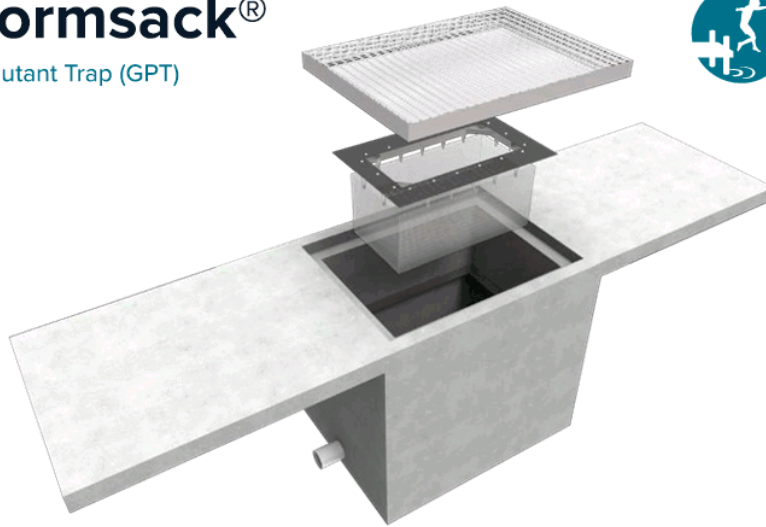
At Source Gross Pollutant Trap (GPT)



Sizes

Dimensions (mm)*
450x450
600x600
600x900
900x900

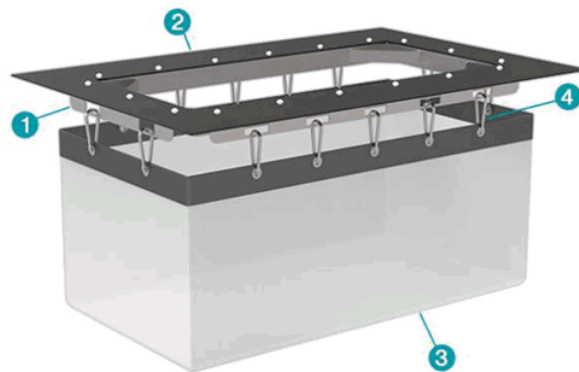
Custom sizes (i.e. 1200x900mm) can be manufactured on short lead times.



Application	Regulatory Issue	Target Pollutants
Council Storm Drain Retrofits	At-source litter capture	Sediment, Litter, O&G
Commercial/Retail/Residential	Stormwater Compliance	Sediment, Litter, O&G
Litter Prone Urban Areas	Cost effective litter control	Litter ≥ 5 mm
Scrap Metal/Solid Waste/ Oil Storage/Etc	Industrial Multi-Sector General Permit	Gross Pollutants, O&G
Part of Treatment Train	Council Stormwater Quality Improvement Targets	Sediment, Litter, O&G
Construction Sediment/Erosion	Sediment Control Plan	Sediment/Erosion Control

Features

- Ultra-Durable Aluminium Frame
 - Custom pit arrangements upon request
- Black Poly Surround riveted to Frame
 - Can be cut to suit on site
- Reinforced Stormsack Bag
 - Bag has sewed eyelets
 - Square bottom design for even distribution
- Karabiners attach Bag to Frame for easy service & replacement



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Stormwater Management Plan 321–323A Elizabeth Street
Car Park

**Pitt & Sherry
(Operations) Pty Ltd**
ABN 67 140 184 309

Phone 1300 748 874
info@pittsh.com.au
pittsh.com.au

Located nationally —
Melbourne
Sydney
Brisbane
Hobart
Launceston
Newcastle
Devonport



Planning: #255772

Property

325 ELIZABETH STREET NORTH HOBART TAS 7000



People

Applicant *	Hobart City Council, by their Agent IreneInc Planning & Urban Design C/O 49 Tasma Street North Hobart Tas 7009 62349281 michela@ireneinc.com.au
Owner *	Hobart City Council GPO box 503 HOBART TAS 7000 03 6238 2711 coh@hobartcity.com.au
Owner *	Triantafyllou & Theodora Papatriantafyllou 57 TOORAK AVENUE MOUNT STUART TAS 7000 62349281 michela@ireneinc.com.au
Owner *	Filis and Theodora Papatriantafyllou 57 TOORAK AVENUE MOUNT STUART TAS 7000 62349281 michela@ireneinc.com.au
Entered By	MICHELA FORTINI 49 TASMA STREET NORTH HOBART TAS 7000 62349281 michela@ireneinc.com.au

Use

Other

Details

Have you obtained pre application advice?

☒ No

If YES please provide the pre application advice number eg PAE-17-xx

Are you applying for permitted visitor accommodation as defined by the State Government Visitor Accommodation Standards? Click on help information button for definition. If you are not the owner of the property you MUST include signed confirmation from the owner that they are aware of this application. *

☐ No

Is the application for SIGNAGE ONLY? If yes, please enter \$0 in the cost of development, and you must enter the number of signs under Other Details below. *

☐ No

If this application is related to an enforcement action please enter Enforcement Number

Details

What is the current approved use of the land / building(s)? *

Please provide a full description of the proposed use or development (i.e. demolition and new dwelling, swimming pool and garage) *

Estimated cost of development *

Existing floor area (m2)

Proposed floor area (m2)

Site area (m2)

Carparking on Site

Total parking spaces

Existing parking spaces

N/A

☒ Other (no selection chosen)

Other Details

Does the application include signage? *

☐ No

How many signs, please enter 0 if there are none involved in this application? *

Tasmania Heritage Register

Is this property on the Tasmanian Heritage Register?

Documents

Required Documents

Title (Folio text and Plan and combined titles.pdf
Schedule of Easements) *

Plans (proposed, existing) * B-P.19.0421-00-STR-DRG-502-Rev0_Rev0 - plans bridge.pdf

Plans (proposed, existing) * B-P.19.0421-00-STR-DRG-503-Rev0_Rev0 - plans bridge.pdf

Plans (proposed, existing) *	HB19500_19_TransmittalNotice.pdf
Plans (proposed, existing) *	S-P.19.0421-00-CIV-DRG-001-Rev0_Rev0 -cover sheet.pdf
Plans (proposed, existing) *	S-P.19.0421-00-CIV-DRG-011-Rev0_Rev0 - ky plan.pdf
Plans (proposed, existing) *	S-P.19.0421-00-CIV-DRG-111-Rev0_Rev0 - lefroy existing conditions.pdf
Plans (proposed, existing) *	S-P.19.0421-00-CIV-DRG-131-Rev0_Rev0 - lefroy proposed works.pdf
Plans (proposed, existing) *	S-P.19.0421-00-CIV-DRG-121-Rev0_Rev0 - elizabeth prposed works.pdf
Plans (proposed, existing) *	S-P.19.0421-00-CIV-DRG-131-Rev0_Rev0 - lefroy proposed works.pdf
Plans (proposed, existing) *	S-P.19.0421-00-CIV-DRG-201-Rev0_Rev0 - elizabeth drainage and services plan.pdf
Plans (proposed, existing) *	S-P.19.0421-00-CIV-DRG-202-Rev0_Rev0 - elizabeth stormwater plan.pdf
Plans (proposed, existing) *	S-P.19.0421-00-CIV-DRG-211-Rev0_Rev0 - lefroy drainage and services plan.pdf
Plans (proposed, existing) *	S-P.19.0421-00-ELE-DRG-601-Rev0_Rev0 - lefroy electrical services plan.pdf
Plans (proposed, existing) *	S-P.19.0421-00-ELE-DRG-602-Rev0_Rev0 - elizabeth electrical services plan.pdf
Plans (proposed, existing) *	S-P.19.0421-00-ELE-DRG-603-Rev0_Rev0 - elizabeth electrical plan.pdf

Supporting Documents

Planning Report	S-P.19.0421-LEFROY CAR PARK SET-Rev0_Rev0 - cover sheet.pdf
Planning Report	Planning report.pdf
Plans	S-P.19.0421-00-CIV-DRG-101-Rev0_Rev0 - Elizabeth existin conditions.pdf
Plans	S-P.19.0421-00-CIV-DRG-211-Rev0_Rev0 - lefroy drainage and services plan.pdf
Stormwater Management Plan	T-P.19.0421-05-DRN-REP-007-Rev00_Rev00 - stormwater management plan.pdf
Inundation Assessment	T-P.19.0421-05-DRN-REP-008-Rev00_Rev00 - inundation assessment.pdf
Electrical Memo	T-P.19.0421-05-ELE-REP-009-Rev00_Rev00 - electrical memo.pdf
ESA	T-P.19.0421-05-ENV-REP-002-Rev00_Rev00 - ESA.pdf
NIA	T-P.19.0421-05-ENV-REP-005-Rev00_Rev00 - Noise impact assessment.pdf
SWMP	T-P.19.0421-05-ENV-REP-006-Rev00_Rev00 - SWMP.pdf
Geotechnical Investigation	T-P.19.0421-05-GEO-MEM-004-Rev00_Rev00 - Geotechnical Investigation.pdf
TIA	T-P.19.0421-05-TRA-REP-003-Rev00_Rev00 - TIA.pdf

**RESULT OF SEARCH**

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

SEARCH OF TORRENS TITLE

VOLUME 112639	FOLIO 1
EDITION 2	DATE OF ISSUE 30-Jun-2015

SEARCH DATE : 27-Apr-2022

SEARCH TIME : 04.50 PM

DESCRIPTION OF LAND

City of HOBART

Lot 1 on Diagram 112639

Derivation : Part of 3A-3R-19Ps Gtd to Joseph Benson Mather.

Prior CT 40195/1

SCHEDULE 1

HOBART CITY COUNCIL

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
B780629 Burdening easement: a right of carriageway
(appurtenant to Lot 1 on P.112640) over the land
marked 'RIGHT OF WAY' on D.112639 Registered
24-Aug-1995 at noon

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

**RESULT OF SEARCH**

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

SEARCH OF TORRENS TITLE

VOLUME 112639	FOLIO 2
EDITION 1	DATE OF ISSUE 25-Aug-1995

SEARCH DATE : 04-May-2022

SEARCH TIME : 04.14 PM

DESCRIPTION OF LAND

City of HOBART

Lot 2 on Diagram 112639

Derivation : Part of 3A-3R-19Ps. Gtd. to J.B. Mather

Prior CT 112294/1

SCHEDULE 1B859909 TRANSFER to HOBART CITY COUNCIL Registered
24-Aug-1995 at noonSCHEDULE 2

Reservations and conditions in the Crown Grant if any

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations



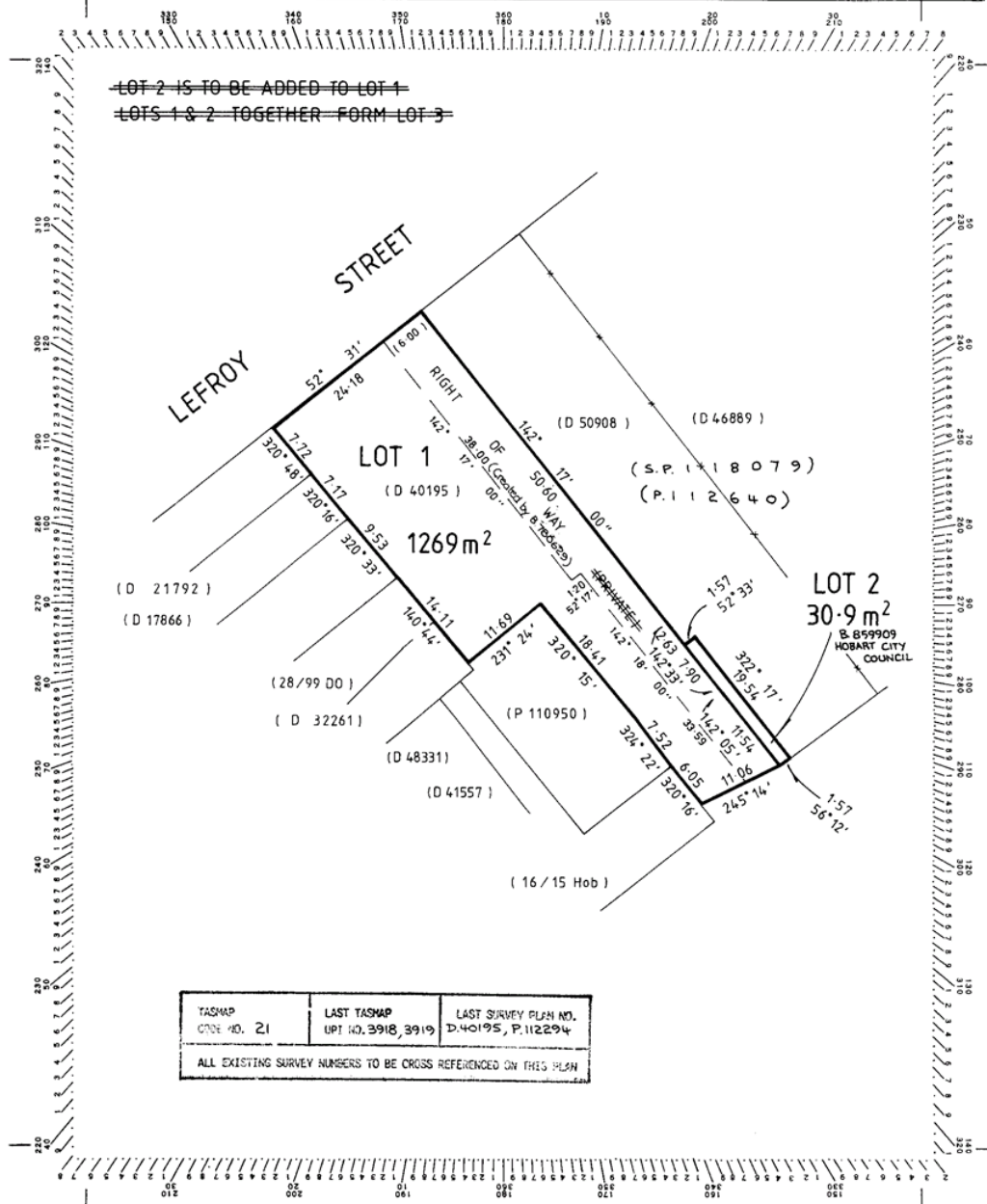
FOLIO PLAN

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



Owner: HOBART CITY COUNCIL THE DIRECTOR OF HOUSING	PLAN OF SURVEY by Surveyor: P. S. FLEMING of land situated in the	REGISTERED NUMBER D 112639
Title Reference: C.T.40195/1 & C.T.112294/1 CT 4589/59 & CT 4001/42	CITY OF HOBART (Sec. K2)	Approved: - 1 DEC 1994 Effective from: <i>[Signature]</i> Recorder of Titles
Grantee: PART OF 3a-3r-19p GRANTED TO JOSEPH BENSON MATHER	SCALE 1:500 MEASUREMENTS IN METRES	



**RESULT OF SEARCH**

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

SEARCH OF TORRENS TITLE

VOLUME 137808	FOLIO 1
EDITION 2	DATE OF ISSUE 05-Mar-2019

SEARCH DATE : 27-Apr-2022

SEARCH TIME : 04.46 PM

DESCRIPTION OF LAND

City of HOBART

Lot 1 on Plan 137808

Being the land secondly described in Conveyance No.42/7120

Excepting thereout Lots 1 & 2 on Plan 108890

Derivation : Part of 3a-3r-19p Gtd to Joseph Benson Mather

Derived from Y19732

SCHEDULE 1

FILIS PAPATRIANTAFILLOS and THEODORA PAPATRIANTAFILLOS

SCHEDULE 2

Reservations and conditions in the Crown Grant if any

E156339 BURDENING EASEMENT: A Right of Carriageway

(appurtenant to Lot 2 on Diagram 108890) over the

Right of Way A 3.50 wide on Plan 137808 Registered

05-Mar-2019 at 12.02 PM

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

**RESULT OF SEARCH**

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

SEARCH OF TORRENS TITLE

VOLUME 137808	FOLIO 2
EDITION 1	DATE OF ISSUE 26-Jul-2002

SEARCH DATE : 27-Apr-2022

SEARCH TIME : 04.47 PM

DESCRIPTION OF LAND

City of HOBART

Lot 2 on Plan 137808

Being the land thirdly described in Conveyance No.42/7120

Derivation : Part of 3a-3r-19p Gtd to Joseph Benson Mather

Derived from Y19732

SCHEDULE 1

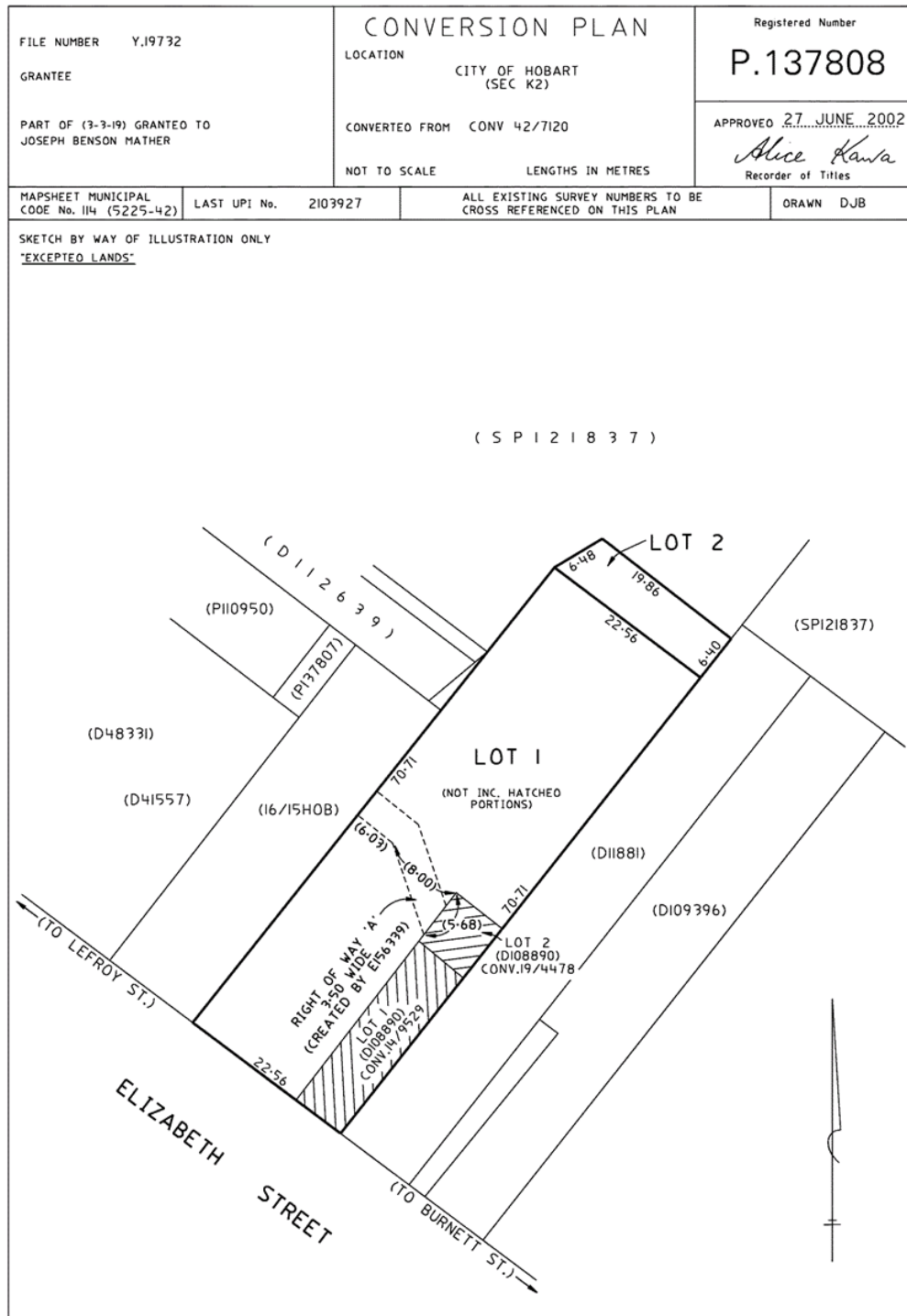
FILIS PAPATRIANTAFILLOS and THEODORA PAPATRIANTAFILLOS

SCHEDULE 2

Reservations and conditions in the Crown Grant if any

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations



**RESULT OF SEARCH**

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



SEARCH OF TORRENS TITLE

VOLUME 176661	FOLIO 1
EDITION 1	DATE OF ISSUE 05-Mar-2019

SEARCH DATE : 27-Apr-2022

SEARCH TIME : 04.46 PM

DESCRIPTION OF LAND

City of HOBART
 Lot 1 on Plan 176661
 Derivation : Part of 3A-3R-19Ps. Gtd. to J.B. Mather
 Prior CT 55085/1

SCHEDULE 1

A351611, C543007 & C543008 TRIANTAFILLOS PAPATRIANTAFILLOU
 and THEODORA PAPATRIANTAFILLOU Registered
 19-Mar-2004 at 12.01 PM

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
 BENEFITING EASEMENT: TOGETHER WITH a way or passage and right
 and privilege of way and passage at all times and
 with or without horses cattle carts and carriages
 laden or unladen for Andrew James Thomas Walker his
 executors administrators and assigns and his and
 their tenants and servants and others by his or their
 permission in over along and upon the Right of Way
 shown on D.55085 Reserving to The Mayor Aldermen and
 Citizens of the City of Hobart the right for the full
 and unobstructed flow of storm watr along the "Creek"
 shown on D.55085 and the right to enter upon the land
 for the purpose of cleaning or doing other necessary
 work in connection therewith

E156338 BURDENING EASEMENT: A Right of Carriageway
 (appurtenant to Lot 2 on Diagram 108890) over the
 Right of Way 3.50 wide on Plan 176661 Registered
 05-Mar-2019 at 12.01 PM
 E97633 AGREEMENT pursuant to Section 71 of the Land Use
 Planning and Approvals Act 1993 Registered
 26-Jun-2017 at noon
 E96857 MORTGAGE to Bank of Queensland Limited Registered
 28-Jun-2017 at 12.01 PM



RESULT OF SEARCH

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



UNREGISTERED DEALINGS AND NOTATIONS

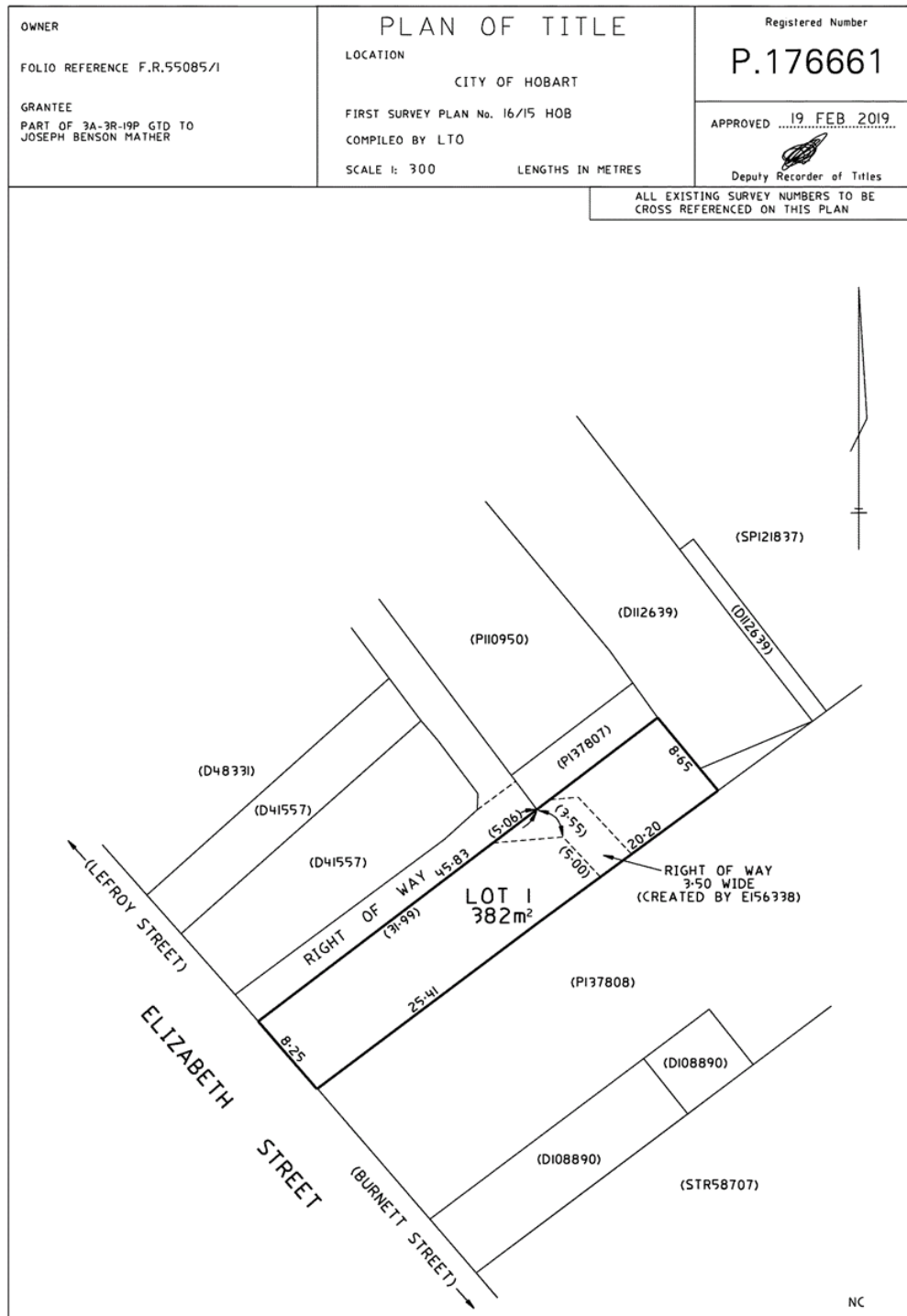
No unregistered dealings or other notations



FOLIO PLAN

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



**RESULT OF SEARCH**

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

SEARCH OF TORRENS TITLE

VOLUME 137807	FOLIO 1
EDITION 4	DATE OF ISSUE 28-Jun-2017

SEARCH DATE : 27-Apr-2022

SEARCH TIME : 04.45 PM

DESCRIPTION OF LAND

City of HOBART

Lot 1 on Plan 137807

Being the land firstly described in Conveyance No.42/7120

Derivation : Part of Location to Morris

Derived from Y19732

SCHEDULE 1

C543007 & C543008 TRIANTAFILLOS PAPATRIANTAFILLOU and
THEODORA PAPATRIANTAFILLOU Registered 19-Mar-2004
at 12.01 PM

SCHEDULE 2

Reservations and conditions in the Crown Grant if any

42/7120 BENEFITING EASEMENT: Right of Carriageway over the
Right of Way shown on Plan 137807E96857 MORTGAGE to Bank of Queensland Limited Registered
28-Jun-2017 at 12.01 PMUNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

**FOLIO PLAN**

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



FILE NUMBER Y.19732		CONVERSION PLAN		Registered Number
GRANTEE		LOCATION CITY OF HOBART (SEC K2)		P.137807
PART OF LOCATION TO MORRIS		CONVERTED FROM CONV 42/7120 (1stly desc.)		APPROVED 27 JUNE 2002
		NOT TO SCALE LENGTHS IN METRES		<i>Alice Kawa</i> Recorder of Titles
MAPSHEET MUNICIPAL CODE No. 114 (5225-42)	LAST UPI No. 2103927	ALL EXISTING SURVEY NUMBERS TO BE CROSS REFERENCED ON THIS PLAN		DRAWN DJB

SKETCH BY WAY OF ILLUSTRATION ONLY
"EXCEPTED LANDS"



Environmental Site Assessment

321-323A and 325 Elizabeth Street, North
Hobart

Prepared for
Hobart City Council

Client representative
Mr Glenn Doyle

Date
17 December 2021

Rev 00

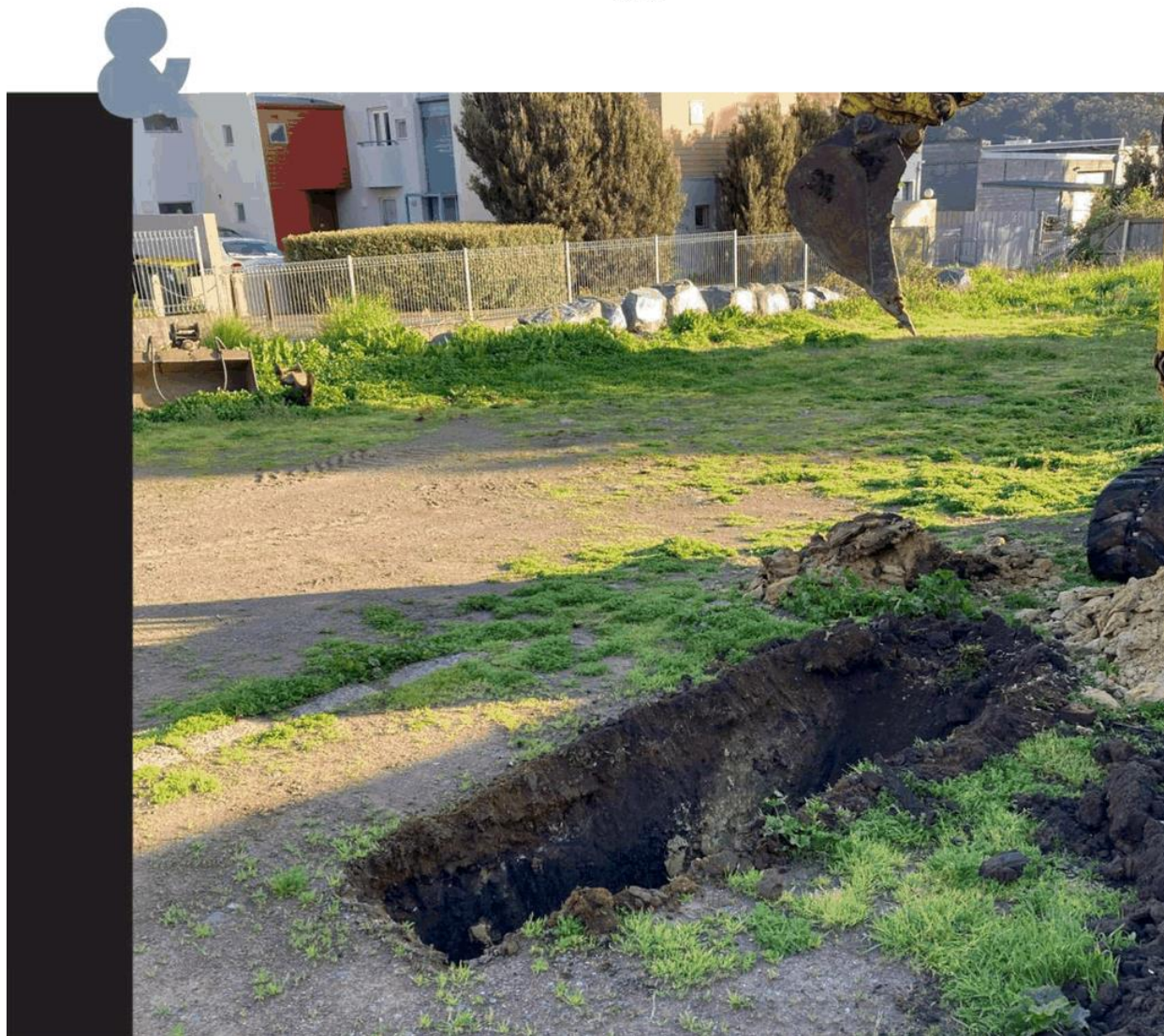




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Appendix P –	ALS Laboratory Quality Control Reports

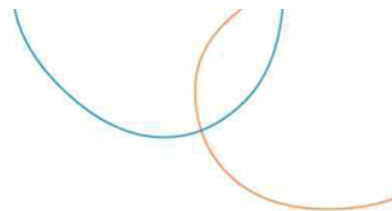
Prepared by — Carly Clark		Date — 17 December 2021
Reviewed by — Fiona Kesperue-Ponte	 	Date — 17 December 2021
Authorised by — Carly Clark	 	Date — 17 December 2021

Revision History

Rev No.	Description	Prepared by	Reviewed by	Authorised by	Date
A	Draft for internal review	C Clark	F Kesperue Ponte	C Clark	10/11/2021
B	Draft for client review	C Clark	F Kesperue Ponte	C Clark	12/11/2021
00	Final	C Clark	F Kesperue Ponte	C Clark	17/12/2021

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ref: T-P.19.0421-05-ENV-REP-002-Rev00/CC/hr



Executive Summary

Introduction:

Hobart City Council (HCC) has signed a lease agreement with the owners of 321-323A and 325 Elizabeth Street, North Hobart, Tasmania (the 'Property') with the intention of developing the rear of the Property (the 'Site') into a public car park. The car park is proposed to serve as an extension to the existing Lefroy Street car park, owned by HCC, with a bridge linkage to be provided across the Providence Rivulet between the existing and proposed car parks.

Given the historic potentially contaminating activities within and surrounding the Property, and the location of the adjacent Providence Rivulet, the following Codes apply under the *Hobart Interim Planning Scheme 2015*:

- Potentially Contaminated Land Code (PCLC); and
- Waterways and Coastal Protection Code (WCPC).

To address the requirements of the PCLC and the WCPC, this Environmental Site Assessment (ESA) incorporates a site history investigation, including review of previous documentation relating to a contamination investigation on the Property and a desktop natural values assessment, together with targeted intrusive investigations (i.e. sampling) across the Site.

Site history findings:

The site history investigation (Section 3), identified potential sources of contamination on the Property are likely to relate to:

- Former onsite activities including sale of used motor cars and trucks or upholsters in 1960 (Table 4)
- Presence of fill material containing concrete, broken bricks, sand and gravel; may include asbestos-containing material (ACM), although none was noted (Site inspection and test pitting)
- Presence of a TasWater sewer main beneath the Property (LISTmap); and/or
- Historical surrounding land uses including fuel storage / supply / garage; auto wreckers; scrap metal merchants; printers; dry cleaners; paint enamel varnish / stain manufacturers / importers / distributors; upholsters (Table 10).

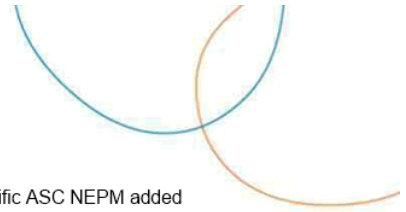
Intrusive investigation findings:

Intrusive investigations (Sections 5, 6 and 7), identified a number of exceedances of adopted guideline criteria:

- Human health perspective:
 - **Benzo(a)pyrene (BaP)** in surface water potentially exceeded the ANZG¹ freshwater default guideline value (DGV; 95% of species protection)
 - **Total coliforms** in soil / fill material above the laboratory limit of reporting (LOR)
- Ecological perspective:
 - **BaP** in soil / fill material exceeded the ASC NEPM² ecological screening level (ESL) for urban residential / public open space land use (based on zoning)
 - **Cu** in surface water exceeded the ANZG freshwater DGV (95% of species protection)

¹ Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2018

² National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended 2013i



- **Zn** in soil / fill material exceeded the most conservative calculated Site-specific ASC NEPM added contaminant limit (ACL) for urban residential / public open space land use (based on zoning); and
- **Zn** in surface water exceeded the ANZG freshwater DGV (95% of species protection).

Conclusions:

Based on the preliminary CSM (Section 7), and noting the limitations in Section 1.5 and the data gaps in Section 7.5, the level of contamination identified in soil and surface water represents a:

- Human health risk
 - **Low to very low risk** to current Site users
 - **No to very low risk** to future Site users under a car park use
 - **Possible risk** to future Site users under a residential use with access to soil (allowable under the zoning); and
 - **Low risk** to excavation and maintenance workers
- Ecological risk – **low risk**, except under two scenarios:
 - During earthworks – risks can be adequately managed under a SWMP, or similar; and
 - Future residential development with access to soil (allowable under the zoning) – would require removal of identified contaminated soils or access to the soils restricted.

Based on a preliminary desktop assessment of potential natural values assessment (Section 2.2), the proposed development of the Site, and more specifically development in the vicinity of Providence Rivulet, is unlikely to have an unnecessary or unacceptable impact on identified natural values. Note that no natural values survey has been carried out and the natural values within Providence Rivulet are not known.

The highest metals, BaP (and other polycyclic aromatic hydrocarbons; PAHs) and coliform concentrations are all associated with topsoils, blue-metal fill, and clay mixed with coal. These horizons occur from surface to depths with range from 0.2 to 0.7 metres below ground level (m bgl). When considering average total concentrations, however, the Site material sampled to a depth of 1.6 m bgl would be classified as Level 2 – low-level contaminated soil, based on **BaP** concentrations. This is due to high concentrations from just a few samples which are skewing the data. It is therefore recommended that excavated Site soils are segregated into contaminated, Level 2 soils and clean, Level 1 soils, as outlined below.

The findings of this ESA demonstrate that:

- The Site is suitable for the intended use as a car park – the Site is suitable for continued residential land use (based on zoning) in terms of the PCLC (Clause 2.5, Performance Criteria P1(c)), provided the Site surface is sealed as a component of the redevelopment or contaminated soil is removed from Site
- Excavation does not adversely impact on human health or the environment – the Site is suitable for the proposed redevelopment in terms of the PCLC (Clause 2.6.2, Performance Criteria P1(b)), provided the requirements of a SWMP, or similar, are implemented during excavation works; and
- Development works do not adversely impact on natural values – the Site is suitable for the proposed redevelopment in terms of the WCPC (Clause 11.7.1, Performance Criteria P1), provided the requirements of a SWMP, or similar, are implemented during excavation works.

Recommendations:

Based on the findings of this ESA, and noting the limitations in Section 1.5 and the data gaps in Section 7.5, the following recommendations are made:

- Include sealing of the Site surface in the redevelopment works
- Prepare and implement a SWMP (or similar) for the redevelopment works to mitigate and control potential human health and environmental impacts during earthworks; and
- The SWMP should focus on soil and water management to satisfy Clause 11.7.1, Performance Criteria P1 of the WCPC, including management of waste surplus soils.

If the Site were to be developed in the future, for residential use with access to soil (allowable under the zoning), this would require identified contaminated soils to be removed or access to these soils to be restricted

Waste disposal:

It is recommended that waste soils be segregated during excavation works, in order to minimise the amount of Level 2 waste soil material, which will result in lower landfill disposal costs, it will allow clean soils to be reused or disposed more affordably as Level 1 waste.

Furthermore, removal of all of the topsoil, blue metal, and coal intermixed with clay within the Site, will result in remediating the Site to a level which is likely to meet ASC NEPM residential criteria.

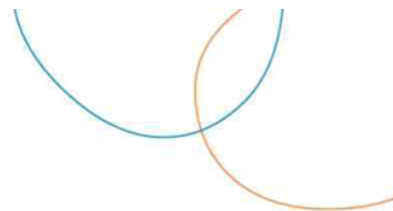
To achieve this, all of the topsoils, blue-metal fill, and clay mixed with coal will need to be excavated and stockpiled separately for disposal as Level 2 – low-level contaminated waste, and all other excavated soils should be excavated and stockpiled separately for reuse on Site, or disposed as Level 1 fill.

The Level 2 soils are predominantly characterised by:

- Depths from surface to a maximum of approximately 0.7 m; and
- Composed of topsoil, blue metal, and coal intermixed with clay.

Level 2 soils should be disposed as low-level contaminated soil, by a licensed controlled waste disposal contractor to a landfill licensed to receive Level 2 contaminated waste. Environment Protection Authority (EPA) approval for disposal is required.

All other soils can either be reused on Site or can be disposed of as Level 1 fill material at the local municipal landfill.




Abbreviations

Abbreviation	Description
ACL	Added Contaminant Limit
ACM	Asbestos-containing Material(s)
AES	Areas of Ecological Significance
AHD	Australian Height Datum
ANZECC	<i>National Water Quality Management Strategy – Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000</i>
ANZG	<i>Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2018</i>
As	<i>Arsenic</i>
ASC NEPM	<i>National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended 2013</i>
ASS	Acid Sulfate Soils
BaP	Benzo(a)pyrene
BTEXN	Benzene (B), Toluene (T), Ethyl-benzene (E), Xylenes (X) and Naphthalene (N)
Cd	Cadmium
CEMP	Construction Environmental Management Plan
CEnvP SC	Certified Environmental Practitioner Site Contamination Specialist
COC	Chain of Custody
CoPC	Contaminant(s) of Potential Concern
Cr	Chromium
CSM	Conceptual Site Model
Cu	Copper
DGV	Default Guideline Value
DQO	Data Quality Objective(s)
EIANZ	Environment Institute of Australia and New Zealand
EIL	Ecological Investigation Level
EPA	Environment Protection Authority (Tasmania)
ESA	Environmental Site Assessment
ESL	Ecological Screening Level
GDE	Groundwater Dependent Ecosystem
HCC	Hobart City Council



Abbreviation	Description
Hg	Mercury
HIL	Health Investigation Level
HSL	Health Screening Level
IB105	<i>Information Bulletin No. 105 Classification and Management of Contaminated Soil for Disposal</i> (v3, 2018)
IDE	Inflow Dependent Ecosystem
LISTmap	Land Information System Tasmania
LNAPL	Light Non-aqueous Phase Liquid
LOR	Limit of Reporting
m bgl	Metres Below Ground Level
MRT	Mineral Resources Tasmania
NATA	National Association of Testing Authorities
Ni	Nickel
PAH	Polycyclic Aromatic Hydrocarbons
Pb	Lead
PCLC	Potentially Contaminated Land Code under the <i>Hobart Interim Planning Scheme 2015</i>
PEV	Protected Environmental Value
PID	Photo-ionisation Detector
PIR	Property Information Request
Property	321-323A and 325 Elizabeth Street, North Hobart, Tasmania, 7000
QA/QC	Quality Assurance / Quality Control
RPD	Relative Percentage Difference
Site	Rear of the Property, as defined on Figure 1 (Appendix A)
SPR	Source (S) – Pathway (P) – Receptor (R) Linkage(s)
SWMP	Soil and Water Management Plan
TEQ	Toxicity Equivalent Quotient
TPH / TRH	Total Petroleum Hydrocarbons / Total Recoverable Hydrocarbons
TV	Trigger Value
UPSS	Underground Petroleum Storage System(s)
VOCs	Volatile Organic Compounds
WCPC	Waterways and Coastal Protection Code under the <i>Hobart Interim Planning Scheme 2015</i>



Abbreviation	Description
WQM	Water Quality Meter
WST	WorkSafe Tasmania
Zn	Zinc



1. Introduction

1.1 Background

Hobart City Council (HCC) has signed a lease agreement with the owners of 321-323A and 325 Elizabeth Street, North Hobart, Tasmania (the 'Property') with the intention of developing the rear of the Property (the 'Site') into a public car park. The car park is proposed to serve as an extension to the existing Lefroy Street car park, owned by HCC, with a bridge linkage to be provided across the Providence Rivulet between the existing and proposed car parks.

Given the historic potentially contaminating activities within and surrounding the Property, the Potentially Contaminated Land Code (PCLC) of the *Hobart Interim Planning Scheme 2015* applies (Clause E2.2) to redevelopment of the Site, and the proposed redevelopment is not exempt from the PCLC (Clause E2.4). An Environmental Site Assessment (ESA) is required as a component of the development application to enable HCC to assess the application against the relevant provisions of the PCLC (Clause E2.5 and Clause E2.6.2).

Given the location of the adjacent Providence Rivulet, the Waterways and Coastal Protection Code (WCPC) of the *Hobart Interim Planning Scheme 2015* applies (Clause E11.2) to redevelopment of the Site, and the proposed redevelopment is not exempt from the WCPC (Clause E11.4). A natural values assessment and a soil and water management plan is required as a component of the development application to enable HCC to assess the application against the relevant provisions of the WCPC (Clause E11.5.1 and Clause E11.7.1). Providence Rivulet is deemed to be a Class 4 Watercourse under the WCPC (Table E11.1).

pitt&sherry was engaged by HCC to address Clauses E2.5 and E2.6.2 of the PCLC and Clauses E11.5 and E11.7.1 of the WCPC. The ESA (this document) incorporates a site history investigation, including review of previous documentation relating to a contamination investigation on the Property and a desktop natural values assessment, together with targeted intrusive investigations (i.e. sampling) across the Site.

1.2 Objectives

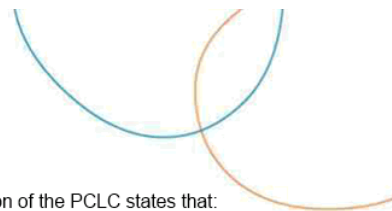
1.2.1 Potentially Contaminated Land Code

The objective of the PCLC is to ensure that use or development of potentially contaminated land does not adversely impact on human health or the environment.

The performance criteria (P1) under Clause 2.5 Use Standard of the PCLC states that:

Land is suitable for the intended use, having regard to:

- (a) *an environmental site assessment that demonstrates there is no evidence the land is contaminated; or*
- (b) *an environmental site assessment that demonstrates that the level of contamination does not present a risk to human health or the environment; or*
- (c) *a plan to manage contamination and associated risk to human health or the environment that includes:*
 - (i) *an environmental site assessment;*
 - (ii) *any specific remediation and protection measures required to be implemented before any use commences; and*
 - (iii) *a statement that the land is suitable for the intended use.*



The performance criteria (P1) under Clause 2.6.2 Development Standard – Excavation of the PCLC states that:

Excavation does not adversely impact on health and the environment, having regard to:

- (a) an environmental site assessment that demonstrates there is no evidence the land is contaminated; or*
- (b) a plan to manage contamination and associated risk to human health and the environment that includes:*
 - (i) an environmental site assessment;*
 - (ii) any specific remediation and protection measures required to be implemented before excavation commences; and*
 - (iii) a statement that the excavation does not adversely impact on human health or the environment.*

1.2.2 Waterways and Coastal Protection Code

The objective of the WCPC, in the context of the proposed development, is to manage vegetation and soil disturbance in the vicinity of Providence Rivulet in order to minimise impact on water quality, natural values including native riparian vegetation, river condition and the natural ecological function of the watercourse.

The application requirements under Clause E11.5.1 states that

In addition to any other application requirements, the planning authority may require the applicant to provide any of the following information if considered necessary to determine compliance with performance criteria:

- (a) A natural values assessment;*
- (b) A soil and water management plan;*
- (c) A coastal processes assessment;*
- (d) A site survey from a qualified land surveyor identifying the location of a Waterways and Coastal Protection Area, a Future Coastal Refugia Area or a Potable Water Supply Area, if uncertainty exists as to the relative location of the development site.*

The performance criteria (P1) under Clause 11.7.1 Use Standard of the PCLC states that:

Building and works within a Waterway and Coastal Protection Area must satisfy all of the following:

- (a) avoid or mitigate impact on natural values;*
- (b) A mitigate and manage adverse erosion, sedimentation and runoff impacts on natural values;*
- (c) mitigate and manage adverse erosion, sedimentation and runoff impacts on natural values;*
- (d) maintain natural streambank and streambed condition, (where it exists);*
- (e) maintain in-stream natural habitat, such as fallen logs, bank overhangs, rocks and trailing vegetation;*
- (f) avoid significantly impeding natural flow and drainage;*
- (g) maintain fish passage (where applicable);*
- (h) avoid landfilling of wetlands;*
- (i) works are undertaken generally in accordance with 'Wetlands and Waterways Works*



Manual" (DPIWE, 2003) and "Tasmanian Coastal Works Manual" (DPIPWE, Page and Thorp, 2010), and the unnecessary use of machinery within watercourses or wetlands is avoided.

1.2.3 Environmental site assessment

The objectives of this ESA are to obtain and compile available information on the historical uses and natural values of the Property and immediate surrounds, and assess:

- The potential for contamination to be present within the Property
- The potential for possible contamination from offsite to impact on the Property
- The risks posed by any potential, or identified contamination to human health and/or the environment from the Site during use or excavation works for the proposed development
- The risks posed by development works to natural values in the vicinity of, and water quality within, Providence Rivulet
- Whether any specific remediation and/or protection measures (e.g. management) are required to be implemented before use or excavation commences

and provide:

- A statement that the Site is suitable for its intended use; and
- A statement that the excavation does not adversely impact on human health or the environment.

This ESA has been both written and reviewed by a Certified Environmental Practitioner Site Contamination Specialist (CEnvP SC) under the Environment Institute of Australia and New Zealand (EIANZ).

1.3 Scope of works

The pitt&sherry scope of work included the following:

- Reviewing the Preliminary ESA³ for the Property
- Obtaining and reviewing historical information pertaining the Property and immediate surrounds
- Inspecting the Property, including an inspection of surrounding properties/uses (as allowed/practicable)
- Completing a desktop natural values assessment
- Targeted intrusive investigations (i.e. soil / fill material) within the Site (i.e. within the area that is to be redeveloped)
- Assessing the suitability of the Property for the proposed development (from a contamination perspective)
- Assessing whether proposed excavation works may adversely impact on human health and/or the environment
- Assessing whether the proposed development works may adversely impact on natural values or water quality of Providence Rivulet
- Determining whether any specific remediation and/or management measures are required; and
- Compiling the findings into an ESA (this report) to address the requirements of the PCLC and WCPC.

³ Preliminary Soil Contamination Assessment, Providence Rivulet Retaining Wall, 321-323A Elizabeth Street, North Hobart, Rev 00, pitt&sherry, 23 November 2020 (Preliminary ESA)



1.4 Legislation

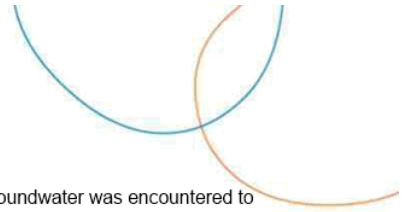
This ESA was undertaken in general accordance with the following legislation and guidelines:

- *Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2018*. Australian and New Zealand Governments and Australian State and Territory Governments, Canberra ACT, Australia (ANZG)
- AS 4482.1 *Guide to the investigation and sampling of sites with potentially contaminated soil – Non-volatile and semi-volatile compounds*, Standards Australia, 2 November 2005 or as amended or substituted
- AS 4482.2 *Guide to the sampling and investigation of potentially contaminated soil – Volatile substances*, Standards Australia, 5 September 1999 or as amended or substituted
- AS/NZS 5667.1:1998 *Water quality – Sampling, Part 1: Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples*, Standards Australia, 1998 (AS/NZS 5667.1)
- AS/NZS 5667.6:1998 *Water quality – Sampling, Part 6: Guidance on sampling of river and streams*, Standards Australia, 1998 (AS/NZS 5667.6)
- CRC Care Technical Report No. 10 *Health Screening Levels for Petroleum Hydrocarbons in Soil and Groundwater September 2011, including errata August 2012* (CRC Care Technical Report No. 10)
- *Environmental Management and Pollution Control Act 1994* (EMPCA) and relevant Regulations
- *National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended 2013* (ASC NEPM)
- *National Water Quality Management Strategy – Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000* (ANZECC)
- *Tasmanian State Policy on Water Quality Management, 1997* (Water Policy); and
- Tasmanian Environment Protection Authority (EPA) *Information Bulletin No. 105 Classification and Management of Contaminated Soil for Disposal (v3, 2018)* (IB105).

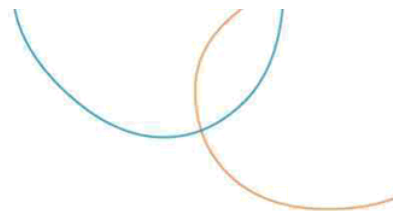
1.5 Limitations

Limitation of this ESA include:

- Neighbouring properties were only inspected from outside of their boundaries
- No interviews with Property owners (past or present) were conducted
- No historical title search for the Property was undertaken as a component of the ESA; potential for contamination is likely to be related to the known former use of the Property and surrounding properties
- No anecdotal evidence was collected, and no interviews were undertaken as part of this ESA
- The natural values assessment was primarily a desktop assessment of potential natural values only, with an inspection for weeds conducted as a component of the Site visit; no natural values survey has been carried out and the natural values within Providence Rivulet are not known
- Test pit locations were restricted by the presence of two large TasWater stormwater pipes and a TasWater sewer main in the western part of the Site; excavation works were constrained to the east of the TasWater sewer main
- The depth of excavation was guided by the proposed maximum depth of excavations of 1.6 metres below ground level (m bgl) during redevelopment works
- The assessment of surface water quality in Providence Rivulet was limited to a single grab sample during one sampling event
- Soil samples were tested for total concentrations only (i.e. no leachability testing was undertaken)
- With the exception of benzo(a)pyrene (BaP) in soil, analytical results were reported at standard laboratory limits of reporting (LORs); for surface water, the standard LOR for BaP was above the adopted guideline criterion



- No groundwater investigation was undertaken as a component of the ESA; no groundwater was encountered to the maximum depth of excavation of 1.6 m bgl
- No soil vapour investigation was undertaken as a component of the ESA; no olfactory evidence of volatile contamination was observed during sampling; field screening for volatile organic compounds (VOCs) returned very low readings and soil analytical results did not indicate contamination from VOCs
- In accordance with IB105, the sampling density of homogeneous soils for offsite disposal is one sample per 25 m³. This density is not appropriate for in-situ sampling for bulk earthworks and a reduced sampling frequency was adopted to give a preliminary indication of the likely classification of Site soils for offsite disposal during proposed earthworks
- Preparation of a soil and water management plan (focussing on managing any identified contamination) is outside the scope of this ESA; and
- Preparation of a remediation management plan (to manage any identified contamination and associated risks to human health and/or the environment) is outside the scope of the ESA.



2. Property setting


2.1 Property identification

Property identification details are provided in Table 1.

The Property and Site locations are shown on Figure 1 (Appendix A).

Table 1: Property details

Detail	Description
Addresses	<ul style="list-style-type: none"> 321-323A Elizabeth Street, North Hobart, Tasmania, 7000 325 Elizabeth Street, North Hobart, Tasmania, 7000
Titles	<ul style="list-style-type: none"> 137808/1 and 137808/2 137807/1 and 176661/1
Property Identification	<ul style="list-style-type: none"> 5662281 5662302
Property and Site areas	<ul style="list-style-type: none"> Property – 1,880 m² (approximately) Site – 1,150 m² (approximately)
Zoning	<p>Under the <i>Hobart Interim Planning Scheme 2015</i>, the:</p> <ul style="list-style-type: none"> Front portion of the Property is zoned 'General Business' Rear Portion of the Property, including the Site is zoned 'Inner Residential' <p>Planning overlays for the Property include:</p> <ul style="list-style-type: none"> Royal Hobart Hospital Helipad Airspace Specific Area Plan North Hobart Specific Area Plan Heritage Precinct (Heritage Number NH6)
Regional setting	<ul style="list-style-type: none"> The Property is located in North Hobart on relatively flat land that slopes gently to the north-east Providence Rivulet is adjacent to the northern Site boundary, separated from the Site by a retaining wall Current neighbouring land uses include: <ul style="list-style-type: none"> North – car park East – residential South – car park West – commercial premises (restaurant, hairdresser, brewery), with Elizabeth Street further to the west
Current Property owner	<ul style="list-style-type: none"> F & T Papatriantafillos (321 Elizabeth Street) Q Villanueva (323A and 325 Elizabeth Street)
Current land use	<ul style="list-style-type: none"> Restaurant on the 321-323A Elizabeth Street frontage (Culinary King Indian Restaurant and MaMa Chicken) Hairdresser on the 325 Elizabeth Street frontage (Fusion Hairdressing) Car parking at the rear of the buildings, including a shed at the rear of 325 Elizabeth Street which is to be demolished




Detail	Description
Local government	Hobart City Council (HCC)
Land tenure	Private freehold

2.2 Property description and natural values


Available information on Property features, including natural values, is summarised in Table 2.

Table 2: Property description

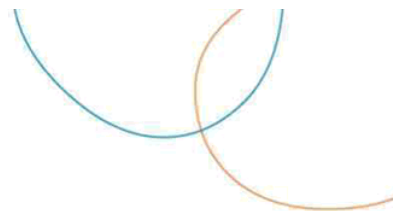
Feature	Description	Information Source
Infrastructure features	<ul style="list-style-type: none"> Property – buildings on the Elizabeth Street frontage with car parking at the rear Site – car parking with a TasWater gravity reticulation sewer main running through the site from the north-west to the south-east 	LISTmap – TasWater sewer main layer Property inspection and intrusive investigations
Easements	<ul style="list-style-type: none"> There are no easements within the Property There is an easement (right of carriageway) that runs along the northern Property boundary 	LISTmap – easements layer Lotsearch Report (Appendix B)
Elevation	<ul style="list-style-type: none"> The Property elevation is approximately 45 m Australian Height Datum (AHD) 	LISTmap – contours (5m) layer Lotsearch Report (Appendix B)
Topography	<ul style="list-style-type: none"> The Property is generally flat with a gentle slope to the north-east 	LISTmap – contours (5m) layer Property inspection
Surface water	<ul style="list-style-type: none"> Surface water runoff from the Property and the Site (predominantly unpaved) is anticipated to flow to the north and north-east into the Providence Rivulet stormwater catchment or recharge to groundwater The nearest surface water body is the Providence Rivulet, adjacent to the northern boundary of the Site The Providence Rivulet discharges to the River Derwent to the north-east 	LISTmap – Hobart stormwater catchment layer LISTmap – hydrographic lines layer
Groundwater	<ul style="list-style-type: none"> Shallow groundwater beneath the Property is expected to discharge to the adjacent Providence Rivulet There are no registered groundwater wells within 1 km of the Property No groundwater was intersected during drilling to a maximum depth of 1.6 m bgl The base of Providence Rivulet is approximately 1.1 to 1.8 m lower than the Site surface 	Groundwater Information Access Portal Property inspection



Feature	Description	Information Source
Groundwater and inflow dependent ecosystems	<ul style="list-style-type: none"> Groundwater dependent ecosystem (GDE) – none within 1 km of the Property Inflow dependent ecosystem (IDE) – none within 1 km of the Property 	Lotsearch Report (Appendix B)
Geology	<ul style="list-style-type: none"> The northern half of the Property is underlain by Quaternary Age Cenozoic cover sequences (Qa) consisting of alluvial gravel, sand and clay The southern half of the Property is underlain by Permian – Triassic Age Tasmanian Basin (Rv) consisting of undifferentiated volcanoclastic, quartz-rich lithic and quartzose sandstone, siltstone, mudstone, carbonaceous beds and coal seams 	LISTmap – geological polygons 25K layer Lotsearch Report (Appendix B)
Soils	<p>The soils beneath the Property (and surrounds) are described as:</p> <ul style="list-style-type: none"> Undefined soil developed on Triassic sandstone bedrock and colluvium on undulating to rolling (3-32%) land (LISTmap) Hilly: Gentle to moderate, sometimes stony, slopes of deep dark clays (Ug5.14 and Ug5.13) with smaller areas of dark friable earths (Gn3.43) and minor areas of (Dr2.12 and Dr2.13); also steep slopes often stony, of dark clays (Ug5.12) (Atlas of Australian Soils) <p>pitt&sherry test pit profiles suggest the soil profile is generally:</p> <ul style="list-style-type: none"> 0 to 0.5 m bgl – topsoil and silty clay (some fill), underlain by 0.5-1.1 m bgl – clay, underlain by 1.1-1.6 m bgl – clayey sand 	LISTmap – soil types layer Lotsearch Report (Appendix B) Test pit logs (Appendix K)
Acid sulfate soils (ASS)	<ul style="list-style-type: none"> The Property is mapped as having an extremely low probability of encountering ASS (1-5% chance of occurrence); this was also confirmed by the profile encountered during test pitting No ASS have been documented within 500 m of the Property The closest mapped area of ASS is approximately 520 m to the east of the Property along the western side of the Brooker Avenue That area is mapped as having a low probability of encountering ASS (6-70% chance of occurrence) 	LISTmap – inland ASS (>20m AHD) and coastal ASS (0-20m AHD) layers Lotsearch Report (Appendix B) Natural Values Atlas Report (Appendix C)
Heritage	<p>The Property is:</p> <ul style="list-style-type: none"> Not listed on the Tasmanian Heritage Register <p>Surrounding heritage-listed properties include:</p> <ul style="list-style-type: none"> The North Hobart Post Office (approximately 220 m north-west) is listed on the Commonwealth Heritage List No items within 500 m of the property are listed on the National Heritage List A number of items in the vicinity of the Property are registered on the Tasmanian Heritage Register, the closest being commercial retail at 315 Elizabeth Street, North Hobart, approximately 15 m to the south-east of the Property 	LISTmap – Tasmanian Heritage Register layer Lotsearch Report (Appendix B)



Feature	Description	Information Source
Ecology	<ul style="list-style-type: none"> Flora – one threatened flora species has been mapped or recorded within 500 m of the Property; none within the Property Fauna – fifteen threatened fauna species may occur within 500 m of the Property (based on range boundaries) Raptor nests or sightings – four recorded within 500 m of the Property; three may occur within 500 m of the Property (based on range boundaries); none within the Property 	Natural Values Atlas Report (Appendix C)
Vegetation	<ul style="list-style-type: none"> The Property is within modified land urban areas (FUR) One threatened vegetation community (Eucalyptus globulus dry forest and woodland; DGL) is present approximately 550m to the north-east of the Property 	LISTmap – TASVEG 4.0 layer Natural Values Atlas Report (Appendix C) Lotsearch Report (Appendix B)
Weeds	<ul style="list-style-type: none"> Five <i>Tasmanian Management Act 1999</i> weeds have been reported within 500 m of the Property (last record was 1926); none within the Property No Priority Weeds have been reported within 500 m of the Property Site inspection identified weeds present throughout the Site including blackberry and gorse (declared weeds) 	Natural Values Atlas Report (Appendix C) Property inspection
Wetlands	<ul style="list-style-type: none"> There are no Ramsar Wetlands within the 1 km of the Property 	Lotsearch Report (Appendix B)
Geoconservation	<ul style="list-style-type: none"> No geoconservation sites have been documented within 500 m of the Property 	Natural Values Atlas Report (Appendix C)
Fire history	<ul style="list-style-type: none"> No fires are known to have occurred within 500 m of the Property; none are known to have occurred within the Property 	Natural Values Atlas Report (Appendix C)
Reserves	<ul style="list-style-type: none"> No reserves are documented within 500 m of the Property; none within the Property 	Natural Values Atlas Report (Appendix C)
Biosecurity	<ul style="list-style-type: none"> No known biosecurity risks have been reported within 500 m of the Property; none within the Property 	Natural Values Atlas Report (Appendix C)



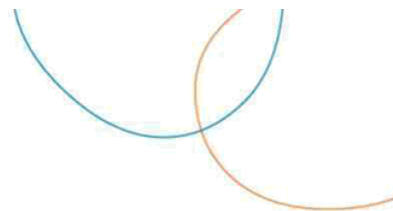
2.3 Natural hazards

Under the *Hobart Interim Planning Scheme 2015*, there are a number of natural hazard overlays and these are available on the LISTmap.

A summary of natural hazards in the vicinity of the Property is provided in Table 3.

Table 3: Natural hazards

Natural hazard	Description	Information Source
Flood	<ul style="list-style-type: none"> The Property is not subject to flooding 	Lotsearch Report (Appendix B)
Coastal inundation	<ul style="list-style-type: none"> The Property is not subject to coastal inundation 	LISTmap – coastal inundation hazard bands layer Lotsearch Report (Appendix ??)
Coastal erosion	<ul style="list-style-type: none"> The Property is not subject to coastal erosion 	LISTmap – coastal erosion hazard bands layer Lotsearch Report (Appendix B)
Landslide	<ul style="list-style-type: none"> The Property is not within a landslide-prone area The nearest landslide hazard area (deep-seated slide susceptibility) is approximately 345 m to the south-west. This area has no known active landslides, however it has been identified as being susceptible to landslide by Mineral Resources Tasmania (MRT) 	LISTmap – landslide planning map hazard bands layer Lotsearch Report (Appendix B)
Bushfire	<ul style="list-style-type: none"> The Property and immediate surrounds are not within a bushfire prone area Closest bushfire prone area is approximately 540 m north-east of the Property Closest planned burn was approximately 570 m to the north-east of the Property in 2008 	Lotsearch Report (Appendix B)



3. Property history

3.1 Historical Property title information

A historical title search for the Property was not undertaken as a component of this ESA.

3.2 Historical business directories


Results from historical business directory searches from 1950, 1960, 1971, 1984 and 1991 are illustrated on figures and tabulated in the Lotsearch Report in Appendix B.

A summary of known premises addresses and businesses which are situated within the Property (i.e. a direct premise match) is provided in Table 4. Potentially contaminating premise addresses outside, but in proximity (within 50 m buffer) to, the Property have also been included in Table 4. Where there is potential for the activity to impact on the Property from a contamination perspective (based on business activity type), this is identified in **red text**.

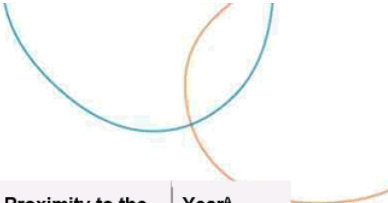
There are a number of identified historical business activities in the vicinity of the Property, for which exact addresses have not been provided (i.e. road match). With the exception of the fuel and ice merchants at 17 Burnett Street, North Hobart, the business activities listed in the Lotsearch Report are considered unlikely to have impacted on the Property and have not been considered further as they are not considered to be potentially contaminating activities.

Table 4: Historical business directories – direct premise match

Business Activity	Premise Name	Address	Proximity to the Property	Year ^a
Within Property boundary				
Fish merchants Fish shops Fishmongers	North Hobart Fish Supply	323 Elizabeth Street, North Hobart	Onsite	1960, 1971, 1984 & 1991
Fishmongers Poulterers	J. Flasks		Onsite	1950
Fruiterers and greengrocers	The Green Inn	323A Elizabeth Street, North Hobart	Onsite	1950, 1960 & 1971
Upholsterers	H. Reis		Onsite	1960
Motor cars & trucks (used)	Autoland	321 Elizabeth Street, North Hobart	Onsite	1960
Grocers & general storekeepers	W. D & H Macmillan		Onsite	1950
Hairdressers – ladies &/or beauty salons	Aquarius Hair Design	325 Elizabeth Street, North Hobart	Onsite	1991
Bakers & pastrycooks	Golden Grain Bakery		Onsite	1950



Business Activity	Premise Name	Address	Proximity to the Property	Year ^a
Outside Property boundary				
Motor car &/or truck dealers – new &/or used	Mcgregor's Auto Sales O.K. Cars	317 Elizabeth Street, North Hobart	Adjacent to the south-east	1960, 1971 & 1984
Fuel & ice merchants	G.J. Lincoln			1950
Motor windscreens	Modern Auto Wreckers	16 Lefroy Street, North Hobart [now part of 45A Burnett Street]	Adjacent to the north-east	1984
Motor body builders &/or repairers Engineers – general &/or manufacturers &/or mechanical Welders Engineers – general, mechanical and manufacturing	Hec. Smith & Sons	18 Lefroy Street, North Hobart [now part of 45A Burnett Street]	Adjacent to the north-east	1971 & 1984
Motor garages &/or engineers &/or service stations Motor garages and engineers	Barry Cooper Auto Repairs	14 Lefroy Street, North Hobart	Approximately 10 m to the north	1971 & 1984
Printers	Fleetway Printing Service	362 Elizabeth Street, North Hobart	Approximately 20 m to the north	1960
Scrap metal merchants	Lynette (Mrs E.M. Wicks)	358 Elizabeth Street, North Hobart [now 360-362 Elizabeth Street]	Approximately 20 m to the south-west	1950
Carriers – interstate Carriers &/or cartage contractors Freight forwarders Parcel delivery specialists	Blue Ribbon Flite Way Couriers Kings Air Cargo State Express Parcel Co.	12 Lefroy Street, North Hobart	Approximately 25 m to the north	1984
Dry cleaners, dyers & pressers	Blue Bell Services (Agents, Moonah Dry Cleaners)	370 Elizabeth Street, North Hobart [now 370-374 Elizabeth Street]	Approximately 30 m to the west	1960



Business Activity	Premise Name	Address	Proximity to the Property	Year ^A
Upholsterers	H. Reis	311A Elizabeth Street, North Hobart [now 307-311A Elizabeth Street]	Approximately 35 m to the south-east	1950
Motor garages & engineers	P.G. Klann	10 Lefroy Street, North Hobart	Approximately 40 m to the north	1960 & 1971
Motor electricians Motor garages &/or engineers &/or service stations	Millington Autos Tony Barrett Auto Electrician	45 Burnett Street, North Hobart	Approximately 45 m to the east	1984
Paint enamel varnish &/or stain manufacturers &/or importers &/or distributors	I.C.I. Dulux Trade Centre	47 Burnett Street, North Hobart [now 47-51 Burnett Street]	Approximately 50 m to the east	1991
Manufacturers agents	Westport Agencies	49 Burnett Street, North Hobart [now 47-51 Burnett Street]	Approximately 50 m to the east	1991
Fuel & ice merchants	W. Waller Junior	17 Burnett Street, North Hobart [now part of 3 Alberry Avenue to 313-321 Argyle Street (Soundy Park)]	At least 150 m to the north-east	1950 & 1960

Notes:

A – Universal Business Directory Records from the years 1950, 1960, 1971, 1984 and 1991 (refer to Lotsearch Report in Appendix B).

Red text – indicates the activity has the potential to have impacted on the Property from a contamination perspective (based on activity type).



3.3 Previous investigations

One known previous investigation has been conducted on the Property in relation to potential land contamination:

- *Preliminary Soil Contamination Assessment, Providence Rivulet Retaining Wall, 321-323A Elizabeth Street, North Hobart, Rev 00, pitt&sherry, 23 November 2020 (Preliminary ESA) – Section 3.3.1*

The main points of note from a contamination perspective are discussed below.

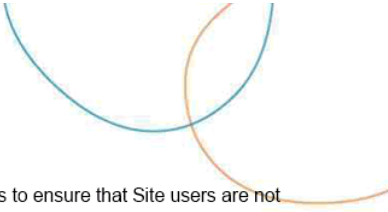
3.3.1 Preliminary Environmental Site Assessment (pitt&sherry, 2020)

The Preliminary ESA (pitt&sherry, 2020) was required under Clause E2.6.2 of the PCLC, as two adjacent properties are listed as potentially contaminated on HCC's register. The scope of the Preliminary ESA was limited to:

- A brief desktop Site history to determine potentially contaminating activities and contaminants of potential concern (CoPC)
- Contamination testing of shallow soil (0.2 m bgl) in four discrete locations that were to be excavated during the proposed construction of a retaining wall along Providence Rivulet (northern Site boundary); and
- Reporting.

Key information relating to the potential for Property contamination includes the following:

- Historical land uses at adjacent properties may have impacted Site soils (HCC's register):
 - 317 Elizabeth Street – previously used as a service station and fuel supply; listed under G. Lincoln, 1948
 - 315 Elizabeth Street – previously used as a fuel supplier; listed as Mooney & Bower, 1916
 - 20 Lefroy Street [now 16A Lefroy Street] – previously used as a garage; listed under Abel Tasman Transport, 1971
- Fill material is likely to have been imported to Site during construction of the Providence Rivulet embankment
- Sample locations are shown on Figure 2 (Appendix A)
- Surface soil samples were analysed for heavy metals [arsenic (As), cadmium (Cd), chromium (Cr), copper (Cu), lead (Pb), Nickel (Ni), Zinc (Zn) and mercury (Hg)], total petroleum hydrocarbons / total recoverable hydrocarbons (TPH/TRH), benzene (B), toluene (T), ethyl-benzene (E), xylenes (X) and naphthalene (N), polycyclic aromatic hydrocarbons (PAHs) and phenol
- Analytical results were compared against both ASC NEPM recreational / public open space (continued onsite use) and IB105 (offsite disposal) criteria
- Exceedances of adopted ASC NEPM criteria were reported for:
 - BaP – one location exceeded the ASC NEPM Health Investigation Level (HIL) for recreational / open space land use
 - Zn – two locations exceeded the ASC NEPM Ecological Investigation Level (EIL) for recreational / open space land use
- All other results were within adopted ASC NEPM human health and ecological criteria for recreational / open space land use; phenol concentrations were below the laboratory LOR in all samples
- A preliminary conceptual site model (CSM) was developed and indicated that contamination is present in soils of the embankment which has the potential to present a human health and ecological risk based on the proposed retaining wall works; the risk to each of the identified receptors was assessed as follows:
 - Risk to construction workers – workers engaged in future construction activities may potentially be exposed to contaminants in soils during excavation

- 
- Risk to Site users – controls will need to be in place during excavation works to ensure that Site users are not exposed to potentially contaminated dust
 - Risk to ecological receptors – contaminants in soils have the potential to contaminate surface water (Providence Rivulet) if not managed during disturbance
 - Based on total concentrations only (i.e. no leachability testing was undertaken), sampled soils would be classified under IB105 as a combination of the following for offsite disposal:
 - Level 2 – low-level contaminated soil – based on Pb, Zn and TPH (C₁₀-C₃₆ fraction) concentrations
 - Level 3 – contaminated soil – based on BaP and total PAH concentrations
 - It was recommended that:
 - Further assessment of soils be undertaken to delineate the identified contamination and ensure ongoing Site users are not at risk
 - Controls be put in place during excavation works to mitigate the risks to excavation workers, Site users and the Providence Rivulet during construction of the proposed retaining wall (Construction Environmental Management Plan, CEMP); and
 - Excavated soils be stockpiled and retested to confirm waste classification and disposal requirements.


3.4 Hobart City Council

A request for information pertaining to the potential for contamination at the Property and at surrounding properties was submitted to HCC as a component of the Preliminary ESA (pitt&sherry, 2020).

HCC details are provided in Table 6. Where there is potential for the activity to impact on the Property from a contamination perspective, this is identified in **red text**.

Table 5: HCC details of potentially contaminated premises / contaminating activities in the vicinity of the Property

Address	Potentially Contaminating Activity	Distance from Property	Potential to impact on the Property
321-323A Elizabeth Street, North Hobart	<ul style="list-style-type: none"> None recorded 	Property	Possible due to: <ul style="list-style-type: none"> Previous onsite uses (Table 4) – motor cars & trucks (used) and upholsterers Detection of BaP and Zn above ASC NEPM criteria in surface soils at the Site (Section 3.3.1)
315 Elizabeth Street, North Hobart	<ul style="list-style-type: none"> Previously used as a fuel supplier Listed as Mooney & Bower, 1916 [not recorded in Table 4] 	Approximately 10 m south-east of the Property	Possible due to: <ul style="list-style-type: none"> Adjacent to the Property Potential storage of fuel in UPSS; unknown decommissioning details Slightly higher elevation than the Property Expected direction of surface water and groundwater flow is likely to be towards the Property and Providence Rivulet (north)



Address	Potentially Contaminating Activity	Distance from Property	Potential to impact on the Property
317 Elizabeth Street, North Hobart	<ul style="list-style-type: none"> Previously used as a service station and fuel supply Listed under G. Lincoln, 1948 [consistent with Table 4]	Adjacent to south-eastern Property boundary	Possible due to: <ul style="list-style-type: none"> Adjacent to the Property Potential storage of fuel in UPSS; unknown decommissioning details Slightly higher elevation than the Property Expected direction of surface water and groundwater flow is likely to be towards the Property and Providence Rivulet (north)
20 Lefroy Street, North Hobart [now 16A Lefroy Street]	<ul style="list-style-type: none"> Previously used as a garage Listed under Abel Tasman Transport, 1971 [not recorded in Table 4] [consistent with Table 7 – decommissioned UPSS]	Adjacent to northern Property boundary	Possible due to: <ul style="list-style-type: none"> Adjacent to the Property Potential storage of fuel in UPSS; unknown decommissioning details Expected direction of surface water and groundwater flow is likely to be towards the Property and Providence Rivulet (south-east)
14 Lefroy Street, North Hobart	<ul style="list-style-type: none"> Noted as potentially contaminated land (use unknown) No details provided by HCC [previously used as a motor garage &/or engineers &/or service stations – refer to Table 4]	Approximately 10 m north of the Property	Unlikely due to: <ul style="list-style-type: none"> Separation from the Property by Providence Rivulet Slightly lower elevation than the Property Expected direction of surface water and groundwater flow is likely to be towards Providence Rivulet (south-east)

Notes:

UPSS – underground petroleum storage system

Red text – indicates the activity has the potential to have impacted on the Property from a contamination perspective.

3.5 Environment Protection Authority

Due to changing priorities arising from the COVID-19 pandemic response, the Environment Protection Authority (EPA) Tasmania has suspended the Property Information Request (PIR) service.

The following layers on the LISTmap were inspected:

- EPA Regulated Premises – identifies the location of Level 2 regulated premises as well as potentially contaminated sites, which are currently regulated; and

- EPA Underground Petroleum Storage Systems – shows sites where EPA has received notification of the registration, temporary decommissioning or permanent decommissioning of underground petroleum storage systems (UPSS). The locations are indicative of registered UPSS, but do not necessarily represent all existing or historical UPSS.

EPA details are provided in Table 6. Where there is potential for the activity to impact on the Property from a contamination perspective, this is identified in **red text**.

Table 6: EPA details of surrounding premises

Feature	Description	Potential to impact on the Property	Information Source
EPA regulated premises	Closest EPA regulated premise (contaminated site) is the BP Service Station at 200 Brooker Highway, North Hobart, approximately 500 m to the north-east of the Property	Unlikely due to: <ul style="list-style-type: none"> Distance (500 m from Property) Elevation of the Property is at least 15 m higher than the service station Expected direction of surface water and groundwater flow is likely to be away from the Property, towards the River Derwent (east) Premise is a contaminated site (Investigation Notice 9647/1 issued 22 March 2017 in relation to LNAPL between 3.6 and 4.1 m bgl in two onsite groundwater wells) 	LISTmap – EPA regulated premises map layer LISTmap – EPA contours (5 m) layer Lotsearch Report (Appendix B)
UPSS – active	Closest registered active UPSS is approximately 290 m north of the Property at the Caltex Service Station at 353-357 Argyle Street, North Hobart	Unlikely due to: <ul style="list-style-type: none"> Distance (290 m from the Property) Elevation of the Property is slightly higher than the service station Expected direction of surface water and groundwater flow which is likely to be away from the Property towards River Derwent (east) 	LISTmap – EPA UPSS layer LISTmap – EPA contours (5 m) layer
UPSS – abandoned	There are no abandoned registered UPSS within 500 m of the Property	N/A	LISTmap – EPA UPSS layer
UPSS – permanently decommissioned	Closest permanently decommissioned registered UPSS is approximately 120 m to the south of the Property at 338 Elizabeth Street, North Hobart	Unlikely due to: <ul style="list-style-type: none"> Decommissioned nature of the UPSS Distance (120 m from the Property) Elevation of the Property is similar to that of the UPSS Expected direction of surface water and groundwater flow which is likely to be towards the River Derwent (north-east) 	LISTmap – EPA UPSS layer LISTmap – EPA contours (5 m) layer

Notes:

UPSS – underground petroleum storage system(s)

LNAPL = light non-aqueous phase liquid



3.6 WorkSafe Tasmania


A request for information pertaining to the storage of dangerous goods at the Property and at surrounding properties was submitted to WorkSafe Tasmania (WST) on 28 September 2021 as a component of this ESA. A copy of the correspondence received is provided in Appendix D.

WST details for the Property and surrounding premises are provided in Table 7. Where there is potential for the activity to impact on the Property from a contamination perspective, this is identified in **red text**.

Table 7: WST details for the Property and surrounding premises

Premise Name	Address	Details	WST File ID
Property			
Culinary King Indian Restaurant	321 Elizabeth Street, Hobart [now 321-323A Elizabeth Street, North Hobart]	<ul style="list-style-type: none"> File has records from 1987 to 1994 Restaurant since 1987 Storage of liquefied petroleum gas (LPG) only Owner – T & F Papatriantafillos [potential for historical uses to impact the Property – refer to Table 4 and Section 3.3.1] 	0023
Surrounding Premises			
Office / residential [former BP North Hobart]	283 Elizabeth Street, North Hobart [now part of 285 Elizabeth Street]	<ul style="list-style-type: none"> File has records from 1961 to 2011 Statutory Declaration confirms decommissioning of the UPSS in 2011 <p>Potential to have impacted the Property – unlikely due to:</p> <ul style="list-style-type: none"> Distance (approximately 180 m from the Property) Elevation of the Property is slightly higher than the former service station Decommissioned nature of the UPSS (LISTmap) Expected direction of surface water and groundwater flow which is likely to be towards River Derwent (north-east) 	2296

Premise Name	Address	Details	WST File ID
Saigon District Restaurant (residential upstairs)	285 Elizabeth Street, North Hobart	<ul style="list-style-type: none"> File has records from 1954 to 1972 Storage of fuel in 1 x 1 x 1,000 gallon UPSS Approval for storage of distillate in 1 x 2,000 gallon UPSS & motor spirit in 1 x 3,000 gallon UPSS Donald Gorrige Pty Ltd [reconditioning and spare parts], formerly Frank Hammond Pty Ltd [goods transport] <p>Potential to have impacted the Property – unlikely due to:</p> <ul style="list-style-type: none"> Distance (approximately 180 m from the Property) Elevation of the Property is slightly higher than the former service station Decommissioned nature of the UPSS (LISTmap) Expected direction of surface water and groundwater flow which is likely to be towards the River Derwent (north-east) 	G327 (Mines File)
Boodle Beasley Bar	315 Elizabeth Street, North Hobart	<ul style="list-style-type: none"> File has records from 1999 to 2011 Formerly a restaurant (La Porchetta) Storage of LPG only Owner – Veneziano Enterprises Pty Ltd <p>[no mention of Mooney & Bower – refer to Table 5]</p> <p>[potential for historical uses to have impacted the Property – refer to Table 5]</p>	3771
Not provided	317 Elizabeth Street, North Hobart	<ul style="list-style-type: none"> No file held by WST <p>[potential for historical uses to have impacted the Property – refer to Table 4 and Table 5]</p>	-
Not provided	325 Elizabeth Street, North Hobart	<ul style="list-style-type: none"> No file held by WST <p>Potential to have impacted the Property is unlikely due to no known storage of dangerous goods</p>	-



Premise Name	Address	Details	WST File ID
Room for a Pony Café / Bar [former Ampol Service Station]	338 Elizabeth Street, North Hobart	<ul style="list-style-type: none"> File has records from 1955 to 2013 Former Ampol Service Station and then Windscreens O'Brien Statutory Declaration confirms removal of a 2 kL UPSS on 25 July 2013 <p>Potential to have impacted the Property – unlikely due to:</p> <ul style="list-style-type: none"> Decommissioned nature of the UPSS Distance (120 m from the Property) Elevation of the Property is similar to that of the UPSS Expected direction of surface water and groundwater flow which is likely to towards the River Derwent (north-east) 	A106 (Mines File)
HCC Car Park	16 Lefroy Street, North Hobart (20 Lefroy Street in Table 5) [now 16A Lefroy Street]	<ul style="list-style-type: none"> File has records from 1971 to 1973 Owned by Ampol Petroleum and formerly operated by Abel Tasman Transport [consistent with Table 5] Storage of fuel in 1 x 1,000 gallon UPSS Extract from EPA Register notes – tank was removed and site remediated according to the remediation and validation report (date unknown); names associated with the site include Abel Tasman Transport and Ampol <p>Potential to have impacted the Property – possible due to:</p> <ul style="list-style-type: none"> Expected direction of surface water and groundwater flow is likely to be towards the Property and Providence Rivulet (south-east) 	A241 (Mines File)

Notes:

UPSS – underground petroleum storage system(s)

Red text – indicates the activity has the potential to have impacted on the Property from a contamination perspective.


3.7 Surrounding potentially contaminated land uses

Potentially contaminating surrounding current and/or historical land uses are summarised in Table 8. Information was sourced from the Lotsearch Report in Appendix B unless otherwise referenced. Where there is potential for the activity to impact on the Property from a contamination perspective, this is identified in red text.




Table 8: Surrounding potentially contaminating land uses


Activity	Description	Potentially contaminating activities	Potential to impact on the Property
National waste management facility	No records within 1 km buffer	N/A	No
National liquid fuel facilities / service stations	Closest operational service station is approximately 275 m to the north at 353-357 Argyle Street, North Hobart (United) (the LISTmap)	<ul style="list-style-type: none"> Storage of fuel in UPSS 	Unlikely due to: <ul style="list-style-type: none"> Distance (275 m from the Property) Elevation of the Property is similar to that of the service station Expected direction of surface water and groundwater flow which is likely to be away from the Property towards River Derwent (north-east)
Airservices Australia national PFAS management program	No records within 1 km buffer	N/A	No
Defence 3 year regional contamination investigation program	Anglesea Barracks, approximately 1.7 km to the south-east east at 96-120 Davey Street, Hobart [consistent with the LISTmap]	<ul style="list-style-type: none"> Use of firefighting training areas Historical storage of aqueous film forming foam Fuel storage and distribution from UPSS (known leakage from UPSS resulting in contaminated soil and groundwater under part of the site) Waste storage and disposal (including photographic waste) Vehicle washdown and associated waste oil separators 	Unlikely due to: <ul style="list-style-type: none"> Distance (1.7 km from the Property) Similar elevation Expected direction of surface water and groundwater flow is likely to be towards the Hobart Rivulet (north-west) Premises is an EPA-regulated contaminated site
Defence land	Anglesea Barracks, approximately 1.7 km to the south-east east at 96-120 Davey Street, Hobart [consistent with the LISTmap] Base established in 1814 (Department of Defence)		



Activity	Description	Potentially contaminating activities	Potential to impact on the Property
Motor garages and/or service stations and/or engineers (within 150m of the Property)	Mcgregor's Auto Sales / O.K. Cars (1960, 1971 & 1984) and G.J Lincoln (1950), adjacent to the south-east at 317 Elizabeth Street, North Hobart (Table 4 & Table 5)	<ul style="list-style-type: none"> Fuel storage Waste oil Vehicle washdown 	<p>Possible due to:</p> <ul style="list-style-type: none"> Potential storage of fuel in UPSS; unknown decommissioning details Expected direction of surface water and groundwater flow is likely to be towards the Property and Providence Rivulet (north)
	Modern Auto Wreckers (1984) and Hec. Smith & Sons (1971 & 1984), adjacent to the north-east at 45A Burnett Street, North Hobart (Table 4)	<ul style="list-style-type: none"> Fuel storage Waste oil 	<p>Possible due to:</p> <ul style="list-style-type: none"> Potential storage of fuel and/or waste oil Similar elevation to the Property Expected direction of surface water and groundwater flow is likely to be towards the Providence Rivulet (north)
	Abel Tasman Transport (1971), adjacent to the north at 16A Lefroy Street, North Hobart (Table 5 & Table 7)	<ul style="list-style-type: none"> Storage of fuel in UPSS Waste oil Vehicle washdown 	<p>Possible due to:</p> <ul style="list-style-type: none"> Expected direction of surface water and groundwater flow is likely to be towards the Property and Providence Rivulet (south-east)
	Barry Cooper Auto Repairs Pty Ltd (1971 & 1984), approximately 10 m to the north at 14 Lefroy Street, North Hobart (Table 4)	<ul style="list-style-type: none"> Fuel storage Waste oil Vehicle washdown 	<p>Unlikely due to:</p> <ul style="list-style-type: none"> Separation from the Property by Providence Rivulet Slightly lower elevation than the Property Expected direction of surface water and groundwater flow is likely to be towards Providence Rivulet (south-east)



Activity	Description	Potentially contaminating activities	Potential to impact on the Property
	Mooney & Bower (1916), approximately 10 m to the south-east at 315 Elizabeth Street, North Hobart (Table 5)	<ul style="list-style-type: none"> Fuel storage 	<p>Possible due to:</p> <ul style="list-style-type: none"> Potential storage of fuel in UPSS; unknown decommissioning details Slightly higher elevation than the Property Expected direction of surface water and groundwater flow is likely to be towards the Property and Providence Rivulet (north)
	P.G. Klann (1960 & 1971), approximately 40 m to the north at 10 Lefroy Street, North Hobart (Table 4)	<ul style="list-style-type: none"> Fuel storage Waste oil Vehicle washdown 	<p>Unlikely due to:</p> <ul style="list-style-type: none"> Separation from the Property by Providence Rivulet Slightly lower elevation than the Property Expected direction of surface water and groundwater flow is likely to be towards Providence Rivulet (south)
	Tony Barrett Auto Electrician / Millington Autos (1984), approximately 45 m to the east at 45 Burnett Street, North Hobart (Table 4)	<ul style="list-style-type: none"> Fuel storage Waste oil Vehicle washdown 	<p>Unlikely due to:</p> <ul style="list-style-type: none"> Slightly lower elevation than the Property Expected direction of surface water and groundwater flow is likely to be towards Providence Rivulet (north)
	W. Wallace Junior (1950 & 1960) at least 150 m to the north-east, now part of 3 Alberry Avenue to 313-321 Argyle Street (Soundy Park) (Table 4)	<ul style="list-style-type: none"> Fuel storage 	<p>Unlikely due to:</p> <ul style="list-style-type: none"> Distance (at least 150 m from the Property) Elevation of the Property is at least 10 m higher than the site Expected direction of surface water and groundwater flow which is likely to be towards River Derwent (north-east)



Activity	Description	Potentially contaminating activities	Potential to impact on the Property
	BP Service Station (1984 & 1991), approximately 95 m to the north-east at 290 Argyle Street, North Hobart (Lotsearch)	<ul style="list-style-type: none"> Storage of fuel in UPSS Waste oil Vehicle washdown 	Unlikely due to: <ul style="list-style-type: none"> Separation from the Property by Providence Rivulet Slightly lower elevation than the Property Expected direction of surface water and groundwater flow is likely to be towards Providence Rivulet (south)
	Ampol Service Station (1955-2013), approximately 120 m south at 338 Elizabeth Street, North Hobart (Table 7)	<ul style="list-style-type: none"> Storage of fuel in UPSS Former storage of fuel in UPSS Waste oil Vehicle washdown 	Unlikely due to: <ul style="list-style-type: none"> Decommissioned nature of the UPSS Distance (120 m from the Property) Elevation of the Property is similar to that of the UPSS Expected direction of surface water and groundwater flow which is likely to be towards the River Derwent (north-east)
Dry cleaners, dyers, and pressers (within 150m of the Property)	Blue Bell Services (1991), approximately 30 m to the west at 370 Elizabeth Street, North Hobart (Lotsearch)	<ul style="list-style-type: none"> Perchloroethylene – solvent & waste 	Unlikely due to: <ul style="list-style-type: none"> Agents only (not dry cleaners) Elevation of the Property is lower than the site Expected direction of surface water and groundwater flow is likely to be towards Providence Rivulet (north-east)
	North Hobart Dry Cleaners (1991), approximately 120m to the north-west at 359 Elizabeth Street, North Hobart (Lotsearch)	<ul style="list-style-type: none"> Perchloroethylene – solvent & waste 	Unlikely due to: <ul style="list-style-type: none"> Distance (120 m from the Property) Expected direction of surface water and groundwater flow which is likely to be towards Providence Rivulet (south-east)

Notes:

UPSS – underground petroleum storage system(s)

PFAS – per- and polyfluoroalkyl substances

Red text – indicates the activity has the potential to have impacted on the Property from a contamination perspective.



3.8 Historical aerial imagery

Historical aerial imagery in the vicinity of the Property from 1946 to 2021, together with a historical map from circa 1942, are provided in the Lotsearch Report in Appendix B.


A summary of review findings for the Property and immediate surrounds, with a focus on those identified to have contained potentially contaminating activities, is provided in Table 9. Where there is potential for the activity to impact on the Property from a contamination perspective, this is identified in **red text**.

Notable information includes:


- The Property was developed by 1946:
- Elizabeth Street:
 - 285 – site was developed by 1946 and was a service station by 1967 until at least 2005 (consistent with Table 7)
 - 275-277, 307-311A, 315, 317 & 370-374 – sites were developed by 1946
 - 338 – site was developed as a service station by 1957 until at least 2013 (consistent with Table 7 and Table 8)
- Lefroy Street:
 - 8, 10, 12, 14 & 16A – sites were developed by 1946
- Burnett Street:
 - 45, 45A & 47-51 – sites were developed by 1946
- Argyle Street:
 - 290-296 – site was developed by 1946 and was a service station by 1967 until at least 1997 (consistent with Lotsearch Report)

Table 9: Historical aerial imagery review


Aerial Image Date	Description of the Property	Description of Surrounds
Circa 1942	Historical map shows: <ul style="list-style-type: none"> • Property within a developed area 	Historical map shows: <ul style="list-style-type: none"> • Surrounding land within a developed area
1946	<ul style="list-style-type: none"> • Poor resolution • Some form of development on the street frontage of the Property and the northern extent • Open area at rear • Trees along Providence Rivulet at the rear 	Elizabeth Street: <ul style="list-style-type: none"> • 285 – buildings visible; site appears to be sealed • 275-277 – building visible; appears to cover entire site • 307-311A – building visible on street frontage; trees at rear • 315 – building visible on street frontage; trees at rear • 317 – building visible on street frontage; open area at rear • 338 – open vegetated area; trees visible • 358 – laydown type area visible • 360-362 – laydown type area visible • 370-374 – buildings visible Lefroy Street: <ul style="list-style-type: none"> • 8, 10, 12, 14 & 16A – building visible on street frontage; open area at rear



Aerial Image Date	Description of the Property	Description of Surrounds
		<p>Burnett Street:</p> <ul style="list-style-type: none"> 45 – buildings visible 45A – largely open space; buildings on Lefroy Street frontage 47-51 – buildings visible on street frontage; open space at rear <p>Argyle Street:</p> <ul style="list-style-type: none"> 290-296 – buildings visible on street frontage
1957	<ul style="list-style-type: none"> No significant change 	<p>Elizabeth Street:</p> <ul style="list-style-type: none"> 285 – buildings visible; sealed driveway 275-277, 307-311A & 315 – no significant change 317 – open area with no buildings; car parking on unsealed ground 338 – buildings present (potentially a service station) 358 & 360-362 – building on street frontage; laydown type area at rear 370-374 – buildings visible <p>Lefroy Street:</p> <ul style="list-style-type: none"> 8, 10, 12, 14 & 16A – no significant change <p>Burnett Street:</p> <ul style="list-style-type: none"> 45 – buildings visible on street frontage; laydown area / shed at rear 45A & 45B – no significant change 47-51 – building length of eastern half; open space western half <p>Argyle Street:</p> <ul style="list-style-type: none"> 290-296 – no significant change
1967	<ul style="list-style-type: none"> No significant change 	<p>Elizabeth Street:</p> <ul style="list-style-type: none"> 285 – service station present 275-277 & 307-311A – no significant change 315 – shed/structure halfway along northern boundary; car parking on unsealed ground; potentially stained soil visible at the rear 317 – no significant change; potentially stained soil visible at the rear 338 – service station present 358, 360-362 & 370-374 – no significant change <p>Lefroy Street:</p> <ul style="list-style-type: none"> 8, 10, 12 & 14 – no significant change 16A – building remains on Lefroy Street frontage; remainder of property cleared and appears to be bitumen; car parking <p>Burnett Street:</p> <ul style="list-style-type: none"> 45 – no significant change 45A – building at rear of Lefroy Street frontage; building in large otherwise open area 47-51 – site covered with warehouse / building



Aerial Image Date	Description of the Property	Description of Surrounds
		Argyle Street: <ul style="list-style-type: none"> 290-296 – service station present
1977	<ul style="list-style-type: none"> No significant change to buildings Cars present in rear of Property 	<p>Elizabeth Street:</p> <ul style="list-style-type: none"> 285 – no significant change 275-277, 315, 358 & 370-374 – no significant change 307-311A – more trees at rear; potentially stained soil 317 – no significant change; larger trees 338 – no significant change 360-362 – building demolished; vacant driveway access <p>Lefroy Street:</p> <ul style="list-style-type: none"> 8 – no significant change 10 & 14 – rear of sites cleared; cars visible 12 – building at rear; cars visible 16A – building removed; property cleared and appears to be bitumen; car parking <p>Burnett Street:</p> <ul style="list-style-type: none"> 45 – building on street frontage demolished; structure in centre of site; some cars visible 45A – no change to buildings; cars present in open areas 47-51 – no significant change <p>Argyle Street:</p> <ul style="list-style-type: none"> 290-296 – no significant change
1986	<ul style="list-style-type: none"> No significant change 	<p>Elizabeth Street:</p> <ul style="list-style-type: none"> 285 & 338 – no significant change 275-277, 307-311A, 315, 358 & 370-374 – no significant change 317 – buildings present; open area at rear 360-362 – open area <p>Lefroy Street:</p> <ul style="list-style-type: none"> 8, 10, 14 & 16A – no significant change 12 – building at rear <p>Burnett Street:</p> <ul style="list-style-type: none"> 45 & 47-51 – no significant change 45A – no significant change; more cars present <p>Argyle Street:</p> <ul style="list-style-type: none"> 290-296 – no significant change
1997	<ul style="list-style-type: none"> No significant change Area at the rear used for car parking 	<p>Elizabeth Street:</p> <ul style="list-style-type: none"> 285 & 338 – no significant change 275-277, 307-311A, 315, 317, 358 & 370-374 – no significant change 360-362 – redeveloped; building covering site



Aerial Image Date	Description of the Property	Description of Surrounds
		<p>Lefroy Street:</p> <ul style="list-style-type: none"> 8, 10, 12 & 14 – no significant change; more tidy 16A – improvements to car park <p>Burnett Street:</p> <ul style="list-style-type: none"> 45 – building extended towards the street; sealed surface throughout; car parking at rear 45A – property redeveloped; possible townhouses; surface is sealed 47-51 – no significant change <p>Argyle Street:</p> <ul style="list-style-type: none"> 290-296 – no significant change
2005	<ul style="list-style-type: none"> Building in the rear of the Property Area at the rear used for car parking Area behind the buildings on the Elizabeth Street frontage appears to be bitumen (previously unsealed) 	<p>Elizabeth Street:</p> <ul style="list-style-type: none"> 285 – no significant change; additional car storage to north 275-277, 307-311A, 315, 317, 358, 360-362 & 370-374 – no significant change 338 – no significant change <p>Lefroy Street:</p> <ul style="list-style-type: none"> 8, 10, 12, 14 & 16A – no significant change <p>Burnett Street:</p> <ul style="list-style-type: none"> 45, 45A & 47-51 – no significant change <p>Argyle Street:</p> <ul style="list-style-type: none"> 290-296 – canopy demolished; appears to be caryard
2013	<ul style="list-style-type: none"> Building at the rear of the Property removed Remnant structure (red brick?) at rear Area at the rear used for car parking 	<p>Elizabeth Street:</p> <ul style="list-style-type: none"> 285 – service station removed; redevelopment progressing 275-277, 307-311A, 315, 317, 358, 360-362 & 370-374 – no significant change 338 – no significant change <p>Lefroy Street:</p> <ul style="list-style-type: none"> 8, 10, 12, 14 & 16A – no significant change <p>Burnett Street:</p> <ul style="list-style-type: none"> 45, 45A & 47-51 – no significant change <p>Argyle Street:</p> <ul style="list-style-type: none"> 290-296 – no significant change
2016	<ul style="list-style-type: none"> Remnant building at the rear of the Property removed 	<p>Elizabeth Street:</p> <ul style="list-style-type: none"> 285 – development complete 275-277, 307-311A, 315, 317, 358, 360-362 & 370-374 – no significant change 338 – appears to no longer be used as a service station; laydown / storage area

Aerial Image Date	Description of the Property	Description of Surrounds
	<ul style="list-style-type: none"> No other significant change 	Lefroy Street: <ul style="list-style-type: none"> 8, 10, 12, 14 & 16A – no significant change
		Burnett Street: <ul style="list-style-type: none"> 45, 45A & 47-51 – no significant change
		Argyle Street: <ul style="list-style-type: none"> 290-296 – no significant change
2021	<ul style="list-style-type: none"> No significant change 	Elizabeth Street: <ul style="list-style-type: none"> 285, 275-277, 307-311A, 317, 360-362 & 370-374 – no significant change 315 – building on Elizabeth Street frontage; remains open at rear 338 – buildings remain; more grass present 358 – tree removed; rear of property sealed
		Lefroy Street: <ul style="list-style-type: none"> 8, 10, 12, 14 & 16A – no significant change
		Burnett Street: <ul style="list-style-type: none"> 45, 45A & 47-51 – no significant change
		Argyle Street: <ul style="list-style-type: none"> 290-296 – appears vacant

Notes:

Red text – indicates the activity has the potential to have impacted on the Property from a contamination perspective.

3.9 Natural values

Based on a preliminary desktop assessment of potential natural values assessment (Section 2.2), the proposed development of the Site, and more specifically development in the vicinity of Providence Rivulet, is unlikely to have an unnecessary or unacceptable impact on identified natural values given that:

- There are no GDEs or IDEs within 1 km of the Property (Table 2)
- No ASS have been documented within 500 m of the Property (Table 2)
- Only one threatened flora species has been mapped or recorded within 500 m of the Property; none have been mapped or recorded within the Property (Table 2)
- The Property is within modified land urban areas (FUR) (Table 2)
- No threatened vegetation communities have been mapped or recorded within 500 m of the Property (Table 2)
- No Priority Weeds have been reported within 500 m of the Property (Table 2)
- Weeds are present throughout the Site including blackberry and gorse (declared weeds) (Section 3.10); and
- Fill material is likely to have been imported to Site to level the area adjacent to Providence Rivulet; concrete, broken bricks, sand and gravel were noted (Section 3.10).

Note that no natural values survey has been carried out and the natural values within Providence Rivulet are not known.



3.10 Property inspection

pitt&sherry staff visited the Site on 5 October 2021. An investigation checklist was completed and is attached in Appendix E. Photographs of the Site visit are provided in Appendix F.

A summary of key inspection findings for the Site and immediate surrounds is provided below:

- Current use of the Site is for car parking; unsealed surface; potential for leaking fuels, oils, coolants, etc.
- Surrounding land uses include residential, commercial (restaurants, hairdressers, brewery) and car parking
- Weeds are present throughout the Site including blackberry and gorse (declared weeds); poor visibility in some areas; litter present
- Topography of the Site is similar to the surrounding area with a gentle slope towards the east
- Fill material is likely to have been imported to Site to level the area adjacent to Providence Rivulet; concrete, broken bricks, sand and gravel were noted; the profile may include asbestos containing material (ACM), although none was noted during the site visit or during test pitting
- Dumped concrete was noted in the south-western corner, a sand pile in east and gravel in the north-west of the Site; it is possible that other dumping has occurred such as oils and fuels, other wastes, etc.
- No erosion of the gravel surface was noted; large boulders against Providence Rivulet and the retaining wall and grass appear to be preventing erosion of the gravel surface
- The water in Providence Rivulet appeared to be slightly cloudy and yellow; some algae was noted
- A strong, unidentified odour was observed adjacent to the Providence Rivulet culvert
- Shed (likely timber frame and no slab) present within the Site will be demolished as part of the redevelopment
- A TasWater sewer main bisects the Site, located by air vents; and
- There appears to be a possible interceptor trap installed at rear of the brewery at 315 Elizabeth Street, North Hobart

3.11 Anecdotal evidence / interviews

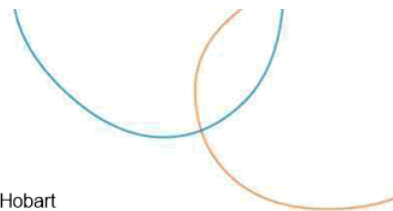
No anecdotal evidence was collected, and no interviews were undertaken as part of this ESA.

3.12 Integrity assessment

In order to confirm the findings, cross-referencing between the different information sources (i.e. documentation and Property observations) has been completed as far as practicable and the information presented within this report is considered to be generally correct.

The following observations should be noted:

- Inconsistency in street addresses between different datasets (e.g. 321 Elizabeth Street, North Hobart (WST), 321-323A Elizabeth Street, North Hobart (LISTmap))
- Changes in street addresses over time and between different datasets:
 - 16 Lefroy Street, North Hobart is now part of 45A Burnett Street, North Hobart
 - 18 Lefroy Street, North Hobart is now part of 45A Burnett Street, North Hobart
 - 20 Lefroy Street, North Hobart is now 16A Lefroy Street, North Hobart
 - 283 Elizabeth Street, North Hobart is now part of 285 Elizabeth Street, North Hobart



- 321 Elizabeth Street, North Hobart is now 321-323A Elizabeth Street, North Hobart
- 17 Burnett Street North Hobart is now part of 3 Alberry Avenue to 313-321 Argyle Street (Soundy Park)
- Inconsistency in listing of a property as potentially contaminated (e.g. 315 Elizabeth Street, North Hobart is listed as potentially contaminating by HCC but there is no record of potentially contaminating activities at WST)
- Whether all former UPSS have been removed from a site (e.g. 16 A Lefroy Street, North Hobart)
- Uncertainty as to whether fuel was stored in UPSS at the following locations:
 - Former fuel supplier at 315 Elizabeth Street, North Hobart
 - Former fuel merchant / car / truck dealers at 317 Elizabeth Street, North Hobart
 - Former motor garage and engineers at 10 Lefroy Street, North Hobart
 - Former carriers / cartage contractors at 12 Lefroy Street, North Hobart
 - Former motor garage / engineers / service station at 14 Lefroy Street, North Hobart
 - Former fuel merchant at 17 Burnett Street, North Hobart
 - Former garage / engineers / service station at 45 Burnett Street, North Hobart
 - Former auto wreckers / motor body builders at 45A Burnett Street, North Hobart
- Uncertainty as to if/when all former UPSS at the following locations were decommissioned and details of any decommissioning:
 - Former fuel merchant at 317 Elizabeth Street, North Hobart
 - Former Ampol Service Station at 338 Elizabeth Street, North Hobart
 - Former garage at 16A Lefroy Street, North Hobart
- The Property boundary changed since commissioning Lotsearch; this change does not impact the Lotsearch findings given the buffers provided; and
- Currency of some datasets (e.g. the National Liquid Fuel Facilities data currency is 25/07/2011 (Lotsearch)), while the Points of Interest data currency is 19/08/2021 (LISTmap), resulting in inconsistencies between some datasets (e.g. National Liquid Fuel Facilities and Service Station datasets).



4. Identified potential contamination

4.1 Sources of potential contamination


Potential sources of contamination on the Property are likely to relate to:

- Former onsite activities including sale of used motor cars and trucks or upholsters in 1960 (Table 4)
- Presence of fill material containing concrete, broken bricks, sand and gravel; may include ACM, although none was noted (Site inspection and test pitting)
- Presence of a TasWater sewer main beneath the Property (LISTmap); and/or
- Historical surrounding land uses are summarised in Table 10. Where there is potential for the activity to impact on the Property from a contamination perspective, this is identified by **blue shading**. No shading indicates the activity has been previously dismissed in Section 3 as being unlikely to impact on the Property.


The properties where potentially contaminating activities have occurred are shown on Figure 1 (Appendix A).

Table 10: Historical surrounding potentially contaminating land uses

Address	Distance from Property	Elevation in Relation to the Property	Details
Elizabeth Street, North Hobart			
285	Approximately 180 m to the south-east	Slightly lower elevation than the Property	<ul style="list-style-type: none"> • Former BP North Hobart from 1961 to 2011; Statutory Declaration confirms decommissioning of the UPSS in 2011; address was 283 Elizabeth Street (Table 7) • Storage of fuel in 1 x 1 x 1,000 gallon UPSS; approval for storage of distillate in 1 x 2,000 gallon UPSS & motor spirit in 1 x 3,000 gallon UPSS (Table 7) • Service station by 1967 until at least 2005 (Table 9)
307-311A	Approximately 35 m to the south-east	Similar elevation to the Property	<ul style="list-style-type: none"> • Upholsterers in 1950 (Table 4)
315	Approximately 10 m south-east of the Property	Slightly higher elevation than the Property	<ul style="list-style-type: none"> • Fuel supplier in 1916 (Table 5)
317	Adjacent to the south-east	Slightly higher elevation than the Property	<ul style="list-style-type: none"> • New / used motor car / truck dealers in 1960, 1971 & 1984 (Table 4) • Fuel and ice merchant in 1950 (Table 4) • Service station and fuel supply in 1940 (Table 5) • Cars / trucks (Table 9)



Address	Distance from Property	Elevation in Relation to the Property	Details
338	Approximately 120 m to the south	Similar elevation to the Property	<ul style="list-style-type: none"> Permanently decommissioned registered UPSS (Table 6) Former Ampol Service Station from 1955 to 2013; Statutory Declaration confirms removal of 1 x 2 kL UPSS in 2013 (Table 7) Former Ampol Service Station (Table 8) Service station by 1957 until at least 2013 (Table 9)
358	Approximately 20 m to the south-west	Higher elevation (5 m) than the Property	<ul style="list-style-type: none"> Scrap metal merchants in 1950 (Table 4) Laydown area (Table 9)
359	Approximately 120m to the north-west	Slightly higher elevation than the Property	<ul style="list-style-type: none"> Dry cleaners in 1991 (Table 8)
360-362	Approximately 20 m to the north	Higher elevation (5 m) than the Property	<ul style="list-style-type: none"> Printers in 1960 (Table 4)
370-374	Approximately 30 m to the west	Slightly higher elevation than the Property	<ul style="list-style-type: none"> Agents for dry cleaners in 1960 (Table 4 and Table 8)
Lefroy Street, North Hobart			
10	Approximately 40 m to the north	Slightly lower elevation than the Property	<ul style="list-style-type: none"> Motor garage and engineers in 1961 & 1970 (Table 4)
12	Approximately 25 m to the north	Slightly lower elevation than the Property	<ul style="list-style-type: none"> Carriers / cartage contractors in 1984 (Table 4)
14	Approximately 10 m to the north	Slightly lower elevation than the Property	<ul style="list-style-type: none"> Motor garage / engineers / service station in 1971 & 1984 (Table 4)
16A	Adjacent to northern Property boundary	Similar elevation to the Property	<ul style="list-style-type: none"> Garage in 1971 (Table 5) Abel Tasman Transport from 1971 to 1973; storage of fuel in 1 x 1,000 gallon UPSS; site remediated according to the remediation and validation report (date unknown) (Table 7)
Burnett Street, North Hobart			
17 (no longer exists)	At least 150 m to the north-east [now part of 3 Alberry Avenue to 313-321 Argyle Street (Soundy Park)]	Higher elevation (10 m) than the Property	<ul style="list-style-type: none"> Fuel and ice merchants in 1950 & 1960 (Table 4)



Address	Distance from Property	Elevation in Relation to the Property	Details
45	Approximately 45 m to the east	Slightly lower elevation than the Property	<ul style="list-style-type: none"> Motor garage / engineers / service station / motor electricians in 1984 (Table 4)
45A	Adjacent to the north-east	Similar elevation to the Property	<ul style="list-style-type: none"> Auto wreckers in 1984 (Table 4) Motor body builders / repairers; engineers; welders in 1971 & 1984 (Table 4) Cars present from 1977 to 1986 (Table 9)
47-51	Approximately 50 m to the east	Slightly lower elevation than the Property	<ul style="list-style-type: none"> Paint enamel varnish / stain manufacturers / importers / distributors in 1991 (Table 4) Manufacturers agents in 1991 (Table 4)
Argyle Street, North Hobart			
290-296	Approximately 95 m to the north-east	Slightly lower elevation than the Property	<ul style="list-style-type: none"> BP Service Station in 1984 & 1991 (Lotsearch) Service station by 1967 until at least 1997 (Table 9)

Notes:

Blue shading – indicates the activity has the potential to have impacted on the Property from a contamination perspective.

4.2 Contaminants of potential concern

Based on the identified potentially contaminating activities on or in the immediate vicinity of the Property, contaminants of potential concern (CoPC) include:

- ACM from fill materials potentially containing building demolition rubble particularly along the banks of the Providence Rivulet (no suspected ACM identified to date)
- BTEXN
- Coliforms
- Heavy metals (As, Cd, Cr, Cu, Pb, Ni, Zn and Hg)
- Polycyclic aromatic hydrocarbons (PAH)
- TPH / TRH; and
- VOCs.



5. Targeted intrusive investigations

5.1 Overview

Targeted intrusive investigations by pitt&sherry as a component of this ESA have included:

- Inspection and sampling of soil in the area of the Property to be redeveloped (i.e. the Site) to the proposed maximum depth of proposed development excavations – Section 5.3; and
- Inspection and opportunistic sampling of surface water within Providence Rivulet, adjacent to the Site – Section 5.4.


pitt&sherry is also conducted a geotechnical investigation at the Property with findings to be reported separately, however the test pitting works were carried out concurrently with the ESA soil investigation.

5.2 Data quality objectives

The data quality objective (DQO) process for this ESA is summarised in Table 11.

Table 11: Summary of data quality objectives

DQO	Details
The problem	<ul style="list-style-type: none"> • Potential presence of soil contamination from the historical use of the Property and surrounding properties could be at an unacceptable level for redevelopment of the Site • Unknown preliminary waste classification of materials to be excavated during redevelopment works
Investigation questions	<p>Investigation questions for this ESA include:</p> <ul style="list-style-type: none"> • What is the current contamination status of the soil to the maximum depth of excavation (1.6 m bgl) across the Site? – refer to Section 5.7.1 and Section 6.2.1 • What is the preliminary waste classification of soils / fill material on the Site for offsite disposal? – refer to Section 5.7.2 and Section 6.2.2 • What is the current contamination status of the surface water in the adjacent Providence Rivulet? – refer to Section 5.7.3 and Section 6.2.3 • Does the level of contamination (if any) represent an unacceptable risk to human health and/or the environment under residential land use of the Site (based on zoning) and to construction workers? – refer to Section 7.6 • Do the ESA findings demonstrate that the Site is suitable for the intended use in terms of the PCLC – refer to Section 8.1 • Do the ESA findings demonstrate that Site excavation is unlikely to adversely impact on health and the environment in terms of the PCLC? – refer to Section 8.1 • Do the ESA findings demonstrate that Site excavation is unlikely to adversely impact on Providence Rivulet in terms of the WCPC? – refer to Section 8.1 • Are any management measures for excavated soil / fill material likely to be required for redevelopment of the Site? – refer to Section 8.2
Inputs to the decision	<p>Information inputs for the ESA include:</p> <ul style="list-style-type: none"> • Property history review – refer to Section 3 • Potential contamination (sources and CoPC) – refer to Section 4 • Assessment criteria – refer to Section 5.6 • Analytical data – refer to Section 5.7



DQO	Details
Boundary of the assessment	<p>Intrusive investigations were limited to:</p> <ul style="list-style-type: none"> Six test pits within the Site and sampling of soil / fill material at the locations and depths outlined in Section 5.3, noting the limitations associated with the presence of the TasWater sewer main and connections to buildings on the front portion of the Property A single water sample from Providence Rivulet as outlined in Section 5.4
Decision rules	<p>Comparison of reported concentrations of CoPC in samples against adopted guideline criteria will:</p> <ul style="list-style-type: none"> Allow the contamination status (if any) of the soil / fill material within the Site to be determined Allow the contamination status (if any) of the water within Providence Rivulet, adjacent to the Site, to be determined Allow an assessment of whether the contamination status (if any) of the soil / fill material within the Site represents an unacceptable risk to human health and/or the environment during ongoing residential use (based on zoning) and/or excavation activities Allow an assessment of whether the Site is suitable for the intended use and whether excavation may adversely impact on human health or the environment in terms of the PCLC Allow an assessment of whether excavation may adversely impact on Providence Rivulet in terms of the WPCP Identify if management measures are likely to be needed during redevelopment
Acceptable limits on decision errors	<p>Variation in data may arise from samples collected in succession from a single sampling point due to:</p> <ul style="list-style-type: none"> The potential heterogeneous nature of the soil / fill material Possible inconsistencies in contaminant dispersion Fragments of materials may bias samples in certain elements
Design for obtaining data	<p>Intrusive investigations have targeted:</p> <ul style="list-style-type: none"> The soil / fill material within the Site to the maximum depth of excavation (1.6 m bgl), noting the limitations associated with the presence of the TasWater sewer main and connections to buildings on the front portion of the Property Opportunistic sampling of surface water within Providence Rivulet after a period of rainfall

5.3 Soil / fill material investigations

Targeted intrusive soil investigations (i.e. soil / fill material sampling) were undertaken as a component of this ESA to:

- Assess the contamination status (if any) of the soil/fill materials across the Site to determine its suitability for the proposed car park redevelopment; and
- Provide a preliminary indication of the likely classification of the soil / fill for offsite disposal.

The objectives of sampling were threefold and were aimed at:

- Determining the potential human health and/or environmental risks posed by the soil / fill material across the Site to establish whether the Site is suitable for the proposed use (residential based on zoning)
- Determining the potential human health risk posed by the soil / fill material in the vicinity of the Site to excavation workers during redevelopment; and
- Providing a preliminary indication of the likely waste classification of soil / fill material which may be excavated from the Site during the proposed redevelopment works.



The sampling density was determined using Table E1 of AS 4482.1, designed for detection of hotspots of contamination, as recommended in ASC NEPM. For a Site area of approximately 1,150 m², AS 4482.1 recommends six sampling points to detect a hotspot with a diameter of 15.2 m with 95% confidence.

Test pitting was considered to be the most appropriate investigation method as it allows for adequate inspection of the profile, particularly in areas of fill, and allows for targeted sampling of the soil / fill material at each location.

There are two large TasWater stormwater pipes and a TasWater sewer main in the western part of the Site. Given this, and the uncertainty around locations of associated underground services for the buildings along the Elizabeth Street frontage of the Property, excavation works were restricted to the east of the TasWater sewer main.

Underground services were located by Archers Underground Services prior to excavations commencing. Test pit excavations were completed on 12 October 2021 and included locations labelled TP1 to TP6.

The test pit locations are shown on Figure 2 (Appendix A).

In accordance with IB105, the sampling density of homogeneous soils for offsite disposal is one sample per 25 m³. This density is not appropriate for in-situ sampling for bulk earthworks and a reduced sampling frequency was adopted to give a preliminary indication of the likely classification of the soil for offsite disposal. Additional sampling, at an increased density, may be required at the time of excavation prior to the landfill accepting the material.

In accordance with ASC NEPM practice⁴, excavated soils / fill materials were backfilled into the test pits from which they came. Materials were compacted during backfilling to minimise water ingress, erosion and subsidence.

5.4 Surface water investigations

Opportunistic intrusive investigations (i.e. surface water inspection and sampling) were undertaken as a component of this ESA to provide an indication of the current surface water quality within Providence Rivulet, adjacent to the Site.

The objective of the sampling was to provide a baseline to which the water quality within Providence Rivulet during earthworks could be compared.

The surface water sample was collected on 4 October 2021 using a long-handled sampler. Water quality parameters were recorded directly from the water body using a water quality meter (WQM). The sample to be tested for dissolved metal analysis was filtered in the field.

The surface water sample location is shown on Figure 2 (Appendix A).

The field water quality parameters are provided in Table 12, with the WQM report attached in Appendix G.

The surface water sampling field sheet is attached in Appendix H.

The calibration record for the WQM is attached in Appendix I.

⁴ Schedule B2 – Guideline on Site Characterisation, Section 15.2.6.

Table 12: Field surface water quality parameters (4 October 2021)

Item	Details – SW1
Sampling date	4/10/2021
Time	09:52
Water depth (m)	0 to 0.15
pH (pH units)	7.73
Temperature (°C)	12.22
Conductivity (µS/cm)	1,079
Rugged dissolved oxygen (mg/L)	10.35
Oxidation and reduction potential (mV)	391
Total dissolved solids (ppm)	701


5.5 Sampling methodology

Intrusive investigations (soil and surface water) were undertaken in general accordance with the guidelines and standards listed in Section 1.4.

A summary of the sampling methodology adopted for the ESA is provided in Table 13.

Table 13: Summary of sampling methodology

Activity	Details
Sampling rationale	<ul style="list-style-type: none"> Soil / fill material – refer to Section 5.3 Surface water – refer to Section 5.4
Contaminants of potential concern (CoPC)	<p>CoPC relate to the former uses of the Property and surrounding properties (Section 4.2) and include:</p> <ul style="list-style-type: none"> ACM Chemical contaminants – BTEXN, coliforms, heavy metals, PAH, TPH / TRH and VOCs
Sample containers	Samples were collected in laboratory-supplied receptacles, suitable for the CoPC to be tested, filled with minimal headspace, sealed, labelled and placed on ice in an esky
Sample collection	<ul style="list-style-type: none"> Soil / fill materials samples were: <ul style="list-style-type: none"> Collected from the excavator bucket during test pitting from the nominated depth Sampled using single-use disposable gloves into laboratory-supplied receptacles and snap-lock bags The snap-lock bag samples were screened in the field for visual and olfactory signs of contamination and for VOCs using a photo-ionisation detector (PID) The PID calibration record is provided in Appendix I The surface water sample was: <ul style="list-style-type: none"> Collected directly from Providence Rivulet using a long-handled sampler Sampled using single-use disposable gloves into laboratory-supplied receptacles The sample collected for dissolved metal analysis was filtered in the field Once filled, receptacles were placed on ice in portable chiller boxes Additional samples were collected to satisfy quality assurance / quality control (QA/QC) requirements and for ASC NEPM soil characterisation testing



Activity	Details
	<ul style="list-style-type: none"> Soil sampling information from the test pit excavations is recorded on the soil sampling field sheet (Appendix J) Surface water sampling information is recorded on the surface water field sheet (Appendix H)
Profile logging	<ul style="list-style-type: none"> The soil profile was logged during test pit excavations Test pit logs are provided in Appendix K
Photographs	Representative images are provided on the test pit logs (Appendix K) and in Appendix F
Decontamination	<p>Decontamination and cross-contamination mitigation procedures included:</p> <ul style="list-style-type: none"> Removing soil from the excavator bucket between test pits Single-use disposable nitrile gloves, changed after collection of each sample New laboratory-supplied receptacles for each sample Long-handled sampler was rinsed several times in Providence Rivulet water prior to sampling No other reusable sampling equipment was used
Samples for analysis	<p>Test pit investigations:</p> <ul style="list-style-type: none"> 20 primary soil / fill material samples, one triplicate (two samples) and one trip blank were collected, and all were analysed for selected CoPC (BTEXN, heavy metals, TRH/TPH and PAH) Six soil / fill material samples from the test pits closest to the sewer main were also tested for coliforms Soil / fill material samples were not analysed for asbestos or VOCs given the absence of any visual indication of suspected ACM and any olfactory or PID-screening evidence of VOCs <p>Surface water investigations:</p> <ul style="list-style-type: none"> One primary water sample was collected and analysed for selected CoPC (BTEXN, heavy metals, TRH/TPH and PAH)
Sample transport	<ul style="list-style-type: none"> A chain of Custody (COC) form was completed, signed, dated and submitted to the relevant laboratory with each batch of samples for analysis (Appendix L) The samples were delivered to TasFast Couriers on the day of sampling for transport to the primary laboratory for analysis under COC conditions; secondary samples were onforwarded to the secondary laboratory Sample Receipt Notifications were received from each of the laboratories (Appendix M)
Laboratory analysis	<ul style="list-style-type: none"> All samples were submitted to the National Association of Testing Authorities (NATA) accredited ALS Laboratory in Melbourne (Accreditation No. 825) for testing of identified CoPC External QA/QC sample (one triplicate) was forwarded to the NATA accredited Eurofins Laboratory in Melbourne (Accreditation No. 1261) for testing of selected CoPC
Holding times	<ul style="list-style-type: none"> All samples were received by the laboratories within the required holding times for the individual parameters tested All samples were extracted for analysis by the laboratories within the required holding times for the individual parameters tested



5.6 Assessment criteria

Laboratory-reported concentrations of CoPC were compared against available criteria published in the following guidelines (i.e. a Tier 1 Risk Assessment). The criteria are used as thresholds to assist in determining if further investigation and/or risk assessment and/or management are required.

5.6.1 Soil assessment criteria

Laboratory reported concentrations of CoPC in soil / fill material were compared against the following criteria:

- ASC NEPM:
 - Health Screening Levels / Health Investigation Levels (HSLs/HILs B) for a residential land use setting with minimal opportunities for soil access (based on Site zoning), to assess the risk to human health during redevelopment and use of the Site for car parking purposes
 - Ecological Screening Levels / Ecological Investigation Levels (ESLs/EILs) for an urban residential / public open space land use setting (based on Site zoning), to assess the risk to ecological receptors during redevelopment and use of the Site for car parking purposes
- CRC Care Technical Report No. 10:
 - HSLs B for a residential land use setting with minimal opportunities for soil access, to assess the risk to human health during direct contact (based on Site zoning)
 - HSLs for intrusive maintenance workers to assess the risk to human health during direct contact in a shallow trench; and
- IB105 criteria to determine the likely classification of any excavated material for off-site disposal.

Given the current 'General Business' and 'Inner Residential' zoning of the Property and surrounds under the *Hobart Interim Planning Scheme 2015*, the ASC NEPM Areas of Ecological Significance (AES) criteria are not applicable to assess the risk to ecological receptors in the adjacent Providence Rivulet. The waterway is considered to be a modified environment and is not within an 'Environmental Management' zone and therefore the AES criteria do not apply.

5.6.2 Surface water assessment criteria

Under the *State Policy on Water Quality Management 1997*, water quality objectives for a given site are based on the protected environmental values (PEVs). Surface water PEVs are assigned by determining which PEVs should apply to the body of water. The determined PEVs for Providence Rivulet are, Ecosystem Protection (modified not pristine) and recreational water quality and aesthetics, and results have therefore been compared to ANZG and ANZECC guidelines.

Laboratory reported concentrations of CoPC in surface water were compared against the following criteria:

- *Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2018* (ANZG) – freshwater default guideline values (DGVs) for slightly to moderately disturbed systems (95% of species protection); and
- *Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000* (ANZECC) – freshwater trigger values (TVs) for recreational contact.

The ANZECC recreational (primary contact) TVs are conservative and relate to scenarios where users come into frequent direct contact with water (e.g. swimming); contact with water in Providence Rivulet, adjacent to the Property, is likely to be much more infrequent, and likely only sporadic, as Property users will be walking past rather than swimming, and as such the guideline criteria can be multiplied by a factor of 20 (revised ANZECC recreational TV).



5.7 Analytical results and comparison to assessment criteria

Analytical results are provided and compared to adopted assessment criteria in Appendix N. Basic statistics are also provided.

A summary of the reported concentrations and exceedances of adopted criteria are presented in:

- Section 5.7.1 – soil under a residential land use setting (based on Site zoning)
- Section 5.7.2 – soil for offsite disposal; and
- Section 5.7.3 – surface water.

Laboratory Certificates of Analysis are provided in Appendix O.

5.7.1 Soil under a residential land use setting

A summary of the reported concentrations of CoPC in soil / fill material and exceedances of adopted criteria is presented in Table 14.

Site-specific EILs were calculated from two ASC NEPM classification samples from TP01-3 and TP06-1. The most conservative of the two calculated added contaminant limits (ACL) has been used as an initial screening tool for assessing potential ecological impact. The ASC NEPM ACL calculation tool was used and 'aged' concentrations were adopted. The calculated ACLs have been used as Site-specific ecological criteria for Cr, Cu, Ni and Zn, without developing a Site-specific EIL. Site-specific EILs require addition of a 'background' concentration, which has not been established for this Site given the highly disturbed nature of the Site and surrounds. The ACL used is therefore considered to be 'conservative'.

All reported concentrations of CoPC were below adopted human health and ecological criteria, with the exception of the following:

- **Zinc (Zn)** – one sample (TP02-1) exceeded the site-specific ASC NEPM ACL of 740 mg/kg for urban residential / public open space land use with a concentration of 1,060 mg/kg
- **BaP** – six samples (TP01-2, TP02-1, TP03-1, TP06-1, Tripl 1 and Tripl 2 (intra-laboratory and inter-laboratory duplicates of TP06-1 respectively)) exceeded the ASC NEPM ESL of 0.7 mg/kg for urban residential / public open space land use with concentrations of 1.6 to 5.72 mg/kg; and
- **Total coliforms** – were detected above the laboratory limit of reporting (LOR) in two of the samples (TP01-2 and TP02-1) with concentrations of 12-50 MPN/g; there are no criteria for coliforms in the adopted assessment criteria and detection is taken to indicate potential risk.

Other results include:

- **Heavy metals** – were generally reported at concentrations above the LORs in all samples
- **TPH / TRH and BTEXN** – were reported at concentrations below the LORs with the exception of the **TRH F3 fraction** in TP02-1 (120 mg/kg) which was above the LOR of 100 mg/kg
- **BaP** – except where mentioned above, BaP was reported at concentrations equal to or below the LOR; and
- **Total PAH** – where BaP was reported above the LOR, so too were total PAH concentrations.

Table 14: Summary of soil analytical results for CoPC

Analytes	No. of Primary and QA/QC Samples	Number of Detects	Minimum Concentration	Maximum Concentration	Average Concentration	Samples Exceeding Adopted ASC NEPM Residential (with minimal opportunities for soil access) / Public Open Space Criteria
Heavy Metals (mg/kg)						
Arsenic	22	9	<5	14	4.9	<ul style="list-style-type: none"> None
Cadmium	22	1	<0.4	2	0.6	<ul style="list-style-type: none"> None
Chromium (total)	22	22	4	29	13.7	<ul style="list-style-type: none"> None All results below the conservative calculated Site-specific ACL of 530 mg/kg for Cr(III)
Copper	22	21	5	121	33.3	<ul style="list-style-type: none"> None All results below the conservative calculated Site-specific ACL of 220 mg/kg
Lead	22	22	8	718	97.3	<ul style="list-style-type: none"> None All results below the generic ACL of 1,100 mg/kg
Mercury (total)	22	8	<0.1	2.2	0.35	<ul style="list-style-type: none"> None
Nickel	22	22	9	82	26.9	<ul style="list-style-type: none"> None All results below the conservative Site-specific ACL of 95 mg/kg
Zinc	22	22	19	1,060	139	<ul style="list-style-type: none"> One sample (TP02-1) exceeded the conservative calculated Site-specific ACL of 740 mg/kg The average concentration was 139 mg/kg, which is below the conservative Site-specific ACL of 740 mg/kg
Polynuclear Aromatic Hydrocarbons (PAHs) (mg/kg)						
BaP	22	11	<0.05	5.72	0.86	<ul style="list-style-type: none"> Six samples (TP01-2, TP02-1, TP03-1, TP06-1, Tripl 1 and Tripl 2) exceeded the ASC NEPM ESL of 0.7 mg/kg (irrespective of grain size) Tripl 1 and Tripl 2 are the intra-laboratory and inter-laboratory duplicates respectively of TP06-1 The average concentration also exceeded the ASC NEPM ESL
BaP TEQ	22	6	<0.5	2.8	1.13	<ul style="list-style-type: none"> None

Analytes	No. of Primary and QA/QC Samples	Number of Detects	Minimum Concentration	Maximum Concentration	Average Concentration	Samples Exceeding Adopted ASC NEPM Residential (with minimal opportunities for soil access) / Public Open Space Criteria
Total PAHs	22	7	<0.5	18.5	4.48	• None
Total Recoverable Hydrocarbons (TRH) (mg/kg)						
TRH C ₆ -C ₁₀ minus BTEX (F1)	22	0	<10	<10	5	• None
TRH >C ₁₀ -C ₁₆ minus Naphthalene (F2)	22	0	<50	<50	25	• None
TRH >C ₁₆ -C ₃₄ (F3)	22	1	<100	120	53	• None
TRH >C ₃₄ -C ₄₀ (F4)	22	0	<100	<100	50	• None
BTEXN	22	0	<0.1	<1	<LOR	• None
Biological Parameters (mg/kg)						
Total coliforms	6	2	<11	50	9.8	<ul style="list-style-type: none"> Two samples (TP01-2 and TP02-1) reported concentrations above the LOR No criteria given in adopted assessment guidelines

Notes:

TEQ – Toxicity equivalent quotient

LOR – Limit of reporting

Blue shading indicates at least one total concentration was above adopted guideline criteria

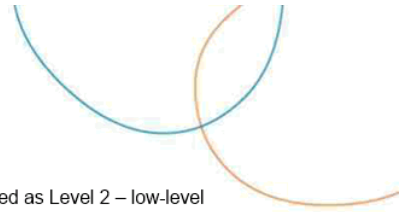
Yellow shading indicates at least one total concentration, and the average concentration, were above adopted guideline criteria

Green shading indicates at least one total concentration was above the LOR; there are no criteria in the adopted guidelines

5.7.2 Soil for offsite disposal

A summary of the reported concentrations of CoPC in soil / fill material and exceedances of adopted disposal criteria is presented in Appendix N.

Analytical results from samples collected in-situ were compared with the maximum total concentrations for soil classification in accordance with IB105. The classification applies to soils excavated from the Site for offsite disposal and does not apply to materials classified as ASS or asbestos-containing. Additional analysis for leachable concentrations of some CoPC may be warranted.



Based on the CoPC analytical results (totals only), soils onsite would likely be classified as Level 2 – low-level contaminated soil or Level 3 – contaminated soil, as a result of the following:

- **BaP:**
 - Three samples exceeded the IB105 Level 2 low-level contaminated soil criterion of 2 mg/kg with concentrations of 2.14 to 5.72 mg/kg, which would classify the material as Level 3 – contaminated soil
 - Ten samples exceeded the IB105 Level 1 – fill material soil criterion of 0.08 mg/kg with concentrations of 0.17 to 5.72 mg/kg
- Heavy metals:
 - **Cu** – two samples equalled or exceeded the IB105 Level 1 – fill material criterion of 100 mg/kg with concentrations of 100 and 121 mg/kg, which would classify the material as Level 2 – low-level contaminated soil
 - **Pb** – one sample exceeded the IB105 Level 1 – fill material criterion of 300 mg/kg with a concentration of 718 mg/kg, which would classify the material as Level 2 – low-level contaminated soil
 - **Ni** – two samples exceeded the IB105 Level 1 – fill material soil criterion of 60 mg/kg with concentrations of 64 and 82 mg/kg, which would classify the material as Level 2 – low-level contaminated soil; and
 - **Zn** – five samples exceeded the IB105 Level 1 – fill material criterion of 200 mg/kg with concentrations of 203 to 1,060 mg/kg which would classify the material as Level 2 – low-level contaminated soil.

Although not listed in IB105, two of the samples had detectable concentrations of total coliforms (12 and 50 MPN/g). This may need to be notified to the landfill when disposing of waste soils. Coliforms will biodegrade rapidly at surface and are not expected to be of concern to the actual waste soil classification.

5.7.3 Surface water

A summary of the reported concentrations of selected CoPC in surface water and exceedances of adopted criteria is presented in Table 15.

It should be noted that ANZG DGVs and ANZECC TVs are necessarily conservative as they are intended as triggers for further investigation; they do not consider background concentrations or site-specific conditions.

All reported concentrations of CoPC were below adopted human health and ecological criteria, with the exception of the following exceedances of ecological criteria:

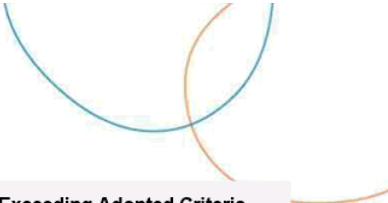
- **Cu** – the reported concentration (0.006 mg/L) exceeded the ANZG freshwater DGV (95% of species protection) of 0.0014 mg/L; and
- **Zn** – the reported concentration (0.054 mg/L) exceeded the ANZG freshwater DGV (95% of species protection) of 0.008 mg/L.

Other results include:

- **BaP** – the reported concentration (<0.5 µg/L), although below the LOR, may potentially have exceeded the ANZG freshwater DGV (95% of species protection) and the revised ANZECC recreational TV (primary contact) of 0.2 µg/L; the standard LOR is above the adopted assessment criteria
- **Ni** – the reported concentration (0.003 mg/L), although above the LOR, was below the ANZG freshwater DGV (95% of species protection) of 0.011 mg/L; and
- Other heavy metals (**As, Cd, Cr (total), Pb and Hg**), **TPH / TRH, BTEXN and PAH** – were reported at concentrations below the LORs.

Table 15: Summary of surface water analytical results for CoPC

Analytes	No. of Primary and QA/QC Samples	Number of Detects	Minimum Concentration	Maximum Concentration	Samples Exceeding Adopted Criteria
Dissolved Heavy Metals (mg/L)					
Arsenic	1	0	<0.001	<0.001	• None
Cadmium	1	0	<0.0001	<0.0001	• None
Chromium (total)	1	0	<0.001	<0.001	• None • Results below total Cr, Cr(III) and Cr(VI) criteria
Copper	1	1	0.006	0.006	• Reported concentration above the ANZG freshwater DGV (95% of species protection) of 0.0014 mg/L
Lead	1	0	<0.001	<0.001	• None
Mercury (total)	1	0	<0.0001	<0.0001	• None
Nickel	1	1	0.003	0.003	• None
Zinc	1	1	0.054	0.054	• Reported concentration above the ANZG freshwater DGV (95% of species protection) of 0.008 mg/L
Polycyclic Aromatic Hydrocarbons (PAHs) (µg/L)					
Benzo(a)pyrene	1	0	<0.5	<0.5	• Result potentially above the ANZG freshwater DGV (95% of species protection) of 0.2 µg/L • Result potentially above the revised ANZECC recreational TV (primary contact) of 0.2 µg/L • Standard LOR is above adopted guideline criteria
Benzo(a)pyrene TEQ	1	0	<0.5	<0.5	• No criteria given in adopted guidelines
Total PAHs	1	0	<0.5	<0.5	• No criteria given in adopted guidelines
Total Recoverable Hydrocarbons (TRH) (µg/L)					
TRH C ₈ -C ₁₀ minus BTEX (F1)	1	0	<20	<20	• No criteria given in adopted guidelines
TRH >C ₁₀ -C ₁₆ minus Naphthalene (F2)	1	0	<100	<100	• No criteria given in adopted guidelines



Analytes	No. of Primary and QA/QC Samples	Number of Detects	Minimum Concentration	Maximum Concentration	Samples Exceeding Adopted Criteria
TRH >C ₁₀ -C ₃₄	1	0	<100	<100	<ul style="list-style-type: none"> No criteria given in adopted guidelines
TRH >C ₃₄ -C ₄₀	1	0	<100	<100	<ul style="list-style-type: none"> No criteria given in adopted guidelines
BTEXN	1	0	<1	<5	<ul style="list-style-type: none"> None

Notes:

Blue shading indicates result was above adopted guideline criteria

Red shading indicates result was potentially above adopted guideline criteria; standard LOR is above adopted guideline criteria



6. Discussion of results

6.1 Field parameters

6.1.1 Soil

Observations – no suspected fragments of ACM were observed during sampling; some broken glass and plastic was noted in the top 0.25 m of TP02; some fill was noted to 0.1 m bgl in TP04 and TP05.

Odour – a strong non-descript odour was noted adjacent to the Providence Rivulet culvert during the Site inspection; no odour was noted during excavation of the test pits.

PID – readings ranged from 0 to 1.3 ppm, suggesting unlikely impact from VOCs within the intersected soils.

Staining – no staining was observed in the test pit profiles or during sampling.

6.1.2 Surface water

Odour – a strong non-descript odour was noted adjacent to the Providence Rivulet culvert during the Site inspection, though the water had no odour during sampling.

Clarity – the water in Providence Rivulet was slightly cloudy and yellow during sampling.

Water depth – the depth of water within Providence Rivulet was approximately 0 to 0.15 m and the bed of the rivulet ranged from approximately 1.1 to 1.8 m below the site surface.

pH – the recorded pH was 7.73 pH units and was within the ANZECC range of 6.5 to 8 pH units for lowland rivers.

Conductivity – the recorded conductivity was 1,079 $\mu\text{S}/\text{cm}$ and was within the ANZECC range of 125 to 2,200 $\mu\text{S}/\text{cm}$ for Tasmanian lowland rivers.

Oxidation and reduction potential (ORP) – the recorded ORP was 391 mV and was representative of oxidising conditions, as would be expected in a rapidly flowing rivulet after sustained rainfall.

6.2 Contaminants

6.2.1 Soil under a residential land use setting

Human health perspective:

Reported concentrations of:

- **Total coliforms** in two samples exceeded the LORs.

Reported concentrations of total coliforms in the top 0.5 m bgl in the vicinity of the TasWater sewer main may present a risk to Site users under a residential land use setting (based on zoning), if there was a likelihood of Site users coming into contact with the soils. It is not known if the coliforms are due to the TasWater sewer main, or due to surface impacts from animal faecal matter. This risk is reduced significantly by the proposed sealing of the Site surface, preventing soil access or the potential removal of surface soils during Site redevelopment. The potential risk to excavation workers should be managed under a Soil and Water Management Plan (SWMP), or similar.



The reported concentrations of BaP across the Site, predominantly above the LOR but below adopted human health guideline criteria, may still present a risk to excavation workers due to potential for dermal contact. Soils are likely to be excavated and disposed offsite as a component of the redevelopment. The potential risk to excavation workers should be managed under a SWMP, or similar.

Reported concentrations of heavy metals, TRH, BTEXN and PAHs were below the ASC NEPM HIL/HSL criteria (where provided), and the risk to human health from these CoPC during residential land use (based on zoning) and/or excavation is considered to be low.

Ecological perspective:

Reported concentrations of:

- **BaP** in six samples (four primary samples and two triplicates) exceeded the ASC NEPM ESL for urban residential / public open space land use (based on zoning), by up to eight times; the average BaP concentration (excluding the two triplicated samples with the lowest results) is 0.7 mg/kg which is equal to the ASC NEPM ESL for urban residential / public open space land use; and
- **Zn** in one sample exceeded the conservative calculated Site-specific ASC NEPM ACL for urban residential / public open space land use (based on zoning) by 1.4 times; the average Zn concentration of 139 mg/kg was five times *below* the conservative calculated Site-specific ASC NEPM ACL for urban residential / public open space land use.

Given the highly modified nature of the Site, being first developed prior to 1946, it is likely that ecological receptors (terrestrial and aquatic) have adjusted to the environment in its current state. Furthermore, the Site surface is proposed to be sealed preventing access by terrestrial ecological receptors. Sealing of the Site surface also minimises the amount of rainwater which may percolate through the soil profile. The potential impact to ecological receptors during excavation works should be managed under a SWMP, or similar.

Reported concentrations of other heavy metals, TRH, BTEXN, other PAHs and total coliforms were below the ASC NEPM EIL/ESL criteria (where provided) and the risk to ecological receptors from these CoPC during residential land use (based on zoning) is considered to be low.

Topsoil and surface fill:

When assessing identified contamination against the logged Site profile, it is apparent that the highest metals, BaP, other PAHs and coliform concentrations are all associated with topsoils, blue-metal fill, and clay mixed with coal. These horizons occur from surface to depths with range from 0.2 to 0.7 m bgl. Refer to Table 16.

Table 16: Summary of BaP impacted soils

Analyte Grouping				Heavy Metals							PAH					Biological Parameters	
Analyte				Asenac	Cadmium	Chromium (total)	Copper	Lead	Nickel	Zinc	Mercury (total)	Benzo(a)pyrene	Benzo(a)pyrene (ultra trace levels)	Carcinogenic PAHs (as BaP TEQ)	Total PAHs	Total Coliforms	
ASCNEPM - EIL/ESL (urban residential / public open space)				100 ^a		530 ^b Cr(III)	220 ^a	1,100 ^c	270 ^a	740 ^b		0.7 (coarse/ fine)	0.7 (coarse/ fine)				
IB105 - Level 1 (fill material)				20	3	50	100	300	60	200	1	0.05	0.05		20		
IB105 - Level 2 (low level contaminated soil)				200	40	500	2,000	1,200	600	14,000	30	2	2		40		
IB105 - Level 3 (contaminated soil)				750	400	5,000	7,500	3,000	3,000	50,000	110	20	20		200		
Sample ID	Location	Sample Depth (m)	soil type	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	MPN/g	
TP01-1	Test Pit 1	0-0.2	topsoil	<5	<1	4	100	64	17	186	<0.1	<0.5	0.27	0.6	<0.5		
TP01-2	Test Pit 1	0.2-0.5	topsoil	<5	<1	9	48	176	11	168	0.7	1.7	2.14	2.2	14.5	12	
TP01-3	Test Pit 1	0.5-0.7	clay	<5	<1	12	16	10	16	31	<0.1	<0.5	<0.05	0.6	<0.5	<13	
TP01-4	Test Pit 1	0.7-1.6	sand	8	<1	10	10	14	39	86	<0.1	<0.5	<0.05	0.6	<0.5	<12	
TP02-1	Test Pit 2	0.05-0.3	topsoil	8	2	22	121	718	17	1,060	0.5	1.8	1.68	2.6	14.7	50	
TP02-2	Test Pit 2	0.3-1.4	clay	<5	<1	14	15	12	24	32	<0.1	<0.5	<0.05	0.6	<0.5	<12	
TP02-3	Test Pit 2	1.4-1.6	sandy clay	12	<1	10	10	36	48	84	<0.1	<0.5	<0.05	0.6	<0.5	<11	
TP03-1	Test Pit 3	0-0.2	topsoil	<5	<1	13	57	240	17	255	2.2	1.7	4.26	2.5	16.0		
TP03-2	Test Pit 3	0.2-1.3	clay	9	<1	20	10	29	35	37	<0.1	<0.5	<0.05	0.6	<0.5		
TP03-3	Test Pit 3	1.4-1.6	sandy clay	14	<1	14	8	11	32	62	<0.1	<0.5	<0.05	0.6	<0.5		
TP04-1	Test Pit 4	0-0.1	blue metal fill	<5	<1	22	37	25	64	74	<0.1	0.5	0.17	0.9	3.7		
TP04-2	Test Pit 4	0.1-0.4	clay + coal	<5	<1	7	23	112	9	37	0.4	<0.5	0.06	0.6	<0.5		
TP04-3	Test Pit 4	0.4-1.0	sandy clay	5	<1	16	11	12	17	37	<0.1	<0.5	<0.05	0.6	<0.5		
TP05-1	Test Pit 5	0-0.1	blue metal fill	<5	<1	29	24	18	82	63	<0.1	<0.5	0.38	0.6	<0.5		
TP05-2	Test Pit 5	0.1-0.4	clay + coal	<5	<1	8	33	100	11	69	0.9	<0.5	0.40	0.6	<0.5		
TP05-3	Test Pit 5	0.7-1.0	clay	5	<1	15	10	10	26	35	<0.1	<0.5	<0.05	0.6	<0.5		
TP05-4	Test Pit 5	1.0-1.5	sandy clay	11	<1	11	5	14	36	54	<0.1	<0.5	<0.05	0.6	<0.5		
TP06-1	Test Pit 6	0-0.2	topsoil	<5	<1	12	56	173	17	210	0.8	1.8	1.89	2.6	17.8		
TP06-1	Test Pit 6	0-0.2	topsoil	<5	<1	12	61	157	19	203	0.6	2.0	5.72	2.8	18.5		
TP06-2	Test Pit 6	0-0.2	topsoil	4.1	<0.4	15	65	190	17	230	0.9	1.6	1.6	2.2	9.6		
TP06-2	Test Pit 6	0.3-1.2	clay	<5	<1	16	9	8	13	19	<0.1	<0.5	<0.05	0.6	<0.5		
TP06-3	Test Pit 6	1.2-1.6	clayey sand	<5	<1	11	<5	12	24	27	<0.1	<0.5	<0.05	0.6	<0.5		
Summary Statistics				22	22	22	22	22	22	22	22	22	22	22	22	2	6
				Number of Detects												2	
				Minimum												<11	
				Maximum												50	
				Median												6	
				Arithmetic Mean												9.5	
Legend:																	
Ecological criteria (National)																	
Disposal criteria (Tasmania)																	
Bold Reported concentration equals or exceeds at least one of the ecological criteria																	
Reported concentration equals or exceeds IB105 Level 1 - fill material																	
Reported concentration equals or exceeds IB105 - Level 2 - low-level contaminated soil																	
Bold Reported concentration is greater than the LOR																	
Red Text Guideline criteria is less than the LOR																	
A Generic Ecological Investigation Level (EIL)																	
B Most conservative site-specific added contaminant limit (ACL) calculated from two ASCNEPM classification samples (refer to EIL Calculations tab for details)																	
C Guideline value is the generic added contaminant limit (ACL)																	
D Carcinogenic PAHs (as BaP TEQ) assumes <LOR values are equal to half the LOR																	
< Less than value indicates result is less than the LOR																	
EIL / ESL Ecological Investigation Level / Ecological Screening Level																	
LOR Limit of Reporting																	
TEQ Toxicity Equivalent Quotient																	
BaP Benzo(a)pyrene																	
ACL Added Contaminant Limit																	
IB105 Does not apply to material classified as potential acid sulphate soil (PASS) or per and poly-fluoroalkyl substances (PFAS)																	
References:																	
ASCNEPM		National Environment Protection (Assessment of Site Contamination) Measure 1999, amended 2013															
IB105		Information Bulletin No. 105 - Classification and Management of Contaminated Soil for Disposal, version 3, 2018, Tasmanian Environment Protection Authority															

6.2.2 Soil for offsite disposal

Individual CoPC reported total concentrations suggest the material could be classified as either:

- Level 2 – low-level contaminated soil, based on individual select heavy metal concentrations (**Cu, Pb, Ni and Zn**); or
- Level 3 – contaminated soil, based on individual **BaP** concentrations.

The elevated heavy metal concentrations appear to be restricted to the top 0.3 m of the soil profile, associated with topsoil and blue metal fill. The elevated **BaP** concentrations are generally restricted to the top 0.5 m of the soil profile. This is illustrated in Table 16.

The soils with highest BaP and metals concentrations have been grouped into Table 17. It includes the topsoils, blue-metal fill, and clay mixed with coal, which occur from surface to depths ranging from 0.2 to 0.7 m bgl.

When considering average total concentrations, however, the results suggest that overall, the Site material sampled to a depth of 1.6 m bgl would be classified as Level 2 – low-level contaminated soil, based on **BaP** concentrations (Table 17). This is due to high concentrations from just a few samples which are skewing the data. It is therefore recommended that excavated Site soils are segregated into contaminated, Level 2 soils and clean, Level 1 soils, as outlined below.

Table 17: Summary of BaP impacted soils statistics

Analyte Grouping				Heavy Metals								PAH				Biological Parameters	
Analyte				Asenic	Cadmium	Chromium (total)	Copper	Lead	Nickel	Zinc	Mercury (total)	Benzo(a)pyrene	Benzo(a)pyrene (ultra trace levels)	Carcinogenic PAHs (as BaP TEQ)	Total PAHs	Total coliforms	
ASC NEPM - EIL/ESL (urban residential / public open space)				100 ^a		530 ^b Cr(III)	220 ^b	1,100 ^c	270 ^b	740 ^b		0.7 (coarse/ fine)	0.7 (coarse/ fine)				
B105 - Level 1 (fill material)				20	3	50	100	300	60	200	1	0.08	0.08		20		
B105 - Level 2 (low level contaminated soil)				200	40	500	2,000	1,200	600	14,000	30	2	2		40		
B105 - Level 3 (contaminated soil)				750	400	5,000	7,500	3,000	3,000	50,000	110	20	20		200		
Sample ID	Location	Sample Depth (m)	soil type	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	MPN/g	
TP01-2	Test Pit 1	0.2-0.5	topsoil	<5	<1	9	48	176	11	168	0.7	1.7	2.14	2.2	14.5	12	
TP02-1	Test Pit 2	0.05-0.3	topsoil	8	2	22	121	718	17	1,060	0.5	1.8	1.68	2.6	14.7	50	
TP03-1	Test Pit 3	0-0.2	topsoil	<5	<1	13	57	240	17	255	2.2	1.7	4.26	2.5	16.0		
TP04-1	Test Pit 4	0-0.1	blue metal fill	<5	<1	22	37	25	64	74	<0.1	0.5	0.17	0.9	3.7		
TP04-2	Test Pit 4	0.1-0.4	clay + coal	<5	<1	7	23	112	9	37	0.4	<0.5	0.06	0.6	<0.5		
TP05-1	Test Pit 5	0-0.1	blue metal fill	<5	<1	29	24	18	82	63	<0.1	<0.5	0.38	0.6	<0.5		
TP05-2	Test Pit 5	0.1-0.4	clay + coal	<5	<1	8	33	100	11	69	0.9	<0.5	0.40	0.6	<0.5		
Tripl 1 (TP06-1)	Test Pit 6	0-0.2	topsoil	<5	<1	12	61	157	19	203	0.6	2.0	5.72	2.8	18.5		
Summary Statistics				Number of Data Points	8	8	8	8	8	8	8	8	8	8	8	2	
				Number of Detects	1	1	8	8	8	8	6	5	8	8	5	2	
				Minimum	<5	<0.4	7	23	18	9	37	<0.1	<0.5	<0.05	<0.5	<11	
				Maximum	8	2	29	121	718	82	1060	2.2	2.0	5.72	2.8	18.5	
				Median	3	1	13	43	135	17	121	1	1.1	1.04	1.6	9.1	
				Arithmetic Mean	3.2	0.7	15.3	50.5	189.3	28.8	241.1	0.65	1.06	1.85	1.60	8.52	17.4
Legend:																	
Ecological criteria (National)																	
Disposal criteria (Tasmania)																	
Reported concentration equals or exceeds at least one of the ecological criteria																	
Reported concentration equals or exceeds B105 Level 1 - fill material																	
Reported concentration equals or exceeds B105 - Level 2 - low-level contaminated soil																	
Reported concentration is greater than the LOR																	
Guideline criteria is less than the LOR																	
Generic Ecological Investigation Level (EIL)																	
Most conservative site-specific added contaminant limit (ACL) calculated from two ASC NEPM classification samples (refer to EIL Calculations tab for details)																	
Guideline value is the generic added contaminant limit (ACL)																	
Carcinogenic PAHs (as BaP TEQ) assumes <LOR values are equal to half the LOR																	
Less than value indicates result is less than the LOR																	
Ecological Investigation Level / Ecological Screening Level																	
Limit of Reporting																	
Toxicity Equivalent Quotient																	
Benzo(a)pyrene																	
Added Contaminant Limit																	
Does not apply to material classified as potential acid sulphate soil (PASS) or per and poly - fluoroalkyl substances (PFAS)																	
References:																	
National Environment Protection (Assessment of Site Contamination) Measure 1999, amended 2013																	
Information Bulletin No. 105 - Classification and Management of Contaminated Soil for Disposal, version 3, 2018, Tasmanian Environment Protection Authority																	

Waste soil handling recommendations:

It is recommended that waste soils be segregated during excavation works, in order to minimise the amount of Level 2 waste soil material, which will result in lower landfill disposal costs, it will allow clean soils to be reused or disposed more affordably as Level 1 waste.

Furthermore, removal of all of the topsoil, blue metal, and coal intermixed with clay within the Site, will result in remediating the Site to a level which is likely to meet ASC NEPM Residential criteria.

To achieve this, all of the topsoils, blue-metal fill, and clay mixed with coal will need to be excavated and stockpiled separately for disposal as Level 2 – low-level contaminated waste, and all other excavated soils should be excavated and stockpiled separately for reuse on Site, or disposed as Level 1 fill.

The Level 2 soils are predominantly characterised by:

- Depths from surface to a maximum of approximately 0.7 m; and
- Composed of topsoil, blue metal, and coal intermixed with clay.

Level 2 soils should be disposed as low-level contaminated soil, by a licensed controlled waste disposal contractor to a landfill licensed to receive Level 2 contaminated waste. EPA approval for disposal is required.

All other soils can either be reused on Site or can be disposed of as Level 1 fill material at the local municipal landfill.

6.2.3 Surface water

Human health perspective:

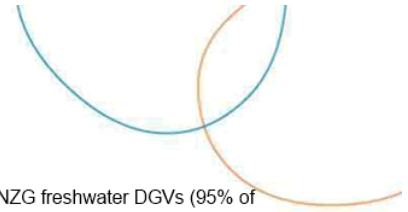
The reported concentration of **BaP** in water sample SW1 has the potential to have exceeded the revised ANZECC recreational TV for primary contact based on the LOR which was higher than the assessment criterion. Given that all fuel-related CoPC tested (TPH/TRH, BTEXN and PAH) were below the LORs and given that Providence Rivulet not readily accessed, the risk to human health from BaP during ongoing residential land use (based on zoning), car parking, and/or excavation is considered to be low.

Reported concentrations of heavy metals (As, Cd, Cr, Cu, Pb, Ni, Zn and Hg), TPH / TRH, BTEXN and total PAH were below ANZECC recreational TVs (primary contact), ASC NEPM HSLs (vapour intrusion) and CRC Care Technical Report No. 10 HSLs (vapour intrusion) (where provided) and were predominantly below the LORs. The risk to human health from these CoPC during ongoing residential land use, car parking, and/or excavation is considered to be low.

It is noted that the ASC NEPM HSLs (vapour intrusion) and CRC Care Technical Report No. 10 HSLs (vapour intrusion) relate to concentrations in groundwater at a depth greater than 2 m bgl. These criteria have been included in this ESA as a guide given the absence of hydrocarbon criteria in ANZECC.

Ecological perspective:

Reported concentrations of heavy metals (**Cu** and **Zn**) in water sample SW1 exceeded the ANZG freshwater DGVs (95% of species protection) by two times for Cu and almost seven times for Zn. The land surrounding Providence Rivulet has been developed since prior to 1946 and it is likely that the ecosystem would have adjusted to the elevated Cu and Zn concentrations in surface water. The source of the elevated Cu and Zn concentrations is likely to be from stormwater runoff from galvanised roofs. The risk to ecological receptors onsite from Cu and Zn during ongoing residential land use (based on zoning) and proposed car parking is considered to be low as receptors are very limited due to the built and modified Site footprint. The Property is reticulated with mains water and it is unlikely that water from the Providence Rivulet would be pumped for use on Site. The potential impact to Site and Providence Rivulet ecological receptors during excavation works should be managed under a SWMP, or similar.



The reported concentration of **BaP** in SW1 has the potential to have exceeded the ANZG freshwater DGVs (95% of species protection) based on the LOR which was higher than the assessment criterion. Given that all fuel-related CoPC tested (TPH/TRH, BTEXN and PAH) were below the LORs and the area in the vicinity of Providence Rivulet has been developed since before 1946, the risk to ecological receptors from BaP during ongoing residential land use and car park use is considered to be low.

Reported concentrations of other heavy metals (As, Cd, Cr, Ni, Pb and Hg), TPH / TRH, BTEXN and total PAH were below ANZG freshwater DGVs (95% of species protection) (where provided) and were predominantly below the LORs. The risk to ecological receptors from these CoPC during ongoing residential land use is considered to be low.

As mentioned previously, ANZG DGVs are necessarily conservative as they are intended as triggers for further investigation, and they do not consider background concentrations or Site-specific conditions.

The potential impact to ecological receptors during excavation works should be managed under a SWMP, or similar.

The water sample was taken as an indication of baseline water quality in Providence Rivulet; this will allow for construction works monitoring to be compared to the baseline water quality.

6.3 Summary of identified contamination

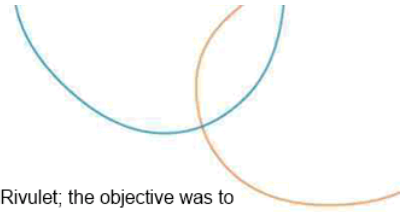
Based on the results of this ESA, reported concentrations of CoPC across the Site show:

Soil / fill material

- Human health perspective:
 - **Total coliforms** in soil / fill material above the LOR
- Ecological perspective:
 - **BaP** in soil / fill material in excess of the ASC NEPM ESL for urban residential / public open space land use (based on zoning) by up to eight times; the average BaP concentration of all samples was 1.2 times the ASC NEPM ESL for urban residential / public open space land use; and
 - **Zn** in soil / fill material in excess of the conservative calculated Site-specific ASC NEPM ACL for urban residential / public open space land use (based on zoning) by 1.4 times; the average Zn concentration of all samples was five times *below* the most conservative calculated site-specific ASC NEPM ACL for urban residential / public open space land use. The exceedance is localised and given the average Zn concentrations are significantly below the conservative ACL, Zn is not considered to present an ecological concern across the Site.

Surface water

- Human health perspective:
 - **BaP** in surface water potentially exceeds the revised ANZECC recreational TV (primary contact); the standard LOR is above the assessment criteria; the risk to Site users and even to construction workers is extremely low, as access to Providence Rivulet is difficult and there is no reason to use the rivulet water since the Site has a reticulated mains water supply
- Ecological perspective:
 - **BaP** in surface water potentially exceeds the ANZG freshwater DGV (95% of species protection)
 - **Cu** in surface water exceeded the ANZG freshwater DGV (95% of species protection) by two times; and
 - **Zn** in surface water exceeded the ANZG freshwater DGV (95% of species protection) by almost seven times.



The water sample was taken as an indication of baseline water quality in Providence Rivulet; the objective was to allow for construction works monitoring to be compared to the baseline water quality. Risks to Site ecological receptors from the rivulet water, are considered to be low as receptors are very limited due to the built and modified Site footprint, furthermore, the Property is reticulated with mains water, and it is unlikely that water from the rivulet would be pumped for use on Site.

Topsoil and surface fill

When assessing identified contamination against the logged Site profile, it is apparent that the highest metals, BaP (and other PAHs) and coliform concentrations are all associated with topsoils, blue-metal fill, and clay mixed with coal. These horizons occur from surface to depths with range from 0.2 to 0.7 m bgl. It is recommended that during excavation works, these soils be segregated from the other clean soils to allow the:

- Site to be cleaned up to meet ASC NEPM residential criteria (applicable to the Site zoning)
- Volume of contaminated soils to be kept to a minimum and disposed appropriately as Level 2 – low level contaminated soil; and
- Volume of clean soil to be maximised for onsite reuse or disposal as Level 1 clean fill.

6.4 Quality control / quality assurance assessment

The QA/QC results and assessment are summarised in Appendix N.

Findings from the field QA/QC assessment are summarised in Table 18.


Findings from the Laboratory QA/QC assessment are provided in Table 19.

The ALS QA/QC information is documented in Appendix P and the Eurofins QA/QC information is documented in the Certificate of Analysis (Appendix O).

Based on the findings of the QA/QC assessment detailed in Section 6.4 (and related appendices), it is considered that the analytical data are sufficiently representative of the concentrations of CoPC in the media sampled at the specified locations and times of sampling. Variation in concentrations is expected given the heterogeneous nature of some contaminants within the soil profile. The reported concentrations of CoPC are of acceptable quality for the purposes of the ESA.

Table 18: Field QA/QC procedures

QA/QC requirement	Completed	Comments
Appropriate sampling strategy employed, and representative samples collected	Yes	<ul style="list-style-type: none"> • Investigation was undertaken in general accordance with the guidelines and standards listed in Section 1.4 • The number and locations of samples collected are appropriate based on the DQOs (Table 11)
Sampling conducted by appropriately qualified staff	Yes	<ul style="list-style-type: none"> • Soil – sampling was conducted by an experienced pitt&sherry Environmental Scientist • Water – sampling was conducted by an experienced pitt&sherry Environmental Scientist



QA/QC requirement	Completed	Comments
Appropriate and well documented sample collection, handling, logging and transportation	Yes	<ul style="list-style-type: none"> All sample containers and sample chiller boxes were checked prior to use to ensure that no cross-contamination risks were present Appropriately clean and/or sterile sampling equipment and vessels were used Samples were immediately transferred to a labelled and laboratory supplied sampling vessel Samples were placed into a cooled chiller box for sample preservation before transport and delivery to the laboratory
Chain of custody (COC) documentation completed	Yes	<ul style="list-style-type: none"> Soil – all samples were transported under appropriate COC procedures Water – the water sample was transported under appropriate COC procedures
Required number of blind duplicates collected (minimum 1 in 20)	Yes (soil) N/A (water)	<ul style="list-style-type: none"> Soil: <ul style="list-style-type: none"> Primary – 20 primary samples collected QA/QC – 1 triplicate (2 samples) collected Water – sampling was opportunistic only <ul style="list-style-type: none"> Primary – 1 primary sample collected QA/QC – no samples collected
Reported relative percentage differences (RPDs) within limits set in AS4482.1	Yes (partial) N/A (water)	<p>Where determined RPDs were:</p> <ul style="list-style-type: none"> Soil (intra-laboratory duplicate) – acceptable for all parameters analysed with the exception of BaP (ultra-trace), indicating heterogeneous dispersion of PAHs within the profile Soil (inter-laboratory duplicate) – acceptable for all parameters analysed with the exception of PAH, indicating heterogeneous dispersion of PAHs within the profile Water – not calculated, no duplicate collected; sampling was opportunistic
Trip blank samples collected	Yes (soil) N/A (water)	<ul style="list-style-type: none"> Soil – 1 trip blank sample submitted to the laboratory for TRH (F1 fractions) and BTEXN analysis; results were all below the LORs indicating that the potential for external volatiles contamination impacting on the analytical results is low Water – no trip blank submitted; sampling was opportunistic
Rinsate sample collected	N/A	<ul style="list-style-type: none"> Soil – no reusable equipment was used, with the exception of the excavator bucket Water – a clean long-handled sampler was used only once and was rinsed in the sampled water
Samples delivered to laboratory within sample holding times	Yes (soil) Yes (water)	<ul style="list-style-type: none"> Soil – samples were delivered to the laboratory within the holding times for parameters analysed Water – the sample was delivered to the laboratory within the holding times for parameters analysed

Table 19: Laboratory QA/QC procedures

QA/QC Requirement	ALS	Eurofins	Comments
Samples extracted and analysed within relevant holding times	Yes (soil) Yes (water)	Yes (soil)	<ul style="list-style-type: none"> Soil – all analytes were extracted within required holding times Water – all analytes were extracted within required holding times
All analyses NATA accredited	Yes	Yes (soil)	ALS and Eurofins are NATA accredited for all analyses performed
Appropriate analytical methodologies used, in accordance with Schedule B (3) of the ASC NEPM	Yes	Yes (soil)	<ul style="list-style-type: none"> ALS – refer to the Interpretive Quality Control reports in Appendix P for methods used and relevance to Schedule B (3) of the ASC NEPM Eurofins – refer to the Certificate of Analysis report in Appendix O for methods used
Acceptable laboratory LORs adopted	Yes (soil) Partial (water)	Yes (soil)	<ul style="list-style-type: none"> Soil – LORs were lower than assessment criteria Water – LORs were lower than assessment criteria with the exception of BaP; sampling was opportunistic
Acceptable laboratory QC results – laboratory duplicates	Yes (soil) Yes (water)	Yes (soil)	<ul style="list-style-type: none"> Soil – no duplicate outliers occurred Water – no duplicate outliers occurred
Acceptable laboratory QC results – method blanks	Yes (soil) Yes (water)	Yes (soil)	<ul style="list-style-type: none"> Soil – no method blank outliers occurred Water – no method blank outliers occurred
Acceptable laboratory QC results – matrix spikes	Partial (soil) Yes (water)	Yes (soil)	<ul style="list-style-type: none"> Soil – matrix spike outliers occurred for TRH (C₁₀₋₁₄ and >C₁₀₋₁₆ fractions); recovery was less than the lower data quality objective Water – no matrix spike outliers occurred
Acceptable laboratory QC results – laboratory control spikes	Yes (soil) Yes (water)	Yes (soil)	<ul style="list-style-type: none"> Soil – no laboratory control outliers occurred Water – no laboratory control outliers occurred
Acceptable laboratory QC results – surrogates	Yes (soil) Yes (water)	Yes (soil)	<ul style="list-style-type: none"> Soil – for all regular sample matrices no surrogate recovery outliers occurred Water – for all regular sample matrices no surrogate recovery outliers occurred

Notes:

LOR – limit of reporting



7. Preliminary conceptual site model

A preliminary Conceptual Site Model (CSM) has been developed, to identify potentially significant source-pathway-receptor (SPR) linkages in relation to human health and the environment. Unacceptable risks from contamination may occur if the SPR linkage is complete.

7.1 Sources

Potential sources of contamination on the Property are likely to relate to:

- Former onsite activities including sale of used motor cars and trucks or upholsters in the 1960s (Table 4)
- Presence of fill material containing concrete, broken bricks, sand and gravel; may include ACM, although none was noted (during either the Site inspection or in test pits)
- Presence of a TasWater sewer main beneath the Property (LISTmap); and/or
- Historical surrounding land uses as summarised in Table 10.

Based on the results of this ESA, reported concentrations of CoPC across the Site show:

- Soil fill material – **BaP**, heavy metals (**Zn**) and **total coliforms** above adopted assessment criteria (or above the LOR in the case of total coliforms)
- Surface water – heavy metals (**Cu** and **Zn**) above adopted assessment criteria; **BaP** potentially above adopted assessment criteria

7.2 Receptors

Potential receptors which may be exposed to identified CoPC include:

- Human receptors:
 - Current Site users (users of the unsealed area for car parking)
 - Future Site users (users of the redeveloped car park)
 - Future Site users under a residential scenario (allowable under the zoning)
 - Excavation and maintenance workers (exposure to be managed under a SWMP, or similar)
- Ecological receptors:
 - Terrestrial fauna and flora onsite and offsite (highly modified and developed area); and
 - Aquatic flora and fauna offsite (highly modified catchment along Providence Rivulet).

Any change in proposed Site use which allows direct access to the soil by Site users (e.g. from car parking to residential use with access to soil) should be considered a higher risk use and will likely require mitigation measures to prevent exposure to identified Site contamination, unless the identified contaminated soil materials are removed from Site during the proposed earthworks.



7.3 Pathways

Potential migration pathways through which potential receptors may be exposed to identified CoPC include:

- Human receptors:
 - Inhalation of airborne contaminants in dust
 - Direct contact with impacted soil / fill materials
 - Ingestion of impacted soil / fill materials
 - Migration of contamination within the soil / fill material profile into groundwater or surface water (Providence Rivulet)
- Ecological:
 - Migration of contamination within the soil / fill material profile into groundwater or surface water (Providence Rivulet)
 - Direct contact or ingestion (terrestrial and aquatic fauna); and
 - Plant uptake (terrestrial and aquatic flora).

7.4 Preliminary conceptual site model

A preliminary Conceptual Site Model (CSM) has been developed in Table 20 for the identified contaminants in soil and water, to represent the relative risks of any identified potentially complete SPR linkages, with shading as follows:

- **Grey shading** indicates the SPR linkage is incomplete => **No risk**
- **Green shading** indicates the SPR linkage is potentially complete, but the risk is **very low**
- **Yellow shading** indicates the SPR linkage is potentially complete, but the **risk is low with management measures**
- **Red shading** indicates the SPR linkage is complete, and presents an **unacceptable risk**; and
- **Red text** outlines management / mitigation measures required under that particular scenario.

None of the scenarios have been assessed as 'unacceptable'; they are all classified as:

- No risk
- Low risk; or
- Low risk with management measures .

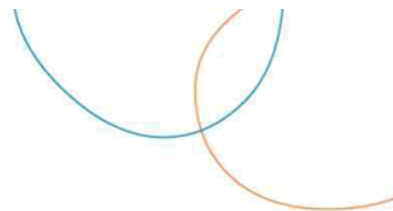
Table 20: Conceptual Site Model

CoPC / Receptor	Human Health on Site				Ecological on Site		Ecological off Site	
	Current Site Users (car park)	Future Site Users (car park)	Potential Future Residential users (access to soil)	Excavation Workers	Current and future use	During earthworks	Current and future use	During earthworks
Soil								
Coliforms	Site only used for car parking – no likely contact with soil	Soils will either be removed or will be sealed over – no possible contact	Possible future soil access (for residential use) will require mitigation measures to prevent potential exposure, if contaminated soils are not removed during these earthworks	Potential exposure to coliforms and WHS risks will be managed by the excavation contractor	Considered low risk as the source is likely to be animal	Risk from sewer spills during works will be managed under the SWMP		Risk from sewer spills during works will be managed under the SWMP
BaP	BaP TEQ concentration was below ASC NEPM human health criterion				During car parking use the risk is low as the site is sealed; BaP impacted soils will need to be removed or access restricted for potential future residential use	Risks from contaminated soils during works will be managed under the SWMP		Risks from contaminated soils during works will be managed under the SWMP

CoPC / Receptor	Human Health on Site				Ecological on Site		Ecological off Site	
	Current Site Users (car park)	Future Site Users (car park)	Potential Future Residential users (access to soil)	Excavation Workers	Current and future use	During earthworks	Current and future use	During earthworks
Zn	Zn concentration was below ASC NEPM human health criterion				Only 1 exceedance, average concentrations are well within the Zn ACL			
Water (Providence Rivulet)								
BaP	LOR was lower than the revised ANZECC primary contact criterion, but the risk is still considered very low as the Site is reticulated with mains water and Providence Rivulet is not likely to be accessed				LOR was lower than ecological criterion, but the risk is still considered very low as the Site is reticulated with mains water and Providence Rivulet water is not likely to be used on Site			
Cu and Zn	Cu and Zn concentrations are lower than ANZECC primary contact criteria				Cu and Zn concentrations exceeded the ANZG 95% of species protection in freshwater; the risk to site ecological receptors is considered very low as the Site is reticulated with mains water and the rivulet water is not likely to be used on Site			

Note:

LOR – limit of reporting; CoPC – contaminant of potential concern; ACL – added contaminant limit



7.5 Data gaps

The following data gaps are noted in preparing the preliminary CSM:

- Sampling was limited to the locations tested, noting the limitations associated with the presence of the TasWater sewer main and connections to buildings on the front portion of the Property
- Depth of sampling was guided by the proposed maximum depth of excavation of 1.6 m bgl
- Absence of groundwater data – groundwater was not encountered to the maximum depth of investigations (i.e. 1.6 m bgl); and
- The BaP LOR in water was higher than the human health and ecological criteria.

7.6 Risk evaluation

Based on Table 20, the risk to each identified receptor has been assessed as:

- Current Site users – **low to very low risk**
- Future Site users under a car park use – **no risk to very low risk**
- Future Site users under a residential use with access to soil (allowable under the zoning) – **possible risk, which would need to be managed**
- Excavation and maintenance workers – **low risk which would be further mitigated by under normal work health and safety management precautions during earthworks**
- Ecological receptors – generally low risk, except under two scenarios:
 - During **earthworks**, which would be **managed under a SWMP or equivalent**; and
 - If the Site were to be developed in the **future, for residential use** with access to soil; this would require identified contaminated soils to be **removed** or access to these soils to be **restricted**.

In summary, for the purposes of the proposed development, potential human health exposure risks and environmental impact risks will be managed under a SWMP, or similar.



8. Conclusion and recommendations

8.1 Conclusions

This ESA has identified the following:

Historical potentially contaminating activities

Potential sources of contamination on the Property are likely to relate to:

- Former onsite activities including sale of used motor cars and trucks or upholsters in 1960 (Table 4)
- Presence of fill material containing concrete, broken bricks, sand and gravel; may include ACM, although none was noted (Site inspection and test pitting)
- Presence of a TasWater sewer main beneath the Property (LISTmap); and/or
- Historical surrounding land uses including fuel storage / supply / garage; auto wreckers; scrap metal merchants; printers; dry cleaners; paint enamel varnish / stain manufacturers / importers / distributors; upholsters (Table 10).

Identified contamination:

The reported concentrations of CoPC across the Site show a number of exceedances of adopted guideline criteria:

- Human health perspective:
 - **BaP** in surface water potentially exceeded the ANZG freshwater DGV (95% of species protection)
 - **Total coliforms** in soil / fill material above the LOR
- Ecological perspective:
 - **BaP** in soil / fill material exceeded the ASC NEPM ESL for urban residential / public open space land use (based on zoning)
 - **Cu** in surface water exceeded the ANZG freshwater DGV (95% of species protection);
 - **Zn** in soil / fill material exceeded the most conservative calculated Site-specific ASC NEPM ACL for urban residential / public open space land use (based on zoning); and
 - **Zn** in surface water exceeded the ANZG freshwater DGV (95% of species protection).

Human health risk:

Based on the preliminary CSM (Section 7), and noting the limitations in Section 1.5 and the data gaps in Section 7.5, the level of contamination identified in soil and surface water represents a:

- **Low to very low risk** to current Site users
- **No to very low risk** to future Site users under a car park use
- **Possible risk** to future Site users under a residential use with access to soil (allowable under the zoning); and
- **Low risk** to excavation and maintenance workers

given that:

- The Site is to be used for car parking – no likely contact with soils
- Soils will either be removed or will be sealed over – no possible contact; and
- The Site is reticulated with mains water and Providence Rivulet is not likely to be accessed.



Possible **future** soil access (for residential use) will require **mitigation measures** to prevent potential exposure, if contaminated soils are not removed during these earthworks. Potential exposure to coliforms and work health and safety risks will be managed by the excavation contractor.

The risk to excavation and maintenance workers can be adequately managed under a SWMP, or similar.

Ecological risk:

Based on the preliminary CSM (Section 7), and noting the limitations in Section 1.5 and the data gaps in Section 7.5, the level of contamination identified in soil and surface water represents a **low risk**, except under two scenarios:

- During earthworks – risks can be adequately managed under a SWMP, or similar; and
- Future residential development with access to soil (allowable under the zoning) – would require removal of identified contaminated soils or access to the soils restricted.

For the purposes of the proposed development, potential human health exposure risks and environmental impact risks will be managed under a SWMP, or similar.

Natural values:

Based on a preliminary desktop assessment of potential natural values assessment (Section 2.2), the proposed development of the Site, and more specifically development in the vicinity of Providence Rivulet, is unlikely to have an unnecessary or unacceptable impact on identified natural values.

Note that no natural values survey has been carried out and the natural values within Providence Rivulet are not known.

Waste soil classification:

Individual CoPC reported total concentrations suggest the material could be classified as either:

- Level 2 – low-level contaminated soil, based on individual select heavy metal concentrations (**Cu, Pb, Ni and Zn**); or
- Level 3 – contaminated soil, based on individual **BaP** concentrations.

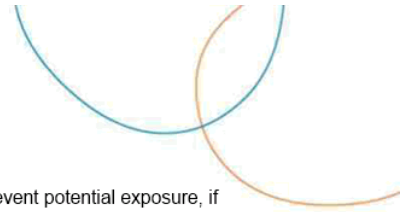
The highest metals, BaP (and other PAHs) and coliform concentrations are all associated with topsoils, blue-metal fill, and clay mixed with coal. These horizons occur from surface to depths with range from 0.2 to 0.7 m bgl.

When considering average total concentrations, however, the Site material sampled to a depth of 1.6 m bgl would be classified as Level 2 – low-level contaminated soil, based on **BaP** concentrations. This is due to high concentrations from just a few samples which are skewing the data. It is therefore recommended that excavated Site soils are segregated into contaminated, Level 2 soils and clean, Level 1 soils, as outlined in Section 8.2.

Summary:

The findings of this ESA demonstrate that:

- The Site is suitable for the intended use as a car park – the Site is suitable for continued residential land use (based on zoning) in terms of the PCLC (Clause 2.5, Performance Criteria P1(c)), provided the Site surface is sealed as a component of the redevelopment or contaminated soil is removed from Site
- Excavation does not adversely impact on human health or the environment – the Site is suitable for the proposed redevelopment in terms of the PCLC (Clause 2.6.2, Performance Criteria P1(b)), provided the requirements of a SWMP, or similar, are implemented during excavation works; and
- Development works do not adversely impact on natural values – the Site is suitable for the proposed redevelopment in terms of the WCPC (Clause 11.7.1, Performance Criteria P1), provided the requirements of a SWMP, or similar, are implemented during excavation works.



Possible future soil access (for residential use) will require mitigation measures to prevent potential exposure, if contaminated soils are not removed during these earthworks.

8.2 Recommendations

Based on the findings of this ESA, and noting the limitations in Section 1.5 and the data gaps in Section 7.5, the following recommendations are made:

- Include sealing of the Site surface in the redevelopment works
- Prepare and implement a SWMP (or similar) for the redevelopment works to mitigate and control potential human health and environmental impacts during earthworks; and
- The SWMP should focus on soil and water management to satisfy Clause 11.7.1, Performance Criteria P1 of the WCPC, including management of waste surplus soils.

If the Site were to be developed in the future, for residential use with access to soil (allowable under the zoning), this would require identified contaminated soils to be removed or access to these soils to be restricted

Waste disposal:

It is recommended that waste soils be segregated during excavation works, in order to minimise the amount of Level 2 waste soil material, which will result in lower landfill disposal costs, it will allow clean soils to be reused or disposed more affordably as Level 1 waste.

Furthermore, removal of all of the topsoil, blue metal, and coal intermixed with clay within the Site, will result in remediating the Site to a level which is likely to meet ASC NEPM residential criteria.

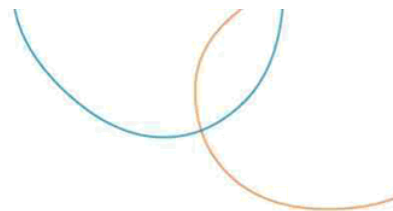
To achieve this, all of the topsoils, blue-metal fill, and clay mixed with coal will need to be excavated and stockpiled separately for disposal as Level 2 – low-level contaminated waste, and all other excavated soils should be excavated and stockpiled separately for reuse on Site, or disposed as Level 1 fill.

The Level 2 soils are predominantly characterised by:

- Depths from surface to a maximum of approximately 0.7 m; and
- Composed of topsoil, blue metal, and coal intermixed with clay.

Level 2 soils should be disposed as low-level contaminated soil, by a licensed controlled waste disposal contractor to a landfill licensed to receive Level 2 contaminated waste. EPA approval for disposal is required.

All other soils can either be reused on Site or can be disposed of as Level 1 fill material at the local municipal landfill.



9. References

Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2018. Australian and New Zealand Governments and Australian State and Territory Governments, Canberra ACT, Australia (ANZG)

AS 4482.1 *Guide to the investigation and sampling of sites with potentially contaminated soil – Non-volatile and semi-volatile compounds*, Standards Australia, 2 November 2005 or as amended or substituted (AS 4482.1)

AS 4482.2 *Guide to the sampling and investigation of potentially contaminated soil – Volatile substances*, Standards Australia, 5 September 1999 or as amended or substituted (AS 4482.2)

AS/NZS 5667.1:1998 *Water quality – Sampling, Part 1: Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples*, Standards Australia, 1998 (AS/NZS 5667.1)

AS/NZS 5667.6:1998 *Water quality – Sampling, Part 6: Guidance on sampling of river and streams*, Standards Australia, 1998 (AS/NZS 5667.6)

CRC Care Technical Report No. 10 *Health Screening Levels for Petroleum Hydrocarbons in Soil and Groundwater September 2011, including errata August 2012* (CRC Care Technical Report No. 10)

Environmental Management and Pollution Control Act 1994 (EMPCA) and relevant Regulations

Lotsearch Enviro Professional, 321-323a Elizabeth Street, North Hobart, Tas 7000, 2 October 2021 (Lotsearch Report)

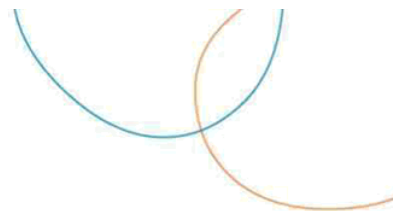
National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended 2013 (ASC NEPM)

National Water Quality Management Strategy – Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 (ANZECC)

Preliminary Soil Contamination Assessment, Providence Rivulet Retaining Wall, 321-323A Elizabeth Street, North Hobart, Rev 00, pitt&sherry, 23 November 2020 (pitt&sherry, 2020)

Tasmanian State Policy on Water Quality Management, 1997 (Water Policy)

Tasmanian Environment Protection Authority (EPA) Information Bulletin No. 105 *Classification and Management of Contaminated Soil for Disposal* (v3, 2018) (IB105)



10. Important information

10.1 Scope of services

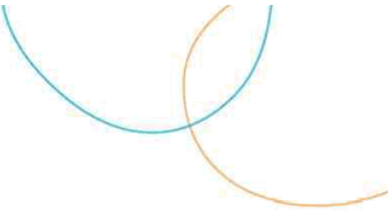
This report ("the Report") has been prepared in accordance with the scope of services set out in the contract, or as otherwise agreed, between the client and pitt&sherry ("the scope of services"). In some circumstances the scope of services may have been limited by a range of factors such as time, budget, access and/or site disturbance constraints. The Report may only be used and relied on by the client for the purpose set out in the contract or as otherwise agreed between the client and pitt&sherry. Any use which a third party makes of this document, or any reliance on or decisions to be made based on it, is the responsibility of such third parties.

10.2 Reliance on data

In preparing the Report, pitt&sherry has relied upon data, surveys, analyses, designs, plans and other information provided by the client and other individuals and organisations, most of which are referred to in the Report ("the data"). Except as otherwise stated in the Report, pitt&sherry has not verified the accuracy or completeness of the data. To the extent that the statements, opinions, facts, information, conclusions and/or recommendations in the Report ("conclusions") are based in whole or part on the data, those conclusions are contingent upon the accuracy and completeness of the data. pitt&sherry does not warrant the accuracy will not be liable in relation to conclusions should any of the data, be incorrect or have been concealed, withheld, misrepresented or otherwise not fully disclosed to pitt&sherry.

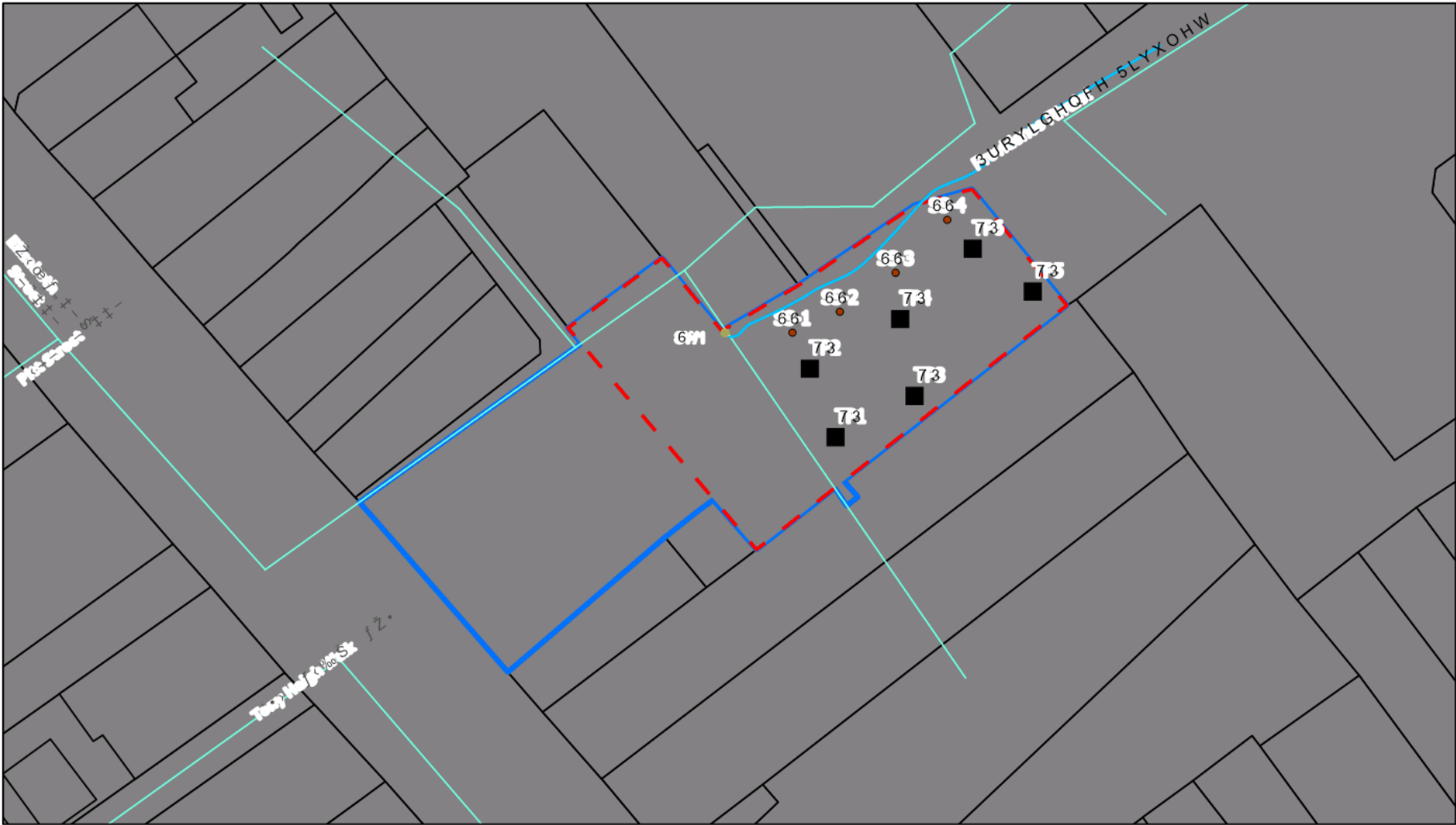
10.3 Conclusions and recommendations

The conclusions in this Report are based on conditions encountered and information reviewed at the date of preparation of the Report. pitt&sherry has no responsibility or obligation to update this Report to account for events or changes occurring subsequent to the date that the Report was prepared.



Figures

Appendix A



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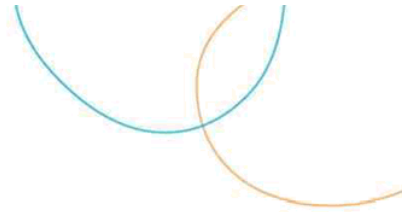
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Lotsearch Report

Appendix B

pitt&sherry



Date: 02 October 2021 18:03:19

Reference: LS024821 EP

Address: 321-323a Elizabeth Street, North Hobart, TAS 7000

Disclaimer:

The purpose of this report is to provide an overview of some of the site history, environmental risk and planning information available, affecting an individual address or geographical area in which the property is located. It is not a substitute for an on-site inspection or review of other available reports and records. It is not intended to be, and should not be taken to be, a rating or assessment of the desirability or market value of the property or its features. You should obtain independent advice before you make any decision based on the information within the report. The detailed terms applicable to use of this report are set out at the end of this report.

Dataset Listing

Datasets contained within this report, detailing their source and data currency:

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features Onsite	No. Features within 100m	No. Features within Buffer
EPA Regulated Premises	Environment Protection Authority Tasmania	13/09/2021	13/09/2021	Monthly	1000	0	0	2
National Waste Management Facilities Database	Geoscience Australia	12/05/2021	07/03/2017	Annually	1000	0	0	0
National Liquid Fuel Facilities	Geoscience Australia	15/02/2021	25/07/2011	Annually	1000	0	0	7
Points of Interest - Service Stations	TAS Department of Primary Industries, Parks, Water and Environment	19/08/2021	19/08/2021	Quarterly	1000	0	0	5
Airservices Australia National PFAS Management Program	Airservices Australia	06/09/2021	06/09/2021	Monthly	2000	0	0	0
Defence 3 Year Regional Contamination Investigation Program	Department of Defence	19/08/2021	19/08/2021	Quarterly	2000	0	0	1
Authority Land - Defence	TAS Department of Primary Industries, Parks, Water and Environment	19/08/2021	19/08/2021	Quarterly	2000	0	0	1
UBD Business Directories (Premise & Intersection Matches)	Hardie Grant			Not required	100	13	336	336
UBD Business Directories (Road & Area Matches)	Hardie Grant			Not required	100	-	11	11
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Premise & Intersection Matches)	Hardie Grant			Not required	250	0	9	23
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Road & Area Matches)	Hardie Grant			Not required	250	-	0	0
Points of Interest	TAS Department of Primary Industries, Parks, Water and Environment	19/08/2021	19/08/2021	Quarterly	1000	0	1	121
Easements	TAS Department of Primary Industries, Parks, Water and Environment	13/09/2021	12/01/2021	Quarterly	0	0	0	0
Drill Hole Database (DORIS)	Mineral Resources Tasmania	29/07/2021	29/07/2021	Quarterly	2000	0	0	187
National Groundwater Information System (NGIS) Boreholes	Bureau of Meteorology	01/02/2021	01/02/2021	Annually	2000	0	0	1
1:25,000 Scale Digital Geology of Tasmania	Mineral Resources Tasmania	07/02/2020	16/06/2010	As required	1000	2	5	18
Atlas of Australian Soils	ABARES	19/05/2017	17/02/2011	As required	1000	1	1	1
Atlas of Australian Acid Sulfate Soils	CSIRO	19/01/2017	21/02/2013	As required	1000	1	1	2
Areas of Tasmania with Potential to Contain Acid Sulfate Soils	TAS Department of Primary Industries, Parks, Water and Environment - Natural and Cultural Heritage Division	07/02/2020	07/02/2020	As required	1000	0	0	2
Tasmanian Interim Planning Scheme Zoning	Tasmanian Planning Commission	13/09/2021	13/09/2021	Monthly	1000	2	9	59
Tasmanian Interim Planning Scheme Overlay	Tasmanian Planning Commission	13/09/2021	13/09/2021	Monthly	1000	3	6	38
Tasmanian Interim Planning Scheme Overlay - Flood	Tasmanian Planning Commission	13/09/2021	13/09/2021	Monthly	1000	0	0	0
Tasmanian Interim Planning Scheme Overlay - Coastal Inundation	Tasmanian Planning Commission	13/09/2021	13/09/2021	Monthly	1000	0	0	0
Tasmanian Interim Planning Scheme Overlay - Coastal Erosion	Tasmanian Planning Commission	13/09/2021	13/09/2021	Monthly	1000	0	0	0
Tasmanian Interim Planning Scheme Overlay - Landslide	Tasmanian Planning Commission	13/09/2021	13/09/2021	Monthly	1000	0	0	7
Tasmanian Interim Planning Scheme Overlay - Bushfire	Tasmanian Planning Commission	13/09/2021	13/09/2021	Monthly	1000	0	0	1
Fire History	TAS Department of Primary Industries, Parks, Water and Environment	13/09/2021	13/09/2021	Monthly	1000	0	0	13

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features Onsite	No. Features within 100m	No. Features within Buffer
Commonwealth Heritage List	Australian Government Department of Agriculture, Water and the Environment	18/05/2021	20/11/2019	Annually	500	0	0	1
National Heritage List	Australian Government Department of Agriculture, Water and the Environment	18/05/2021	20/11/2019	Annually	500	0	0	0
Tasmanian Heritage Register	Heritage Tasmania	19/08/2021	19/08/2021	Quarterly	500	0	17	249
Authority Land - Aboriginal Land	TAS Department of Primary Industries, Parks, Water and Environment	19/08/2021	19/08/2021	Quarterly	500	0	0	0
TASVEG 4.0	TAS Department of Primary Industries, Parks, Water and Environment - Natural and Cultural Heritage Division	13/09/2021	11/10/2020	As Required	1000	1	1	7
Threatened Native Vegetation Communities 2014	TAS Department of Primary Industries, Parks, Water and Environment - Natural and Cultural Heritage Division	13/09/2021	14/02/2021	Annually	1000	0	0	1
Ramsar Wetlands of Australia	Australian Government Department of Agriculture, Water and the Environment	24/02/2021	19/03/2020	Annually	1000	0	0	0
Groundwater Dependent Ecosystems Atlas	Bureau of Meteorology	14/08/2017	15/05/2017	Annually	1000	0	0	0
Inflow Dependent Ecosystems Likelihood	Bureau of Meteorology	14/08/2017	15/05/2017	Unknown	1000	0	0	0
Property Boundaries & Roads	TAS Department of Primary Industries, Parks, Water and Environment	13/09/2021	13/09/2021	Monthly		-	-	-
Topographic Data	TAS Department of Primary Industries, Parks, Water and Environment	03/02/2021	18/03/2015	Annually		-	-	-

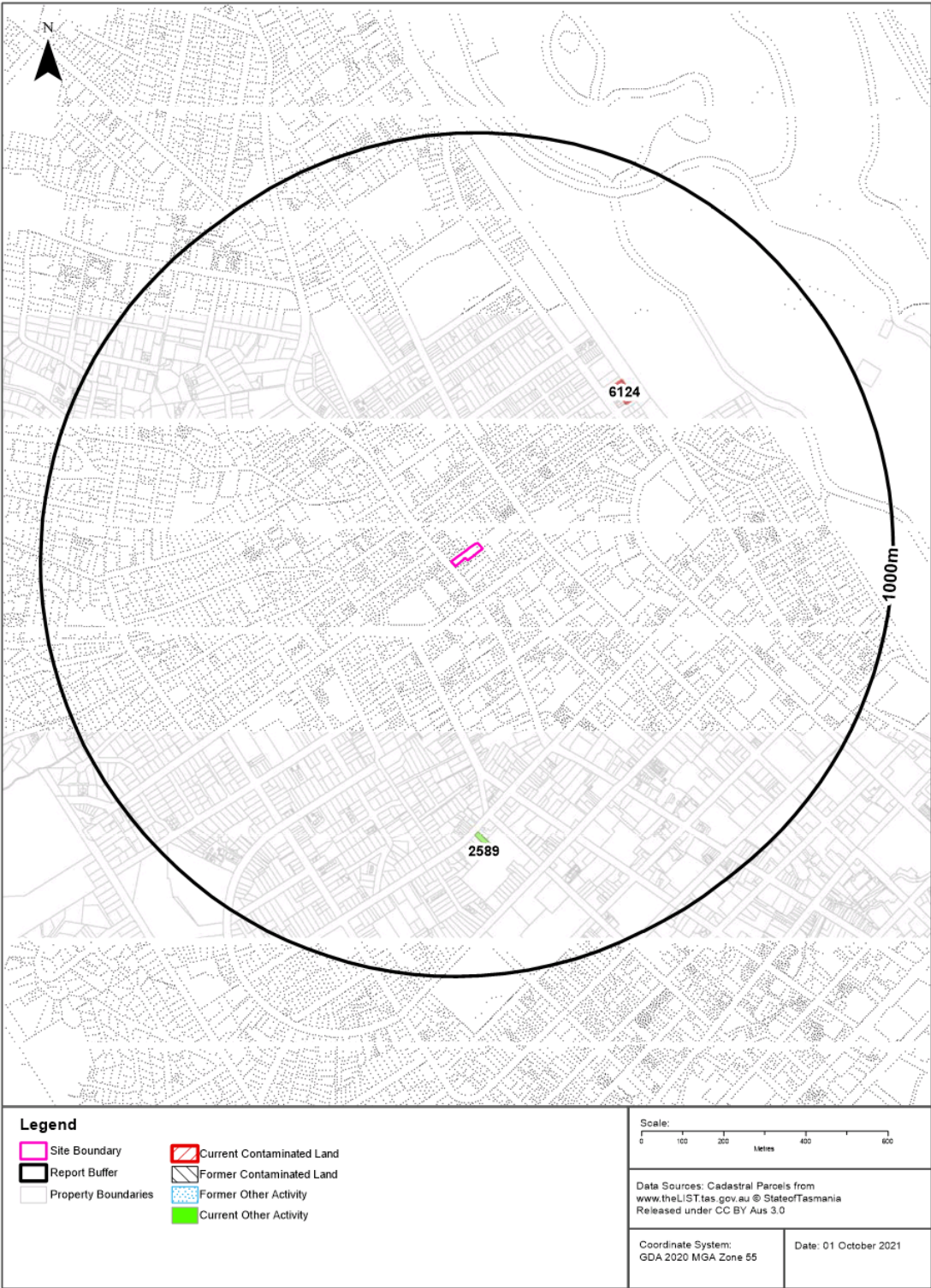
Aerial Imagery 2021

321-323a Elizabeth Street, North Hobart, TAS 7000



EPA Regulated Premises

321-323a Elizabeth Street, North Hobart, TAS 7000



EPA Regulated Premises

321-323a Elizabeth Street, North Hobart, TAS 7000

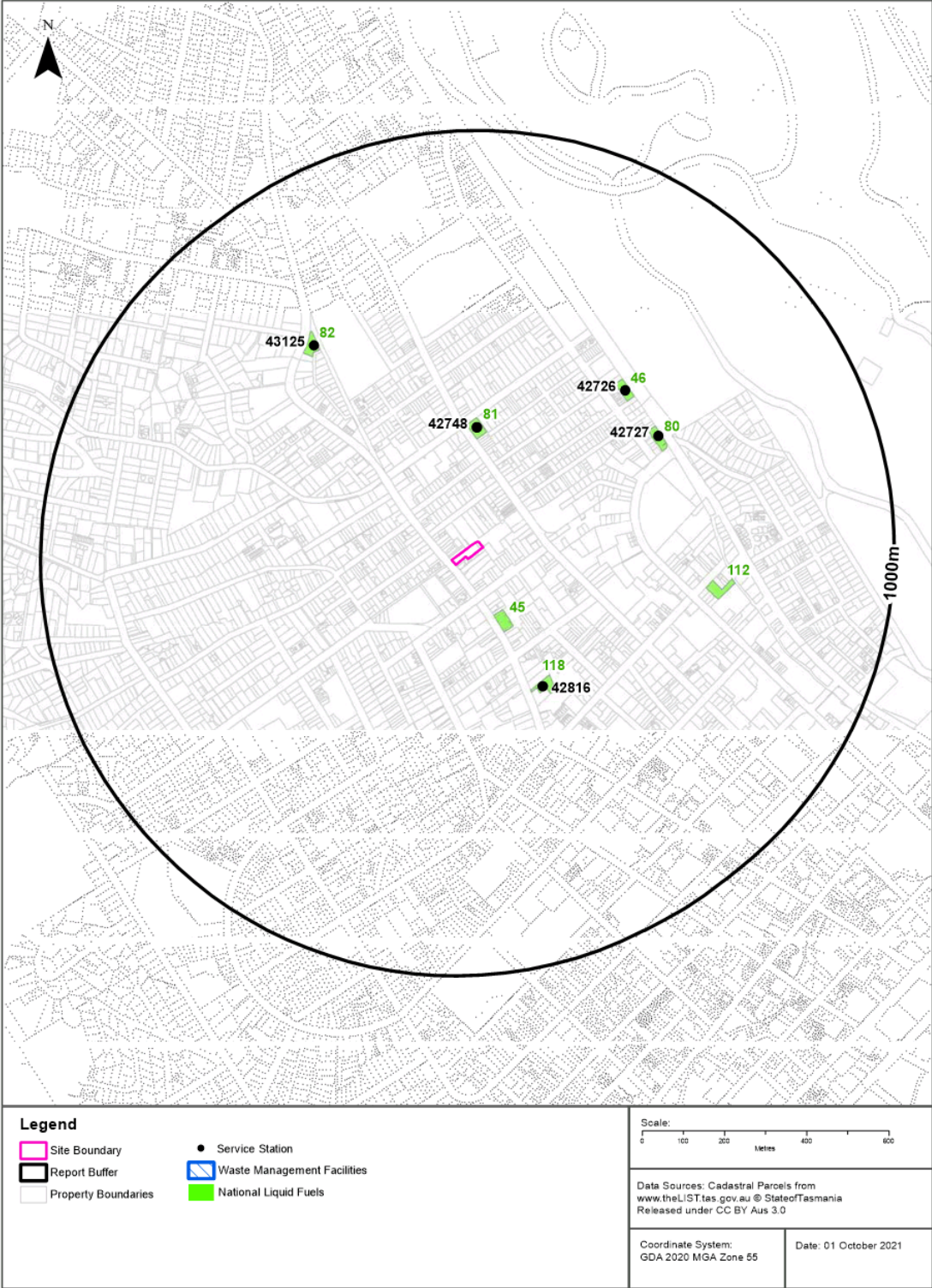
EPA Regulated Premises

EPA Regulated Premises within the dataset buffer:

Site Id	Premise	Client	Activity Category	Activity Type	Doc No.	Document Type	Status	Loc Conf	Dist	Dir
6124	Not provided	BP AUSTRALIA PTY LTD	Contaminated Sites (Currently Regulated)	CS Contaminated Site	9647/1	Investigation Notice	Current	Premise Match	499m	North East
2589	Not provided	THE PROPRIETORS	Miscellaneous	44A EPN only	9928	Environment Protection Notice (EPN)	Current	Premise Match	649m	South

EPA Regulated Premises from www.theLIST.tas.gov.au ©State of Tasmania
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Waste Management & Liquid Fuel Facilities
321-323a Elizabeth Street, North Hobart, TAS 7000



Waste Management and Liquid Fuel Facilities

321-323a Elizabeth Street, North Hobart, TAS 7000

National Waste Management Site Database

Sites on the National Waste Management Site Database within the dataset buffer:

Site Id	Owner	Name	Address	Suburb	Landfill	Reprocess	Transfer	Revision Date	Loc Conf	Dist	Dir
N/A	No records in buffer										

Waste Management Facilities Data Source: Australian Government Geoscience Australia
Creative Commons 3.0 © Commonwealth of Australia <http://creativecommons.org/licenses/by/3.0/au/deed.en>

National Liquid Fuel Facilities

National Liquid Fuel Facilities within the dataset buffer:

Map Id	Owner	Name	Address	Suburb	Class	Operational Status	Operator	Revision Date	Loc Conf	Dist	Dir
45	BP	BP North Hobart	285 Elizabeth Street	North Hobart	Petrol Station	Operational		25/07/2011	Premise Match	150m	South East
81	Caltex	Caltex Hobart	355 Argyle Street	North Hobart	Petrol Station	Operational		25/07/2011	Premise Match	249m	North
118	Shell	Coles Express Hobart	257-269 Elizabeth Street	North Hobart	Petrol Station	Operational		25/07/2011	Premise Match	345m	South East
80	Caltex	Caltex Hobart	176-192 Brooker Highway	North Hobart	Petrol Station	Operational		25/07/2011	Premise Match	493m	North East
46	BP	BP Brooker	200 Brooker Highway	North Hobart	Petrol Station	Operational		25/07/2011	Premise Match	499m	North East
112	Caltex	Jacksons Oil Heating Pty Ltd	12 Warwick Street	Hobart	Petrol Station	Operational		25/07/2011	Premise Match	552m	East
82	Independent Fuel Supplies	Independent North Hobart	431 Elizabeth Street	North Hobart	Petrol Station	Operational		25/07/2011	Premise Match	596m	North West

National Liquid Fuel Facilities Data Source: Geoscience Australia
Creative Commons 3.0 © Commonwealth of Australia <http://creativecommons.org/licenses/by/3.0/au/deed.en>

Service Stations

Service stations from the LIST Points of Interest dataset within the dataset buffer:

Map Id	Name	Distance	Direction
42748	United North Hobart	277m	North
42816	Coles Express Hobart	360m	South East
42727	Caltex Brooker	505m	North East
42726	BP Brooker	513m	North East
43125	Blue Gum Service Station	618m	North West

Points of Interest from www.theLIST.tas.gov.au ©State of Tasmania
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PFAS Investigation and Management Programs

321-323a Elizabeth Street, North Hobart, TAS 7000

Airservices Australia National PFAS Management Program

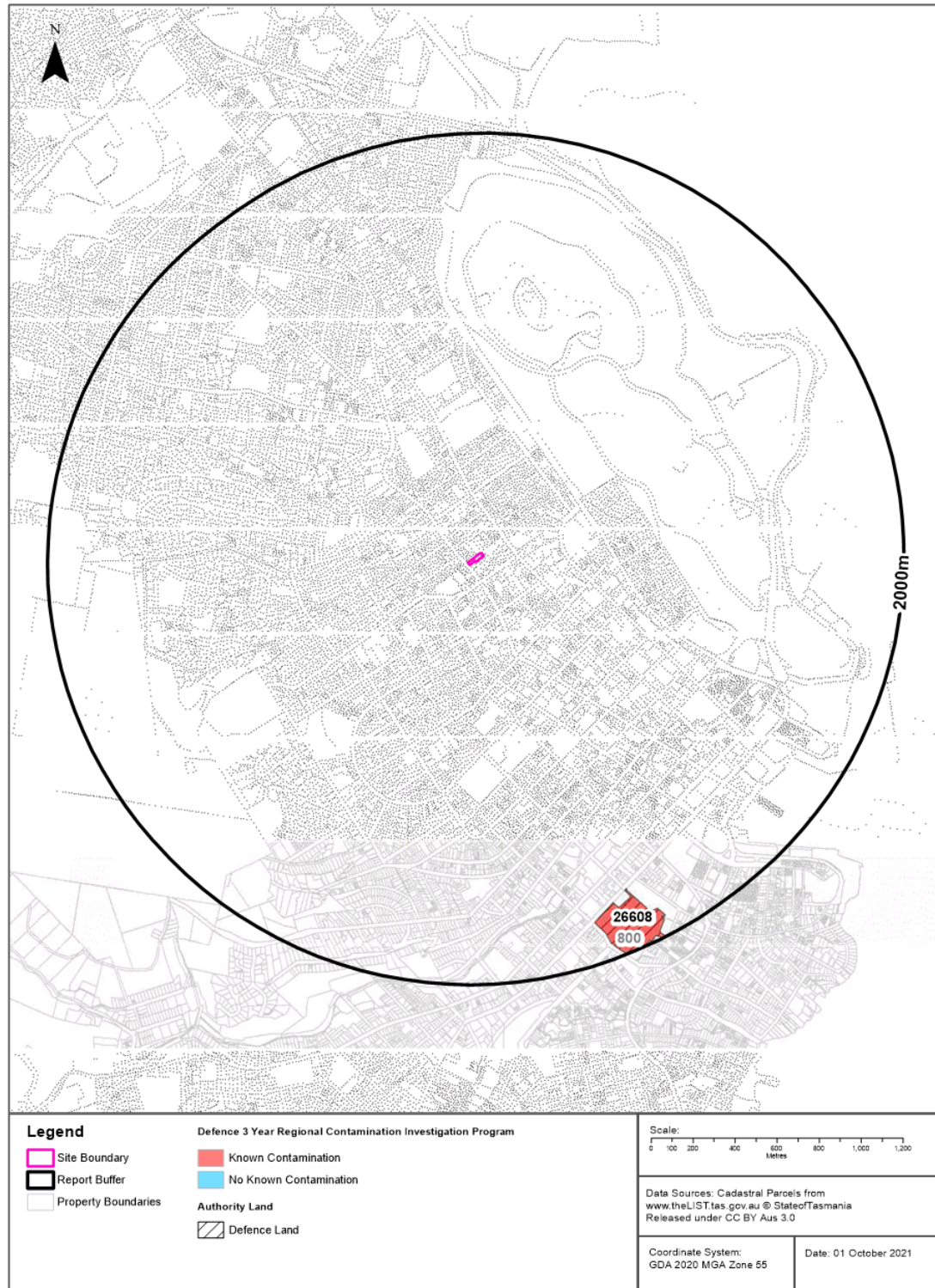
Sites being investigated or managed by Airservices Australia for PFAS contamination within the dataset buffer:

Map Id	Site Name	Impacts	Location Confidence	Distance	Direction
N/A	No records in buffer				

Airservices Australia National PFAS Management Program Data Custodian: Airservices Australia

Defence Owned Land and Defence 3 Year Regional Contamination Investigation Program

321-323a Elizabeth Street, North Hobart, TAS 7000



Defence Sites

321-323a Elizabeth Street, North Hobart, TAS 7000

Defence 3 Year Regional Contamination Investigation Program

Sites which have been assessed as part of the Defence 3 Year Regional Contamination Investigation Program within the dataset buffer:

Property Id	Base Name	Address	Known Contamination	Location Confidence	Distance	Direction
800	Anglesea Barracks - Hobart	Hobart, Tasmania	YES	Premise Match	1713m	South East

Defence 3 Year Regional Contamination Investigation Program, Data Custodian: Department of Defence, Australian Government

Defence Land

Defence land from the LIST Authority Land dataset within the dataset buffer:

Map Id	Title Volume	Title Folio	Location Confidence	Distance	Direction
26608	105609	1	As Supplied	1713m	South East

Authority Land from www.theLIST.tas.gov.au ©State of Tasmania

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Historical Business Directories

321-323a Elizabeth Street, North Hobart, TAS 7000



Historical Business Directories

321-323a Elizabeth Street, North Hobart, TAS 7000

Business Directory Records 1950-1991 Premise or Road Intersection Matches

Universal Business Directory records from years 1950, 1960, 1971, 1984 and 1991, mapped to a premise or road intersection, within the dataset buffer:

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance	Direction
1	FISH MERCHANTS - RETAIL	North Hobart Fish Supply., 323 Elizabeth St., North Hobart. 7000	3824	1991	Premise Match	0m	On-site
	FISH SHOPS	North Hobart Fish Supply., 323 Elizabeth St., North Hobart. 7002.	4250	1984	Premise Match	0m	On-site
	FRUITERERS AND GREENGROCERS	Green Inn. The., 323A Elizabeth St. Hobart	27531	1971	Premise Match	0m	On-site
	FISHMONGERS	North Hobart Fish Supply., 323 Elizabeth St. North Hobart 7000	27338	1971	Premise Match	0m	On-site
	MOTOR CARS & TRUCKS-USED	Autoland, 321 Elizabeth St., North Hobart	4219	1960	Premise Match	0m	On-site
	FRUITERERS & GREENGROCERS	Green Inn, The, 323A Elizabeth St., North Hobart	2600	1960	Premise Match	0m	On-site
	FISHMONGERS	North Hobart Fish Supply, 323 Elizabeth St., North Hobart	2449	1960	Premise Match	0m	On-site
	UPHOLSTERERS	Reis, H., 323A Elizabeth St., North Hobart	5757	1960	Premise Match	0m	On-site
	FISHMONGERS	FLASKAS, J., 323 Elizabeth St., North Hobart	11481	1950	Premise Match	0m	On-site
	FISHMONGERS	Flaskas, J., 323 Elizabeth St., North Hobart	11486	1950	Premise Match	0m	On-site
	POULTERERS	Flaskas, J., 323 Elizabeth St., North Hobart	13429	1950	Premise Match	0m	On-site
	FRUITERERS & GREENGROCERS	Green Inn, The (A. J. Backhouse, Propr.), 323a Elizabeth St., North Hobart	11616	1950	Premise Match	0m	On-site
	GROCERS & GENERAL STOREKEEPERS	Macmillan, W. D. & H., 321 Elizabeth St., North Hobart	12095	1950	Premise Match	0m	On-site
2	HAIRDRESSERS - LADIES &/OR BEAUTY SALONS	Aquarius Hair Design., 325 Elizabeth St., North Hobart. 7000	4262	1991	Premise Match	0m	West
	BAKERS & PASTRYCOOKS	Golden Grain Bakery., 325 Elizabeth St., North Hobart	9987	1950	Premise Match	0m	West
3	HABERDASHERY - RETAIL	Snippets Haberdashery., 319 Elizabeth St., North Hobart. 7000	4252	1991	Premise Match	0m	South West
	CONFECTIONERY SHOPS & MILK BARS	Heffernan, E. M., 319 Elizabeth St., North Hobart	1446	1960	Premise Match	0m	South West
	CONFECTIONERY SHOPS & MILK BARS	Jeffrey, Mrs., 319 Elizabeth St., North Hobart	1449	1960	Premise Match	0m	South West
	CONFECTIONERY SHOPS & MILK BARS	Heffernan, E. M., 319 Elizabeth St., North Hobart	10877	1950	Premise Match	0m	South West
4	BOOKSELLERS - RETAIL	Winnings Newsagency., 317 Elizabeth St., North Hobart. 7000	2818	1991	Premise Match	0m	South East
	NEWSAGENTS	Winnings Newsagency., 317 Elizabeth St., North Hobart. 7000	5398	1991	Premise Match	0m	South East
	MOTOR CAR &/OR TRUCK DEALERS - NEW &/OR USED	O.K. Cars., 317 Elizabeth St., North Hobart. 7002	5436	1984	Premise Match	0m	South East
	MOTOR CAR AND TRUCK DEALERS-USED	O.K. Cars., 317 Elizabeth St., North Hobart	29522	1971	Premise Match	0m	South East
	MOTOR CARS-USED	Ryan's, Peter, O.K. Cars., 317 Elizabeth St., North Hobart	29495	1971	Premise Match	0m	South East
	MOTOR CARS & TRUCKS-USED	Mcgregor's Auto Sales, 317 Elizabeth. St., North Hobart	4229	1960	Premise Match	0m	South East
	FUEL & ICE MERCHANTS	Lincoln, G. J., 317 Elizabeth St., North Hobart	11666	1950	Premise Match	0m	South East
5	MOTOR WINDSCREENS.	Modern Auto Wreckers., 16 Lefroy St., North Hobart. 7002	5804	1984	Premise Match	0m	North East
	MOTOR BODY BUILDERS &/OR REPAIRERS	Smith, Hec. & Son., 18 Lefroy St., North Hobart. 7002	5390	1984	Premise Match	0m	North East
	ENGINEERS - GENERAL &/OR MANUFACTURING &/OR MECHANICAL	Smith, Hec. & Son., 18 Lefroy St., North Hobart. 7002.	4106	1984	Premise Match	0m	North East
	WELDERS.	Smith, Hec. & Son., 18 Lefroy St., North Hobart. 7002.	7130	1984	Premise Match	0m	North East

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance	Direction
5	ENGINEERS-GENERAL, MECHANICAL AND MANUFACTURING	Smith. Hec. & Son., 18 Lefroy St., North Hobart 7000	27092	1971	Premise Match	0m	North East
6	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS	Cooper, Barry Auto Repairs Pty. Ltd., 14 Lefroy St., North Hobart. 7002.	5543	1984	Premise Match	9m	North
	MOTOR GARAGES & ENGINEERS	Cooper, Barry, Auto Repairs., 14 Lefroy St., North Hobart	29641	1971	Premise Match	9m	North
7	BOOKSELLERS &/ OR STATIONERS	Winning, L., 315 Elizabeth St., North Hobart. 7002.	2975	1984	Premise Match	10m	South East
	NEWSAGENTS	North Hobart. Newsagency., 315 Elizabeth St., Hobart	30138	1971	Premise Match	10m	South East
	BOOKSELLERS AND STATIONERS	Winning, Lloyd., 315 Elizabeth St., North Hobart, 7000	25159	1971	Premise Match	10m	South East
	BOOKSELLERS & STATIONERS	Winning, E. G, 315 Elizabeth St., North Hobart	502	1960	Premise Match	10m	South East
	NEWSAGENTS	North Hobart Newsagency., 315 Elizabeth St., Hobart	13249	1950	Premise Match	10m	South East
	BOOKSELLERS & STATIONERS	Winning, E. G., 315 Elizabeth St., North Hobart	10168	1950	Premise Match	10m	South East
8	BUTCHERS - RETAIL	Moore, G., 329 Elizabeth St., North Hobart. 7002.	3180	1984	Premise Match	11m	West
	MODEL ENGINEERS' SUPPLIES	Hobby Shop, The (Sheldon & Gasson, Proprietors), 329 Elizabeth St., North Hobart	4139	1960	Premise Match	11m	West
	MODEL ENGINEERS' SUPPLIES	Hobby Shop, The (Sheldon & Gasson, Proprs.), 329 Elizabeth St., North Hobart	12978	1950	Premise Match	11m	West
9	BUTCHERS	Rogers. H. S., 331 Elizabeth St. North Hobart 7000	25555	1971	Premise Match	18m	West
	BUTCHERS	Lewis, W. E., 331 Elizabeth St., North Hobart	10371	1950	Premise Match	18m	West
10	RESTAURANTS	Marti Zucco., 364 Elizabeth St., North Hobart. 7000	5829	1991	Premise Match	19m	South West
	ELECTRICAL CONTRACTORS	Miller, G. D., 364 Elizabeth St., North Hobart 7000	26888	1971	Premise Match	19m	South West
	ELECTRICAL CONTRACTORS & ELECTRICIANS	Miller, G. D., 364 Elizabeth St., North Hobart	2146	1960	Premise Match	19m	South West
	GROCERS & GENERAL STOREKEEPERS	Youd, C. G., 364A Elizabeth St., North Hobart	3240	1960	Premise Match	19m	South West
	ELECTRICAL CONTRACTORS & ELECTRICIANS	Miller, G. D., 364 Elizabeth St., North Hobart	11301	1950	Premise Match	19m	South West
	GROCERS & GENERAL STOREKEEPERS	Youd, C. G., 364a Elizabeth St., North Hobart	12179	1950	Premise Match	19m	South West
11	CHEMISTS-MANUFACTURING AND WHOLESALE	Davern's Pty. Ltd., 360 Elizabeth St., Hobart 7000	25907	1971	Premise Match	19m	South West
	CHEMISTS-RETAIL	Davern's., 360 Elizabeth St., Hobart 7000	25935	1971	Premise Match	19m	South West
	GIFT SHOPS	Kemp, F. A., 362 Elizabeth St., North Hobart 7000	27813	1971	Premise Match	19m	South West
	HAIRDRESSERS (MEN'S) & TOBACCONISTS	Bell, J., 360 Elizabeth St., North Hobart	3328	1960	Premise Match	19m	South West
	CHEMISTS-MANUFACTURING & WHOLESALE	Davern's Pty. Ltd., 360 Elizabeth St., Hobart	1135	1960	Premise Match	19m	South West
	CHEMISTS-RETAIL	Davern's, 360 Elizabeth St., Hobart	1153	1960	Premise Match	19m	South West
	PRINTERS	Fleetway Printing Service 362 Elizabeth St., North Hobart	4997	1960	Premise Match	19m	South West
	PRINTERS	Fleetway Printing Service, 362 Elizabeth St., North Hobart	5001	1960	Premise Match	19m	South West
	CHINA, CROCKERY, CRYSTAL, EARTHENWARE, ETC.	Kemp, F. A. 362 Elizabeth St., North Hobart	1199	1960	Premise Match	19m	South West
	GIFT SHOPS	Kemp, F. A., 362 Elizabeth St., North Hobart	2834	1960	Premise Match	19m	South West
	JEWELLERS & WATCHMAKERS	Kemp, F. A., 362 Elizabeth St., North Hobart	3755	1960	Premise Match	19m	South West
	HAIRDRESSERS (MEN'S) & TOBACCONISTS	Bell, J., 360 Elizabeth St., North Hobart	12257	1950	Premise Match	19m	South West
	CHINA, CROCKERY, CRYSTAL, EARTHENWARE, ETC.	Kemp, F. A., 362 Elizabeth St., North Hobart	10618	1950	Premise Match	19m	South West
	GIFT SHOPS	Kemp, F. A., 362 Elizabeth St., North Hobart	11791	1950	Premise Match	19m	South West
	JEWELLERS & WATCHMAKERS	Kemp, F. A., 362 Elizabeth St., North Hobart	12610	1950	Premise Match	19m	South West
	JEWELLERS & WATCHMAKERS	KEMP, F. A., 362 Elizabeth St., North Hobart	12600	1950	Premise Match	19m	South West
12	BAKERS	Little Arthur Cake Kitchen., 366 Elizabeth St., North Hobart. 7000	2590	1991	Premise Match	20m	South West

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance	Direction
12	HARDWARE - RETAIL	Stantons Hardware Store., 366 Elizabeth St., North Hobart. 7002	4695	1984	Premise Match	20m	South West
	HARDWARE-RETAIL	Stanton's Hardware Store., 366 Elizabeth St., North Hobart 7000	28394	1971	Premise Match	20m	South West
	GROCERS & GENERAL STOREKEEPERS	Stanton's Hardware Store, 366 Elizabeth St., North Hobart	3208	1960	Premise Match	20m	South West
	HARDWARE-RETAIL	Stanton's Hardware Store, 366 Elizabeth St., North Hobart	3435	1960	Premise Match	20m	South West
	GROCERS & GENERAL STOREKEEPERS	Stanton's Hardware Store., 366 Elizabeth St., North Hobart	12146	1950	Premise Match	20m	South West
	HARDWARE-RETAIL	Stanton's Hardware Store., 366 Elizabeth St., North Hobart	12340	1950	Premise Match	20m	South West
13	CAFES TEA ROOMS &/OR COFFEE LOUNGES	Shiny Moon., 358 Elizabeth St., North Hobart. 7000	3009	1991	Premise Match	22m	South West
	SECOND HAND DEALERS	Lynette (Mrs. E. M. Wicks, Proprss.), 358 Elizabeth St., North Hobart	5278	1960	Premise Match	22m	South West
	SCRAP METAL MERCHANTS	"LYETTE" (Mrs. E. M. Wicks Proprss.), 358 Elizabeth St., North Hobart	13622	1950	Premise Match	22m	South West
	SCRAP METAL MERCHANTS	"Lynette" (Mrs. E. M. Wicks, Proprss.), 358 Elizabeth St., North Hobart	13626	1950	Premise Match	22m	South West
14	SCHOOLS &/OR COLLEGES - BUSINESS &/OR COACHING.	Davis College., 313 Elizabeth St., North Hobart. 7002.	6550	1984	Premise Match	22m	South East
	MUSIC TEACHERS	Mulhearin-Lilley, Elsie., 313 Elizabeth St., North Hobart	30088	1971	Premise Match	22m	South East
	MUSIC TEACHERS	Mulhearin-Lilley, Elsie, 313 Elizabeth St., North Hobart	4629	1960	Premise Match	22m	South East
	NEWSAGENTS	North Hobart Newsagency, 313 Elizabeth St., Hobart	4682	1960	Premise Match	22m	South East
	BOOKMAKERS-REGISTERED	Rush & Gibson, 313A Elizabeth St, North Hobart	460	1960	Premise Match	22m	South East
	BOOKMAKERS-REGISTERED	Rush & Gibson., 313a Elizabeth St., North Hobart	10128	1950	Premise Match	22m	South East
15	BOOT &/OR SHOE RETAILERS.	Bratt, A. T. & Sons., 333 Elizabeth St., North Hobart. 7002	2992	1984	Premise Match	23m	West
	BOOT &/OR SHOE REPAIRERS.	Bratt, A. T. & Sons., 333 Elizabeth St., North Hobart. 7002.	2982	1984	Premise Match	23m	West
	BOOT AND SHOE REPAIRERS	Bratt, A. T., 333 Elizabeth St., North Hobart, 7000	25170	1971	Premise Match	23m	West
	BOOT AND SHOE RETAILERS	Bratt, A. T., 333 Elizabeth St., North Hobart, 7000	25186	1971	Premise Match	23m	West
	BOOT & SHOE RETAILERS	Bratt, A. T, 333 Elizabeth St, North Hobart	547	1960	Premise Match	23m	West
	BOOT & SHOE REPAIRERS	Brett, A. T, 333 Elizabeth St, North Hobart	512	1960	Premise Match	23m	West
	BOOT & SHOE REPAIRERS	Bratt, A. T., 333 Elizabeth St., North Hobart	10175	1950	Premise Match	23m	West
	BOOT & SHOE RETAILERS	Bratt, A. T., 333 Elizabeth St., North Hobart	10205	1950	Premise Match	23m	West
16	CHEMISTS - PHARMACEUTICAL	North Hobart 7 Day Pharmacy., 368 Elizabeth St., North Hobart. 7000	3146	1991	Premise Match	24m	West
	MILK BARS	Olympic Milk Bar., 368 Elizabeth St., North Hobart. 7002	5293	1984	Premise Match	24m	West
	CRUMPET MAKERS	Blue Ribbon, The (A. Collins, Propr.), 368 Elizabeth St., North Hobart	10938	1950	Premise Match	24m	West
17	CARRIERS - INTERSTATE	Blue Ribbon., 12 Lefroy St., North Hobart. 7002.	3383	1984	Premise Match	24m	North
	CARRIERS &/OR CARTAGE CONTRACTORS.	Blue Ribbon., 12 Lefroy St., North Hobart. 7002.	3317	1984	Premise Match	24m	North
	FREIGHT FORWARDERS	Blue Ribbon., 12 Lefroy St., North Hobart. 7002.	4305	1984	Premise Match	24m	North
	PARCEL DELIVERY SPECIALISTS.	Blue Ribbon., 12 Lefroy St., North Hobart. 7002.	5993	1984	Premise Match	24m	North
	CARRIERS &/OR CARTAGE CONTRACTORS.	Flite Way Couriers., 12 Lefroy St., North Hobart. 7002	3330	1984	Premise Match	24m	North
	CARRIERS - INTERSTATE	Flite Way Couriers., 12 Lefroy St., North Hobart. 7002.	3384	1984	Premise Match	24m	North
	FREIGHT FORWARDERS	Flite Way Couriers., 12 Lefroy St., North Hobart. 7002.	4309	1984	Premise Match	24m	North
	PARCEL DELIVERY SPECIALISTS.	Flite Way Couriers., 12 Lefroy St., North Hobart. 7002.	5996	1984	Premise Match	24m	North
	PARCEL DELIVERY SPECIALISTS.	Flite Way., 12 Lefroy St., North Hobart. 7002.	5997	1984	Premise Match	24m	North
	CARRIERS &/OR CARTAGE CONTRACTORS.	Fli-Way., 12 Lefroy St., North Hobart. 7002.	3331	1984	Premise Match	24m	North
	FREIGHT FORWARDERS	Fli-Way., 12 Lefroy St., North Hobart. 7002.	4310	1984	Premise Match	24m	North
	CARRIERS - INTERSTATE	Fli-Way., 12 Lefroy St., North Hobart 7002.	3385	1984	Premise Match	24m	North

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance	Direction
17	CARRIERS - INTERSTATE	Kings Air Cargo., 12 Lefroy St., North Hobart. 7002.	3386	1984	Premise Match	24m	North
	CARRIERS &/OR CARTAGE CONTRACTORS.	Kings Air Cargo., 12 Lefroy St., North Hobart. 7002.	3351	1984	Premise Match	24m	North
	FREIGHT FORWARDERS	Kings Air Cargo., 12 Lefroy St., North Hobart. 7002.	4316	1984	Premise Match	24m	North
	PARCEL DELIVERY SPECIALISTS.	Kings Air Cargo., 12 Lefroy St., North Hobart. 7002.	5998	1984	Premise Match	24m	North
	PARCEL DELIVERY SPECIALISTS.	State Express Parcel Co., 12 Lefroy St., North Hobart. 7002.	6002	1984	Premise Match	24m	North
	CARRIERS - INTERSTATE	State Express Parcel Co., 12 Lefroy St., North Hobart. 7002.	3387	1984	Premise Match	24m	North
	CARRIERS &/OR CARTAGE CONTRACTORS.	State Express Parcel Co., 12 Lefroy St., North Hobart. 7002.	3370	1984	Premise Match	24m	North
	FREIGHT FORWARDERS	State Express Parcel Co., 12 Lefroy St., North Hobart. 7002.	4319	1984	Premise Match	24m	North
18	DELICATESSENS	Leggett, N. T., 356 Elizabeth St., North Hobart	1641	1960	Premise Match	25m	South West
	GROCERS & GENERAL STOREKEEPERS	Leggett, N. T., 356 Elizabeth St., North Hobart	3147	1960	Premise Match	25m	South West
	GROCERS & GENERAL STOREKEEPERS	Leggett, N. T., 356 Elizabeth St., North Hobart	12081	1950	Premise Match	25m	South West
19	BANKS	Savings Bank of Tasmania., 374 Elizabeth St., North Hobart. 7000	2642	1991	Premise Match	29m	West
	BANK	The Savings Bank of Tasmania., 374 Elizabeth St., North Hobart	2780	1984	Premise Match	29m	West
	GROCERS AND GENERAL STOREKEEPERS	Brite-Lites., 374 Elizabeth St. North Hobart 7000	27998	1971	Premise Match	29m	West
	DRY CLEANERS, DYERS & PRESSERS	Blue Bell Services (Agents, Moonah Dry Cleaners), 370 Elizabeth St. North Hobart	1901	1960	Premise Match	29m	West
	GROCERS & GENERAL STOREKEEPERS	Brite-Lites, 374 Elizabeth St., North Hobart	3009	1960	Premise Match	29m	West
	GROCERS & GENERAL STOREKEEPERS	Brite-Lites., 374 Elizabeth St., North Hobart	11972	1950	Premise Match	29m	West
	FRUITERS & GREENGROCERS	Coram's (H. Ceram, Propr.), 372 Elizabeth St., North Hobart	11599	1950	Premise Match	29m	West
	BUTCHERS - RETAIL	Chopping Block., 335 Elizabeth St., North Hobart. 7000	2929	1991	Premise Match	32m	West
20	BUTCHERS	Richardson's Meat Industries Ltd., 335 Elizabeth St. North Hobart 7000	25550	1971	Premise Match	32m	West
	BUTCHERS	Richardson's Meat Industries Ltd., 335 Elizabeth St. North Hobart.	25526	1971	Premise Match	32m	West
	BUTCHERS	Richardson's Choice Provisions Pty. Ltd., 335 Elizabeth St., North Hobart	10394	1950	Premise Match	32m	West
	BUTCHERS	Richardson's Choice Provisions Pty. Ltd., 335 Elizabeth St., North Hobart	10394	1950	Premise Match	32m	West
21	SUPERMARKETS	Purity., 350 Elizabeth St., North Hobart. 7000	6104	1991	Premise Match	32m	South
	PLUMBERS	Patterson, R. & H. Commene., 348 Elizabeth St., North Hobart	13413	1950	Premise Match	32m	South
22	HAIRDRESSERS - LADIES &/OR BEAUTY SALONS	Accent Care & Beauty., 311A Elizabeth St., North Hobart. 7000	4258	1991	Premise Match	35m	South East
	HAIRDRESSERS MENS	Accent Care & Beauty., 311A Elizabeth St., North Hobart. 7000	4338	1991	Premise Match	35m	South East
	HAIRDRESSERS MENS	Ackroyd, Ron., 309 Elizabeth St., North Hobart. 7000	4339	1991	Premise Match	35m	South East
	ANTIQUE DEALERS	Claire's Antique & Curios., 307 Elizabeth St., North Hobart. 7000	2418	1991	Premise Match	35m	South East
	GIFT SHOPS	From Lois With Love., 311 Elizabeth St., North Hobart. 7000	4079	1991	Premise Match	35m	South East
	HAIRDRESSERS (LADIES) AND BEAUTY SALONS	North Hobart Beauty Salon., 311 A Elizabeth St., Hobart 7000	28281	1971	Premise Match	35m	South East
	HAIRDRESSERS (MEN'S) & TOBACCONISTS	Carrick, E. R., 309 Elizabeth St., North Hobart	3335	1960	Premise Match	35m	South East
	BANKS	English, Scottish & Australian Bank Ltd The, 311A Elizabeth St, North Hobart	316	1960	Premise Match	35m	South East
	HAIRDRESSERS (LADIES) & BEAUTY SALONS	North Hobart Beauty Salon, 311A Elizabeth St., Hobart	3317	1960	Premise Match	35m	South East
	CAKE SHOPS	Ye Olde Tuck Shop, 311 Elizabeth St. North Hobart	1008	1960	Premise Match	35m	South East
	HAIRDRESSERS (MEN'S) & TOBACCONISTS	Carrick, E. R., 309 Elizabeth St., North Hobart	12263	1950	Premise Match	35m	South East
	BANKS	English, Scottish & Australian Bank Ltd. The., 307 Elizabeth St., North Hobart	10034	1950	Premise Match	35m	South East
	BANKS	English, Scottish & Australian Bank Ltd. The., 307 Elizabeth St., North Hobart	10034	1950	Premise Match	35m	South East

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance	Direction
22	UPHOLSTERERS	Reis, H., 311a Elizabeth St., North Hobart	14001	1950	Premise Match	35m	South East
23	PICTURE FRAME MFRS &/OR PICTURE FRAMERS	Just Frames., 339 Elizabeth St., North Hobart. 7000	5574	1991	Premise Match	38m	North West
	MILK BARS	Renown Milk Bar., 337 Elizabeth St., North Hobart. 7000	4943	1991	Premise Match	38m	North West
	TAKE - AWAY FOODS	Renown Milk Bar., 337 Elizabeth St., North Hobart. 7000	6257	1991	Premise Match	38m	North West
	FRUITERS AND GREENGROCERS	Renown, The., 337 Elizabeth St. Hobart	27545	1971	Premise Match	38m	North West
	CONFECTIONERY SHOPS & MILK BARS	Renown, The, 337 Elizabeth St., Hobart	1468	1960	Premise Match	38m	North West
	FRUITERS & GREENGROCERS	Renown, The, 337 Elizabeth St., North Hobart	2610	1960	Premise Match	38m	North West
	HAIRDRESSERS (LADIES') & BEAUTY SALONS	PARISIAN BEAUTY SALON., 339 Elizabeth St., North Hobart	12212	1950	Premise Match	38m	North West
	HAIRDRESSERS (LADIES') & BEAUTY SALONS	Parisian Beauty Salon., 339 Elizabeth St., North Hobart	12248	1950	Premise Match	38m	North West
	FRUITERS & GREENGROCERS	Renown, The (Norm Combe, Propr.), 337 Elizabeth St., North Hobart	11644	1950	Premise Match	38m	North West
	CONFECTIONERY SHOPS & MILK BARS	Renown, The (Norm. Combe, Propr.), 337 Elizabeth St., North Hobart	10904	1950	Premise Match	38m	North West
24	MOTOR GARAGES & ENGINEERS	Klann, P. G., 10 Lefroy St., North Hobart	29674	1971	Premise Match	39m	North
	MOTOR GARAGES & ENGINEERS	Klann, P. G., 10 Lefroy St., North Hobart	4333	1960	Premise Match	39m	North
25	CATERERS SUPPLIES	Medhurst Equipment Pty. Ltd., 53 Burnett St., North Hobart. 7000	3087	1991	Premise Match	44m	East
	ELECTRICAL CONTRACTORS SUPPLIES.	Medhurst Equipment Pty. Ltd., 53 Burnett St., Hobart 7000	3968	1984	Premise Match	44m	East
	ELECTRICAL SUPPLIES &/OR APPLIANCES - RETAIL	Medhurst Equipment Pty. Ltd., 53 Burnett St., Hobart 7000	3986	1984	Premise Match	44m	East
	ELECTRICAL APPLIANCE & EQUIPMENT MFRS. & W/SALERS	Medhurst Equipment Pty. Ltd., 53 Burnett St., North Hobart. 7000	3907	1984	Premise Match	44m	East
	FOOD PROCESSING MACHINERY MFRS. &/OR DEALERS	Medhurst Equipment Pty. Ltd., 53 Burnett St., North Hobart. 7002.	4274	1984	Premise Match	44m	East
26	MOTOR ELECTRICIANS	Barrett, Tony Auto Electrician., 45 Burnett St., North Hobart 7002	5467	1984	Premise Match	45m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS	Barrett, Tony Auto Electrician., 45 Burnett St., North Hobart 7002	5519	1984	Premise Match	45m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS	Millington Autos., 45 Burnett St., North Hobart. 7002.	5587	1984	Premise Match	45m	East
27	PAINT ENAMEL VARNISH &/OR STAIN MFRS &/OR IMPS &/OR DIST.	I.C.I. Dulux Trade Centre., 47 Burnett St., North Hobart. 7000	5471	1991	Premise Match	47m	East
	MANUFACTURERS AGENTS	Westport Agencies., 49 Burnett St., North Hobart. 7000	4902	1991	Premise Match	47m	East
	TILES - FLOORING & WALL.	Crosby William & Co. Pty. Ltd., 47 Burnett St., North Hobart. 7002.	6911	1984	Premise Match	47m	East
	BUILDERS SUPPLIES	Crosby, William & Co. Pty. Ltd., 47 Burnett St., North Hobart 7002	3114	1984	Premise Match	47m	East
	MATTRESS &/OR BEDDING MFRS. &/OR DIST.	Sleepezi Bedding Co., 47 Burnett St., North Hobart, 7002	5246	1984	Premise Match	47m	East
	MERCHANTS-GENERAL	Wholesalers (Tas.) Pty. Ltd., 47 Burnett St., Hobart	4096	1960	Premise Match	47m	East
	GROCERS-MANUFACTURING & WHOLESALE	Wholesalers (Tasmania) Pty. Ltd., 47 Burnett St., North Hobart	3248	1960	Premise Match	47m	East
	MERCHANTS-GENERAL	Wholesalers (Tas.) Pty. Ltd., 47 Burnett St., Hobart	12956	1950	Premise Match	47m	East
28	TRAVEL AGENCIES	John Cogan Travel., 341 Elizabeth St., North Hobart. 7000	6393	1991	Premise Match	47m	North West
	BAKERS &/OR PASTRYCOOKS.	Gem Cake Shops, The., 341 Elizabeth St., North Hobart. 7002	2698	1984	Premise Match	47m	North West
	CAKE & SANDWICH SHOPS.	Gem Cake Shops, The., 341 Elizabeth St., North Hobart. 7002.	3240	1984	Premise Match	47m	North West
	CAKE SHOPS	Gem Cake Shops. The (Munley Bros.), 341 Elizabeth St. North, Hobart 7000	25696	1971	Premise Match	47m	North West
	BAKERS AND PASTRYCOOKS	Gem Cake Shops. The (Munley Bros.), 341 Elizabeth St., North Hobart 7000	24917	1971	Premise Match	47m	North West

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance	Direction
28	CAKE SHOPS	Gem Cake Shops, The (Munley Bros.), 341 Elizabeth St. North Hobart	994	1960	Premise Match	47m	North West
	BAKERS & PASTRYCOOKS	Gem Cake Shops, The (Munley Bros.), 341 Elizabeth St. North Hobart	263	1960	Premise Match	47m	North West
	BAKERS & PASTRYCOOKS	GEM THE (Munley Bros. Proprs.), 341 Elizabeth St., North Hobart	9972	1950	Premise Match	47m	North West
	BAKERS & PASTRYCOOKS	Gem, The (Munley Bros. Proprs.), 341 Elizabeth St., North Hobart	9984	1950	Premise Match	47m	North West
	CAKE SHOPS & HOME COOKERIES	Gem, The (Munley Bros. Proprs.), 341 Elizabeth St., North Hobart	10459	1950	Premise Match	47m	North West
29	BANKS	Hobart Savings Bank, The, 376-380 Elizabeth St., North Hobart	326	1960	Road Intersection	48m	West
	BANKS	Hobart Savings Bank, The., 376-380 Elizabeth St., North Hobart	10039	1950	Road Intersection	48m	West
30	ENGINEERS - AIR CONDITIONING	Masters Contracting., 8 Lefroy St., North Hobart 7000	3681	1991	Premise Match	49m	North East
31	BOOKSELLERS - RETAIL	International Book Shop., 63 Burnett St., North Hobart. 7000	2808	1991	Premise Match	52m	South East
	MAP DISTRIBUTORS	International Bookshop., 63 Burnett St., North Hobart 7002	5222	1984	Premise Match	52m	South East
	BOOKSELLERS - TRAVEL & LANGUAGE GUIDES	INTERNATIONAL BOOKSHOP., 63 Burnett St., North Hobart 7000	2976	1984	Premise Match	52m	South East
	BOOKSELLERS &/ OR STATIONERS	International Bookshop., 63 Burnett St., North Hobart.7002	2968	1984	Premise Match	52m	South East
	GIFT SHOPS	Curiosity Shop. The., 67 Burnett St., North Hobart 7000	27806	1971	Premise Match	52m	South East
	CHINA, CROCKERY, CRYSTAL, EARTHENWARE, ETC.	Curiosity Shop., 67 Burnett St., North Hobart 7000	25980	1971	Premise Match	52m	South East
	BONDED AND FREE STORES	Hammond. Frank Pty. Ltd., 67 Burnett St., Hobart 7000	25098	1971	Premise Match	52m	South East
	CHINA, CROCKERY, CRYSTAL, EARTHENWARE, ETC.	Curiosity Shop 67 Burnett St., North Hobart	1195	1960	Premise Match	52m	South East
	FURNITURE-ANTIQUE	Curiosity Shop 67 Burnett St., North Hobart	2749	1960	Premise Match	52m	South East
	ANTIQUE DEALERS	Curiosity Shop, The, 67 Burnett St, North Hobart	100	1960	Premise Match	52m	South East
	GIFT SHOPS	Curiosity Shop, The, 67 Burnett St., North Hobart	2826	1960	Premise Match	52m	South East
	BOTTLE MERCHANTS & DEALERS	Polley, J, 65 Burnett St, North Hobart	573	1960	Premise Match	52m	South East
32	BANKS	ANZ Banking Group Ltd., 378 Elizabeth St., North Hobart. 7000	2613	1991	Premise Match	58m	West
	BANK	Australia & New Zealand Banking Group Ltd., ANZ Savings Bank Ltd., 378 ELIZABETH ST., NORTH Hobart	2747	1984	Premise Match	58m	West
	CHEMISTS-RETAIL	Mcleod. I. B. Pharmacy., 380 Elizabeth St., North Hobart 7000	25950	1971	Premise Match	58m	West
	CHEMISTS-RETAIL	Mcleod, I. B., Pharmacy 380 Elizabeth St., Hobart	1142	1960	Premise Match	58m	West
	CHEMISTS-RETAIL	Mcleod, I. B., Pharmacy, 380 Elizabeth St., Hobart	1166	1960	Premise Match	58m	West
	CHEMISTS-RETAIL	Bank Pharmacy, The (G. Malcolm Moore & Son, Proprs.), 380 Elizabeth St., Hobart	10578	1950	Premise Match	58m	West
	CHEMISTS-RETAIL	BANK PHARMACY, THE (G. Malcolm Moore & Son, Proprs.), 380 Elizabeth St., North Hobart	10571	1950	Premise Match	58m	West
33	CAFES TEA ROOMS &/OR COFFEE LOUNGES	Argyle Coffee Shop., 280 Argyle St., North Hobart. 7000	2985	1991	Premise Match	58m	East
	CATERERS	Argyle Coffee Shop., 280 Argyle St., North Hobart. 7000	3083	1991	Premise Match	58m	East
	BUILDERS &/OR BUILDING CONTRACTORS	Williams, D., 282 Argyle St., North Hobart. 7000	2869	1991	Premise Match	58m	East
	TIMBER MERCHANTS &/OR SAWMILLERS	Williams, D., 282 Argyle St., North Hobart. 7000	6350	1991	Premise Match	58m	East
	CAFES, MILK BARS &/OR SNACK BARS.	Argyle Coffee Shop., 280 Argyle St., North Hobart. 7002.	3221	1984	Premise Match	58m	East
	PETROL PUMP INSTALLATIONS &/OR SERVICE CONTRACTORS.	Kelvinator (Aust.) Petroleum Equipment Div., 282A Argyle St., Hobart 7000	6018	1984	Premise Match	58m	East
	PUMPS &/OR PUMPING EQUIPMENT.	Kelvinator (Aust.) Petroleum Equipment Div., 282A Argyle St., Hobart 7000	6307	1984	Premise Match	58m	East
	JOINERY MANUFACTURERS	Williams, D., 282 Argyle St., Hobart 7000	5069	1984	Premise Match	58m	East
	TIMBER MERCHANTS	Williams, D., 282 Argyle St., Hobart 7000	6935	1984	Premise Match	58m	East

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance	Direction
33	BUILDERS &/OR BUILDING CONTRACTORS.	Williams, D., 282 Argyle St., Hobart. 7000	3105	1984	Premise Match	58m	East
	WOODWORKERS AND TURNERS	Colonial Wood Turning., 282 Argyle St., Hobart	31968	1971	Premise Match	58m	East
	BUILDERS & BUILDING CONTRACTORS	Williams D., 282 Argyle St., Hobart 7000	25314	1971	Premise Match	58m	East
	TIMBER MERCHANTS	Williams, D., 282 Argyle St., Hobart	31564	1971	Premise Match	58m	East
	JOINERY MNFRS.	Williams, D., 282 Argyle St., Hobart	28869	1971	Premise Match	58m	East
	BUILDERS' SUPPLIES	Williams, D., 282 Argyle St., Hobart 7000	25468	1971	Premise Match	58m	East
	TIMBER MERCHANTS	Williams, D., 282 Argyle St, Hobart	5599	1960	Premise Match	58m	East
	BUILDERS & BUILDING CONTRACTORS	Williams, D., 282 Argyle St, Hobart.	654	1960	Premise Match	58m	East
	JOINERY MANUFACTURERS	Williams, D., 282 Argyle St., Hobart	3821	1960	Premise Match	58m	East
	BUILDERS & BUILDING CONTRACTORS	Williams, D., 282 Argyle St., Hobart	10315	1950	Premise Match	58m	East
	JOINERY MANUFACTURERS	Williams, D., 282 Argyle St., Hobart	12654	1950	Premise Match	58m	East
	TIMBER MERCHANTS	Williams, D., 282 Argyle St., Hobart	13858	1950	Premise Match	58m	East
34	GOVERNMENT DEPARTMENTS	C.E.S., 345 Elizabeth St., North Hobart. 7000	4122	1991	Premise Match	58m	North West
	BUTCHERS - RETAIL	Jacobson, A., 343 Elizabeth St., North Hobart. 7000	2940	1991	Premise Match	58m	North West
	BUTCHERS - RETAIL	Jacobson, A., 343 Elizabeth St., North Hobart. 7002.	3170	1984	Premise Match	58m	North West
	GROCERS AND GENERAL STOREKEEPERS	Howard, F., 345 Elizabeth St. North Hobart 7000	28072	1971	Premise Match	58m	North West
	CONFECTIONERY SHOPS AND MILK BARS	Howard, F., 345 Elizabeth St., North. Hobart	26250	1971	Premise Match	58m	North West
	CONFECTIONERY SHOPS & MILK BARS	Howard, F., 345 Elizabeth St. North Hobart	1448	1960	Premise Match	58m	North West
	GROCERS & GENERAL STOREKEEPERS	Howard, F., 345 Elizabeth St., North Hobart	3126	1960	Premise Match	58m	North West
	BUTCHERS	Wignalls Meats Pty. Ltd., 343 Elizabeth St., North. Hobart	853	1960	Premise Match	58m	North West
	GROCERS & GENERAL STOREKEEPERS	Howard, F., 345 Elizabeth St., North Hobart	12052	1950	Premise Match	58m	North West
	BUTCHERS	Wignall, B., 343 Elizabeth St., North Hobart	10406	1950	Premise Match	58m	North West
35	TRADE UNIONS	Australian Workers Union., 6 Lefroy St., North Hobart. 7000	6377	1991	Premise Match	60m	North East
	TRADE UNIONS.	Australian Workers Union., 6 Lefroy St., North Hobart. 7002.	6977	1984	Premise Match	60m	North East
	BAKERS &/OR PASTRYCOOKS.	Top Taste Quality Cakes., 6A Lefroy St., North Hobart. 7002.	2706	1984	Premise Match	60m	North East
36	FURNITURE DEALERS - SECONDHAND	Boomerang Pre-Owned Furniture., 303 Elizabeth St., North Hobart. 7000	3986	1991	Premise Match	61m	South
	CHINA CROCKERY, CRYSTAL, CUTLERY, EARTHENWARE, GLASSWARE DEALERS.	Curiosity Shop., 305 Elizabeth St., North Hobart. 7002.	3491	1984	Premise Match	61m	South
	GIFT SHOPS	Curiosity Shop., 305 Elizabeth St., North Hobart. 7002.	4464	1984	Premise Match	61m	South
	ANTIQUE SHOPS	Curiosity Shop., 305 Elizabeth St., Hobart 7000	24742	1971	Premise Match	61m	South
	GROCERS AND GENERAL STOREKEEPERS	Pipkin, K., 305 Elizabeth St., North Hobart 7000	28124	1971	Premise Match	61m	South
	LAWN MOWER REPAIRERS & SHARPENERS	Mcdougall Mower Ltd., 303 Elizabeth St., Hobart	3855	1960	Premise Match	61m	South
	LAWN MOWERS-MOTORISED SALES AND SERVICE	Mcdougall Mower Service, 303 Elizabeth St., Hobart	3860	1960	Premise Match	61m	South
	CAKE SHOPS	Pipkin, K., 305 Elizabeth St. North Hobart	1002	1960	Premise Match	61m	South
	GROCERS & GENERAL STOREKEEPERS-	Pipkin, K., 305 Elizabeth St., North Hobart	3179	1960	Premise Match	61m	South
	CAKE SHOPS & HOME COOKERIES	Pipkin, K., 305 Elizabeth St., North Hobart	10468	1950	Premise Match	61m	South
	FRUITERERS & GREENGROCERS	Pipkin, K., 305 Elizabeth St., North Hobart	11642	1950	Premise Match	61m	South
	GROCERS & GENERAL STOREKEEPERS	PIPKIN, K., 305 Elizabeth St., North Hobart	11947	1950	Premise Match	61m	South
	GROCERS & GENERAL STOREKEEPERS	Pipkin, K., 305 Elizabeth St., North Hobart	12127	1950	Premise Match	61m	South
	GROCERS & GENERAL STOREKEEPERS	Pipkin, K., 305 Elizabeth St., North Hobart	12127	1950	Premise Match	61m	South

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance	Direction
36	LAUNDRIES	Wah Shiny., 303 Elizabeth St., North Hobart	12762	1950	Premise Match	61m	South
37	BOOKSELLERS - RETAIL	Alice's Book Shop., Palfreymans Arc., 344 Elizabeth St., North Hobart. 7000	2796	1991	Premise Match	65m	South
	HAIRDRESSERS - LADIES &/OR BEAUTY SALONS	Cottage Cut., 6, Palfreymans Arc., 344 Elizabeth St., North Hobart. 7000	4270	1991	Premise Match	65m	South
	FLORISTS - RETAIL	Cottage Flowers., Palfreymans Arc., Elizabeth St., North Hobart. 7000	3853	1991	Premise Match	65m	South
	BOOKBINDERS &/OR PAPER RULERS.	Quality Bindings., 342 Elizabeth St., North Hobart. 7002.	2948	1984	Premise Match	65m	South
	PRINTERS	Addison Printing Co. Pty. Ltd., 342 Elizabeth St., Hobart	30607	1971	Premise Match	65m	South
	CHEMISTS-RETAIL	Palfreyman's Pharmacy., 340 Elizabeth St., North Hobart 7000	25953	1971	Premise Match	65m	South
	GARDEN SUPPLIES	Tassie Garden Supplies., 342 Elizabeth St., Hobart 7000	27788	1971	Premise Match	65m	South
	HARDWARE-RETAIL	Fitzpatrick J. A., 344 Elizabeth St., North Hobart	3412	1960	Premise Match	65m	South
	GROCERS & GENERAL STOREKEEPERS	Fitzpatrick, J. A., 342 Elizabeth St., North Hobart	3053	1960	Premise Match	65m	South
	CHEMISTS-RETAIL	Palfreyman & Son (L. W. Palfreyman & C. A. Robertson), 340 Elizabeth St., North Hobart	1167	1960	Premise Match	65m	South
	GARDEN SUPPLIES	Tassie Garden Supplies, 342 Elizabeth St., Hobart	2816	1960	Premise Match	65m	South
	SEEDSMEN & NURSEYMEN	Tassie Garden Supplies, 342 Elizabeth St., Hobart	5304	1960	Premise Match	65m	South
	GROCERS & GENERAL STOREKEEPERS	Fitzpatrick, J. A., 342 Elizabeth St., North Hobart	12021	1950	Premise Match	65m	South
	CHEMISTS-RETAIL	Palfreyman & Son (L. W. Palfreyman & C. A. Robertson), 340 Elizabeth St., North Harbort	10594	1950	Premise Match	65m	South
38	OFFICE EQUIPMENT &/OR SUPPLIES MFRS &/OR IMPS &/OR W/SALERS	Collins, Max Workspace., 43 Burnett St., North Hobart. 7000	5419	1991	Premise Match	68m	East
39	WELDERS.	Mass Welding., 3 Pitt St., North Hobart. 7002.	7123	1984	Premise Match	70m	West
	MARINE EQUIPMENT MFRS. &/OR DIST.	Plastic Fabrication & Sales., 3 Pitt St., North Hobart. 7002	5228	1984	Premise Match	70m	West
	BOAT WINDOWS & WINDSCREENS.	Plastic Fabrication & Sales., 3 Pitt St., North Hobart. 7002.	2931	1984	Premise Match	70m	West
	FIBRE GLASS PRODUCTS MFRS. &/OR DIST.	Plastic Fabrication & Sales., 3 Pitt St., North Hobart. 7002.	4197	1984	Premise Match	70m	West
	PHOTOGRAPHIC EQUIPMENT &/OR SUPPLIES.	Plastic Fabrication & Sales., 3 Pitt St., North Hobart. 7002.	6087	1984	Premise Match	70m	West
	PLASTIC FABRICATORS.	Plastic Fabrication & Sales., 3 Pitt St., North Hobart. 7002.	6140	1984	Premise Match	70m	West
	PLASTIC ILLUMINATED SIGN MFRS.	Plastic Fabrication & Sales., 3 Pitt St., North Hobart. 7002.	6143	1984	Premise Match	70m	West
	PLASTIC MOULDERS.	Plastic Fabrication & Sales., 3 Pitt St., North Hobart. 7002.	6147	1984	Premise Match	70m	West
	PLASTICS.	Plastic Fabrication & Sales., 3 Pitt St., North Hobart. 7002.	6158	1984	Premise Match	70m	West
	PLUMBERS SUPPLIES.	Plastic Fabrication & Sales., 3 Pitt St., North Hobart. 7002.	6217	1984	Premise Match	70m	West
	SIGNWRITERS.	Plastic Fabrication & Sales., 3 Pitt St., North Hobart. 7002.	6637	1984	Premise Match	70m	West
	CONFECTIONERS - MFRS. &/OR W/SALERS.	Robbies Confectionery., 3 Pitt St., North Hobart. 7002.	3678	1984	Premise Match	70m	West
	GROCERS & GENERAL STOREKEEPERS	Collins, G. L., 382 Elizabeth St., North Hobart	11993	1950	Premise Match	70m	West
40	TRADE UNIONS	Electrical Trades Union., 4 Lefroy St., North Hobart. 7000	6379	1991	Premise Match	73m	North East
	SIGNWRITERS	H.B. Signs Pty. Ltd., 4A Lefroy St., North Hobart. 7000	5993	1991	Premise Match	73m	North East
	STEEL FABRICATORS	Ostro Engineering., 4A Lefroy St., North Hobart. 7000	6064	1991	Premise Match	73m	North East
	TRADE UNIONS.	Electrical Trade Union., 4 Lefroy St., North Hobart. 7002.	6979	1984	Premise Match	73m	North East
	SIGNWRITERS.	H.B. Signs, (Harvey William & Robyn Patricia Burns., 4A Lefroy St., North Hobart. 7002.	6631	1984	Premise Match	73m	North East
	STEEL FABRICATORS.	Ostroversnik M. & M., 4A Lefroy St., North Hobart. 7002.	6721	1984	Premise Match	73m	North East
	MANUFACTURERS' REPRESENTATIVES	Barrett & Maher Pty. Ltd., 4 Lefroy St., North Hobart	29032	1971	Premise Match	73m	North East

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance	Direction
40	FRUIT AND VEGETABLE MERCHANTS-WHOLESALE	Growers Selling Agency., 4 Lefroy St., North Hobart 7000	27471	1971	Premise Match	73m	North East
	VALVES	Wagg. H. & H. J., Pty. Ltd., 4 Lefroy St., North Hobart	31796	1971	Premise Match	73m	North East
41	COMPUTER SALES &/OR SERVICE	Long, Langlois & Johnstone., 41 Burnett St., North Hobart. 7000	3351	1991	Premise Match	74m	East
	MUSICAL INSTRUMENT &/OR SHEET MUSIC DEALERS	Long, Langlois & Johnstone., 41 Burnett St., North Hobart. 7000	5353	1991	Premise Match	74m	East
	PIANO TUNERS &/OR REPAIRERS.	Long, Langlois & Johnstone., 41 Burnett St., North Hobart. 7002.	6096	1984	Premise Match	74m	East
	MUSICAL INSTRUMENT & MUSIC SELLERS.	Long, Langlois & Johnstone., 41 Burnett St., North Hobart. 7002.	5821	1984	Premise Match	74m	East
	MUSICAL INSTRUMENTS AND SHEET MUSIC	Long, Langlois & Johnstone., 41 Burnett St., North Hobart	30097	1971	Premise Match	74m	East
	PIANO TUNERS AND REPAIRERS	Long, Langlois & Johnstone., 41 Burnett St., North Hobart	30434	1971	Premise Match	74m	East
42	DELICATESENS	Maddock, L. G. 301 Elizabeth St., Hobart	1643	1960	Premise Match	74m	South
43	ELECTRICAL APPLIANCE REPAIR &/ORSERVICE AGENTS	B & W Appliance Repairs., 284A Argyle St., North Hobart. 7000	3603	1991	Premise Match	82m	North East
	ELECTRICAL APPLIANCES - REPAIRS &/OR SERVICE AGENTS.	B & W Appliance Repairs., 284A Argyle St., Hobart 7000	3917	1984	Premise Match	82m	North East
44	PET SHOPS	Dog & Cat Deli., 386 Elizabeth St., North Hobart. 7000	5498	1991	Premise Match	82m	West
	CHEMISTS - PHARMACEUTICAL	Ramsdale, Michael Pharmacy., 384 Elizabeth St., North Hobart. 7000	3148	1991	Premise Match	82m	West
	CLOTHING - RETAIL - SECONDHAND	Second-hand Rose., 384A Elizabeth St., North Hobart. 7000	3281	1991	Premise Match	82m	West
	CHEMISTS - PHARMACEUTICAL.	Mcleod, I. B. Pharmacy., 384 Elizabeth St., North Hobart. 7002.	3462	1984	Premise Match	82m	West
	PASTRYCOOKS	Golden Crust Bakery Pty. Ltd. The., 384 Elizabeth St., Hobart	30354	1971	Premise Match	82m	West
	BAKERS AND PASTRYCOOKS	Golden Crust Bakery Pty. Ltd. The., 384 Elizabeth St., Hobart 7000	24920	1971	Premise Match	82m	West
	BAKERS & PASTRYCOOKS	Golden Crust Bakery Pty. Ltd The, 384 Elizabeth St., Hobart	267	1960	Premise Match	82m	West
	PASTRYCOOKS	Golden Crust Bakery Pty. Ltd., The, 384 Elizabeth St., Hobart	4825	1960	Premise Match	82m	West
	BABY CARRIAGE IMPORTERS & DEALERS	The Golden Crust Bakery Pty. Ltd. 384 Elizabeth St, North Hobart	244	1960	Premise Match	82m	West
	BUTCHERS	Willing Bros., 386 Elizabeth St., North Hobart	854	1960	Premise Match	82m	West
	BAKERS & PASTRYCOOKS	Golden Crust Bakery, The., 384 Elizabeth St., North Hobart	9986	1950	Premise Match	82m	West
	BUTCHERS	Willing Bros., 386 Elizabeth St., North Hobart	10408	1950	Premise Match	82m	West
45	ALUMINIUM PRODUCTS MFRS &/OR DIST	Barrenger Glass., 286 Argyle St., North Hobart. 7000	2408	1991	Premise Match	87m	North East
	GLASS MERCHANTS &/OR GLAZIERS	Barrenger Glass., 286 Argyle St., North Hobart. 7000	4097	1991	Premise Match	87m	North East
	GLAZIERS	Giffords Glass Pty Ltd., 286 Argyle St., Hobart 7000	4491	1984	Premise Match	87m	North East
	SHOP AND OFFICE FITTERS	Farkas. G. F. Glass Merchant Pty. Ltd., 286 Argyle St., North Hobart	31145	1971	Premise Match	87m	North East
	GLASS BEVELLERS AND SILVERERS	Farkas. G. Glass Merchant Pty. Ltd., 286 Argyle St., Hobart 7000	27826	1971	Premise Match	87m	North East
	GLASS MERCHANTS	Farkas. G. Glass Merchant Pty. Ltd., 286 Argyle St., North Hobart 7000	27836	1971	Premise Match	87m	North East
	GLASS MERCHANTS	Farkas, G., Glass Merchant Pty. Ltd., 286 Argyle St., Hobart	2848	1960	Premise Match	87m	North East
	GLASS REVELLERS & SILVERERS	Farkas, G., Glass Merchant Pty. Ltd., 286 Argyle St., Hobart	2842	1960	Premise Match	87m	North East
	DRESSMAKERS & COSTUMIERS	Holloway, R. B., 288 Argyle St., Hobart	11162	1950	Premise Match	87m	North East
46	FRUITERERS &/OR GREENGROCERS	Seven Day Super Store., 349 Elizabeth St., North Hobart. 7000	3963	1991	Premise Match	87m	North West
	CONFECTIONERY SHOPS AND MILK BARS	Lee. T., 349 Elizabeth St. Hobart	26251	1971	Premise Match	87m	North West
	FRUITERERS AND GREENGROCERS	Lee. T., 349 Elizabeth St., North Hobart 7000	27539	1971	Premise Match	87m	North West
	FRUITERERS & GREENGROCERS	Lee, T., 349 Elizabeth St. Hobart	2606	1960	Premise Match	87m	North West

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance	Direction
46	CONFECTIONERY SHOPS & MILK BARS	Lee, T., 349 Elizabeth St., North. Hobart	1453	1960	Premise Match	87m	North West
	CONFECTIONERY SHOPS & MILK BARS	Bremfield, T., 349 Elizabeth St., North Hobart	10835	1950	Premise Match	87m	North West
	FRUITERS & GREENGROCERS	Bremfield, T., 349 Elizabeth St., North Hobart	11586	1950	Premise Match	87m	North West
47	MOTOR PAINTERS &/OR PANEL BEATERS	Lefroy Body Works., 25 Lefroy St., North Hobart. 7002	5689	1984	Premise Match	88m	North West
	MOTOR BODY BUILDERS &/OR REPAIRERS	Lefroy Body Works., 25 Lefroy St., North Hobart. 7002	5382	1984	Premise Match	88m	North West
	WASHING MACHINE SERVICE ENGINEERS	Bendix Service, 25 Lefroy St., Hobart	5802	1960	Premise Match	88m	North West
48	MEDICAL PRACTITIONERS	Corney, Dr. A. D., 39 Burnett St., North Hobart	29161	1971	Premise Match	92m	East
	MEDICAL PRACTITIONERS	Watson, R. R., 39 Burnett St., North Hobart	29233	1971	Premise Match	92m	East
	DOCTORS	Corney, Dr. A. C. D., 39 Burnett St., North Hobart	1750	1960	Premise Match	92m	East
	DOCTORS	Walters, Dr. D. J., 39 Burnett St., North Hobart	1840	1960	Premise Match	92m	East
	HOSPITALS, NURSING HOMES, REGISTERED NURSES, ETC.	Wilson, Nurse E., 39 Burnett St., Hobart	3510	1960	Premise Match	92m	East
	HOSPITALS, NURSING HOMES, REGISTERED NURSES, ETC	Wilson, Nurse E., 39 Burnett St., Hobart	12408	1950	Premise Match	92m	East
49	MOTOR GARAGES & SERVICE STATIONS	BP Argyle Service Station., 290 Argyle St., North Hobart. 7000	5161	1991	Premise Match	95m	North East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS	BP Argyle., 290 Argyle St., Hobart 7000	5526	1984	Premise Match	95m	North East

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Business Directory Records 1950-1991 Road or Area Matches

Universal Business Directory records from years 1950, 1960, 1971, 1984 and 1991, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published.

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance
50	ACCOUNTANTS & AUDITORS	Accounting & Financial Services Pty. Ltd., 5, Palfreyman Place., Elizabeth St., North Hobart. 7000	2326	1991	Road Match	9m
	CHURCHES	St. James Elizabeth St., North Hobart	1230	1960	Road Match	9m
	CHURCHES	Baptist Church., Elizabeth St., North Hobart	10639	1950	Road Match	9m
	GOVERNMENT DEPARTMENTS	Post Offices G.P.O., Elizabeth St., North Hobart	11875	1950	Road Match	9m
	CHURCHES	St. James., Elizabeth St., North Hobart	10659	1950	Road Match	9m
51	BOTTLE MERCHANTS & DEALERS	Lansky, J. R., 24 Little Arthur St, North Hobart	571	1960	Road Match	55m
52	BOOKBINDERS	Quality Bindings., 31 Lefroy St., North Hobart 7000	25100	1971	Road Match	77m
	BOOKBINDERS AND PAPER RULERS	Quality Bindings., 31 Lefroy St., North Hobart, 7000	25108	1971	Road Match	77m
53	INSURANCE ASSESSORS & LOSS ADJUSTERS	Probe Adjusting., 21 Burnett St., North Hobart. 7000	4630	1991	Road Match	89m
	FUEL & ICE MERCHANTS	Waller, W., Junr., 17 Burnett St, Hobart	2689	1960	Road Match	89m
	FUEL & ICE MERCHANTS	Waller, W, Junr., 17 Burnett St., Hobart	11681	1950	Road Match	89m

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Dry Cleaners, Motor Garages & Service Stations

321-323a Elizabeth Street, North Hobart, TAS 7000



Historical Business Directories

321-323a Elizabeth Street, North Hobart, TAS 7000

Dry Cleaners, Motor Garages & Service Stations 1950-1991 Premise or Road Intersection Matches

Dry Cleaners, Motor Garages & Service Stations from UBD Business Directories for years 1950, 1960, 1971, 1984 and 1991, mapped to a premise or road intersection, within the dataset buffer:

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance	Direction
1	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS	Cooper, Barry Auto Repairs Pty. Ltd., 14 Lefroy St., North Hobart. 7002.	5543	1984	Premise Match	9m	North
	MOTOR GARAGES & ENGINEERS	Cooper, Barry, Auto Repairs., 14 Lefroy St., North Hobart	29641	1971	Premise Match	9m	North
2	DRY CLEANERS, DYERS & PRESSERS	Blue Bell Services (Agents, Moonah Dry Cleaners), 370 Elizabeth St. North Hobart	1901	1960	Premise Match	29m	West
3	MOTOR GARAGES & ENGINEERS	Klann, P. G., 10 Lefroy St., North Hobart	29674	1971	Premise Match	39m	North
	MOTOR GARAGES & ENGINEERS	Klann, P. G., 10 Lefroy St., North Hobart	4333	1960	Premise Match	39m	North
4	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS	Barrett, Tony Auto Electrician., 45 Burnett St., North Hobart 7002	5519	1984	Premise Match	45m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS	Millington Autos., 45 Burnett St., North Hobart. 7002.	5587	1984	Premise Match	45m	East
5	MOTOR GARAGES & SERVICE STATIONS	BP Argyle Service Station., 290 Argyle St., North Hobart. 7000	5161	1991	Premise Match	95m	North East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS	BP Argyle., 290 Argyle St., Hobart 7000	5526	1984	Premise Match	95m	North East
6	DRY CLEANERS & PRESSERS	North Hobart Dry Cleaners., 359 Elizabeth St., North Hobart. 7000	3547	1991	Premise Match	118m	North West
7	MOTOR GARAGES & SERVICE STATIONS	BP North Hobart Service Station., 283 Elizabeth St., North Hobart 7000	5169	1991	Premise Match	150m	South East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS	BP North Hobart Service Station., 283 Elizabeth St., North Hobart. 7002	5533	1984	Premise Match	150m	South East
8	MOTOR GARAGES & ENGINEERS	Devine, C. A., 60 George St., North Hobart	29651	1971	Premise Match	191m	North East
9	MOTOR GARAGES & SERVICE STATIONS	Short, David Automotive., 320 Elizabeth St., North Hobart. 7000	5227	1991	Premise Match	197m	South
10	DRY CLEANERS, DYERS AND PRESSERS	Lyke-Nu Pty. Ltd., 275 Elizabeth St., Hobart 7000	26599	1971	Premise Match	229m	South East
11	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS	Miller's Motors., 38 Newdegate St., North Hobart. 7002.	5586	1984	Premise Match	235m	West
12	MOTOR GARAGES & ENGINEERS	North-Bound Service Station., 318 Argyle St., Hobart	29694	1971	Premise Match	239m	North
	MOTOR SERVICE STATIONS	North-Bound Service Station., 318- Argyle St., Hobart	29946	1971	Premise Match	239m	North
	MOTOR SERVICE STATIONS	North-Bound Service Station 318 Argyle St., Hobart	4494	1960	Premise Match	239m	North
	MOTOR GARAGES & ENGINEERS	North-Bound Service Station, 318 Argyle St., Hobart	4347	1960	Premise Match	239m	North
	MOTOR SERVICE STATIONS	North-Bound. Service Station, 318 Argyle St., Hobart	4548	1960	Premise Match	239m	North
13	MOTOR GARAGES & SERVICE STATIONS	Caltex Federal Special Vehicles Centre., 357 Argyle St., North Hobart. 7000	5176	1991	Premise Match	249m	North
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS	Locke & Mason Service Centre., 357 Argyle St., Hobart 7000	5578	1984	Premise Match	249m	North

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**Dry Cleaners, Motor Garages & Service Stations 1950-1991
Road or Area Matches**

Dry Cleaners, Motor Garages & Service Stations from UBD Business Directories for years 1950, 1960, 1971, 1984 and 1991, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published.

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance
	No records in buffer					

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Aerial Imagery 2016

321-323a Elizabeth Street, North Hobart, TAS 7000



Aerial Imagery 2013

321-323a Elizabeth Street, North Hobart, TAS 7000



Aerial Imagery 2005

321-323a Elizabeth Street, North Hobart, TAS 7000



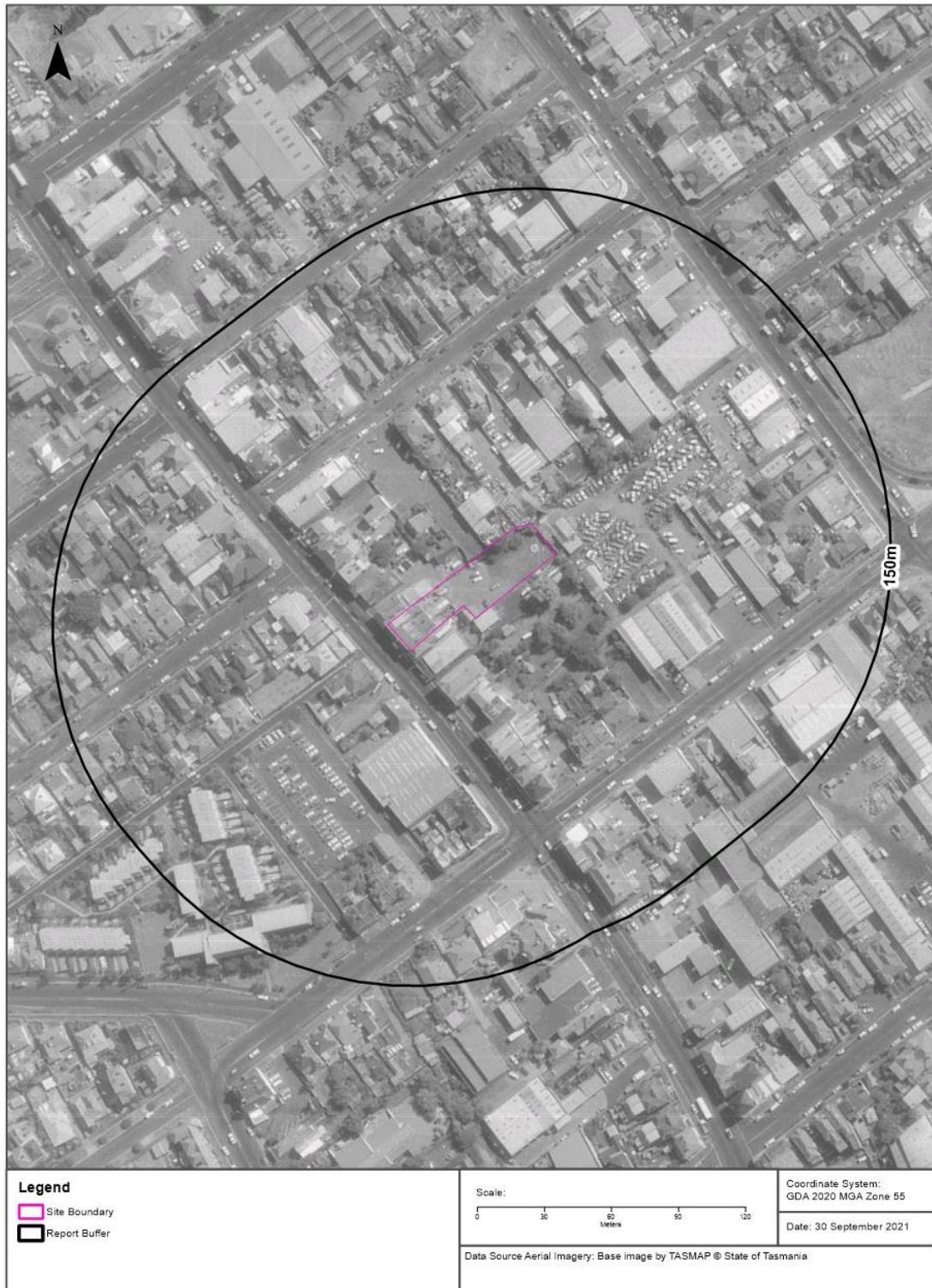
Aerial Imagery 1997

321-323a Elizabeth Street, North Hobart, TAS 7000



Aerial Imagery 1986

321-323a Elizabeth Street, North Hobart, TAS 7000



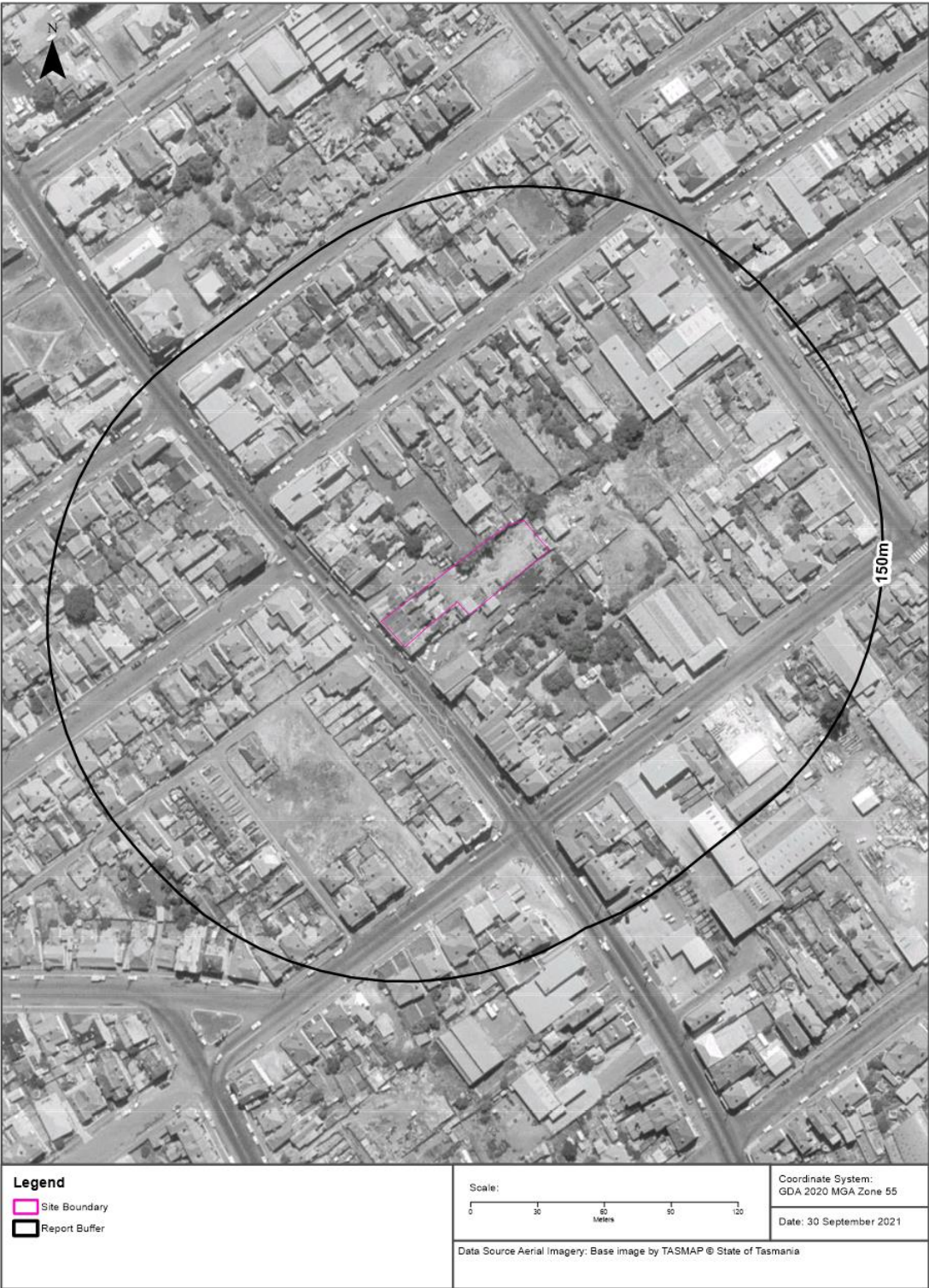
Aerial Imagery 1977

321-323a Elizabeth Street, North Hobart, TAS 7000



Aerial Imagery 1967

321-323a Elizabeth Street, North Hobart, TAS 7000



Aerial Imagery 1957

321-323a Elizabeth Street, North Hobart, TAS 7000



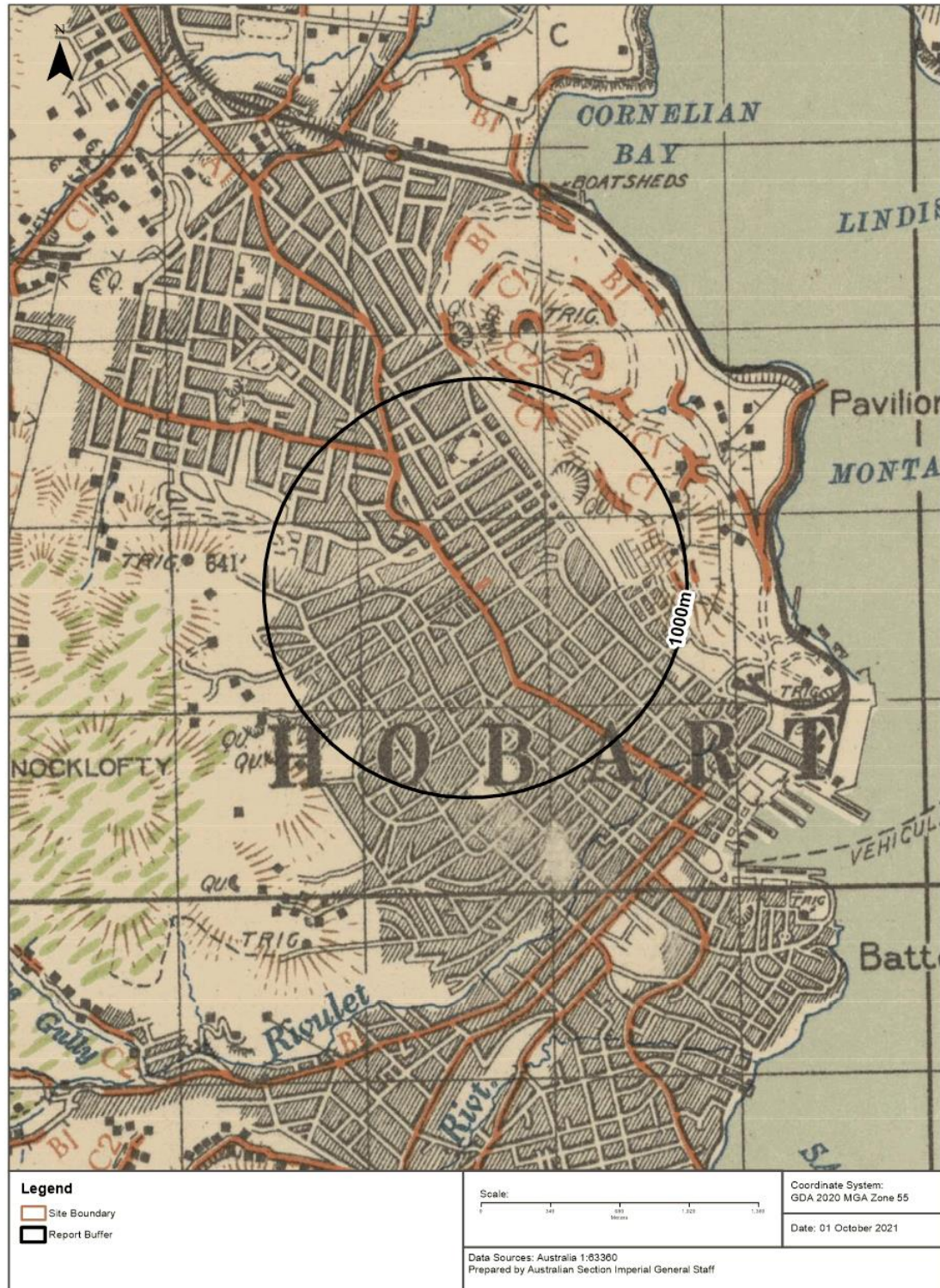
Aerial Imagery 1946

321-323a Elizabeth Street, North Hobart, TAS 7000



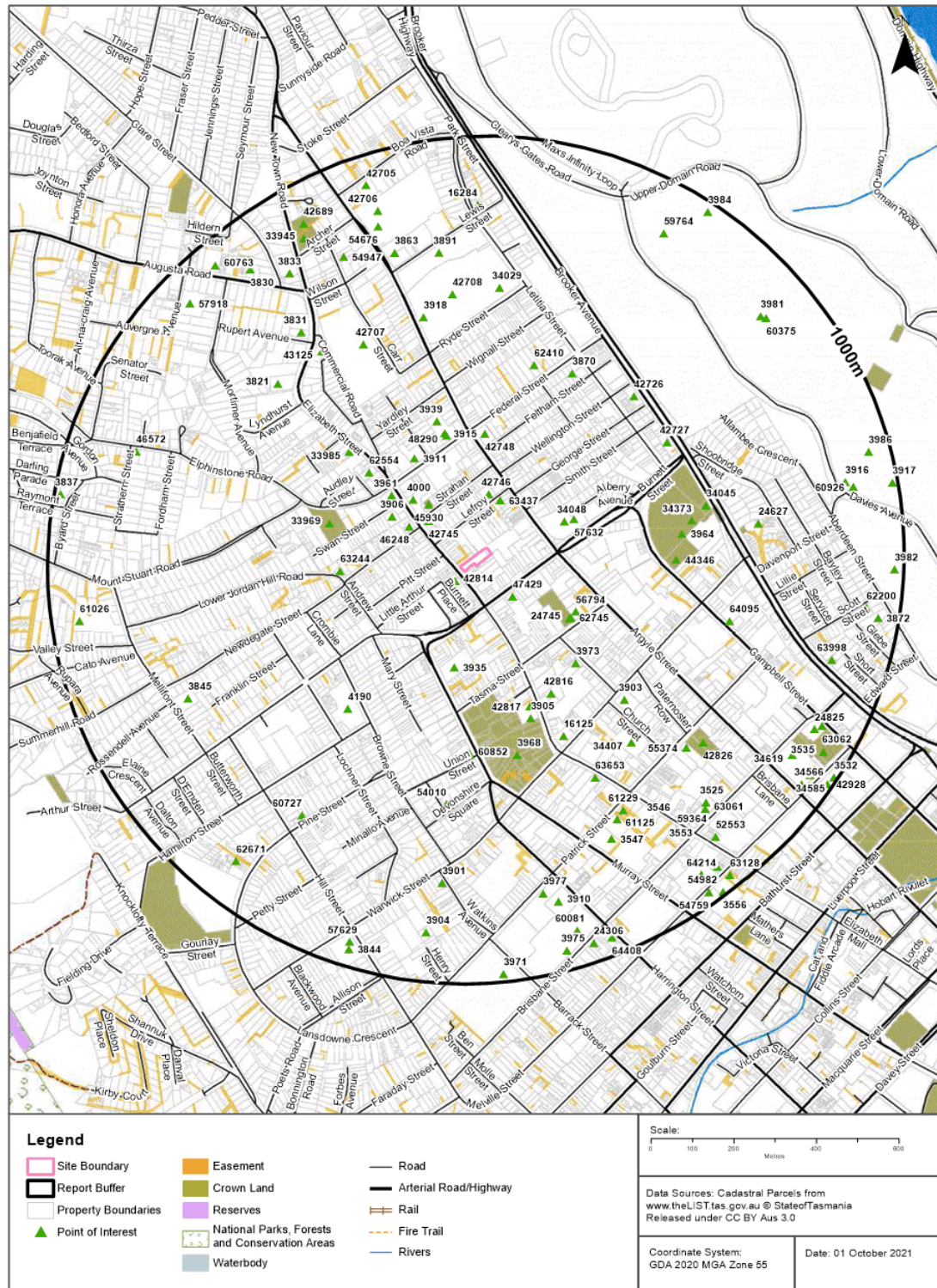
Historical Map c.1942

321-323a Elizabeth Street, North Hobart, TAS 7000



Topographic Features

321-323a Elizabeth Street, North Hobart, TAS 7000



Topographic Features

321-323a Elizabeth Street, North Hobart, TAS 7000

Points of Interest

Features from the LIST Points of Interest dataset that exist within the dataset buffer:

Map Id	Feature Type	Feature Subtype	Name	Distance	Direction
42814	Club	Other social	Chinese Community Association	32m	South West
47429	Medical service	Other	Headway Tasmania	114m	South East
63437	Accommodation	Holiday Unit/ Flat	Lefroy Cottage	120m	North
42746	Church	Other Church	Rivercity Christian Church	131m	North
42745	Financial institution	Commonwealth	Commonwealth Bank North Hobart	133m	North West
46248	Accommodation	Hotel	Queens Head Hotel	155m	North West
45930	Medical service	Family & child health centre	North Hobart Child Health Centre	165m	North West
34048	Ground	Park or reserve	Soundy Park	195m	North East
4000	Cultural	Theatre/ cinema	State Cinema	197m	North West
3906	Church	Uniting Church	North Hobart Uniting Church	204m	North West
57632	Ground	Picnic Area	Picnic Area	217m	East
3935	Community care	Creche	Goodstart Early Learning - North Hobart	235m	South
3961	Commonwealth government	Post offices and agencies	North Hobart Post Office	238m	North West
24745	Tourist feature	Cultural	Designed Objects Tasmania	246m	South East
62745	Tourist feature	Cultural	Contemporary Art Tasmania	248m	South East
56794	Church	Christian Brethren Church	Hope Christian Centre	249m	South East
3911	Club	Other social	Australian Italian Club	276m	North West
42748	Transport	Service Station	United North Hobart	277m	North
48290	Club	Other social	Greek Orthodox & Benevolent Society	289m	North
63244	Accommodation	Holiday Unit/ Flat	Myrtle Cottage	289m	West
3915	Club	Other social	Greek Club-Hellenic House	294m	North
62554	Church	Catholic Church	The Wallis Centre	316m	North West
3939	Hall/ Community centre	Other	Hellenic Hall	329m	North
33969	State Government	Health and Human Services	Mental Health Peacock Centre	332m	West
3973	Education and training	Private	Lambert School	337m	South East
42816	Transport	Service Station	Coles Express Hobart	360m	South East
42817	Hall/ Community centre	Church hall	Jack Soundy Memorial Hall	364m	South
33985	Club	CWA	CWA State Headquarters	385m	North West
3905	Church	Baptist Church	Hobart Baptist Church	391m	South
4190	Ground	Park or reserve	John Doggett Park	436m	South West
60852	Accommodation	Holiday Unit/ Flat	Murray Cottage	444m	South
44346	Community care	Creche	Lady Gowrie Child Centre - Campbell Street	450m	East
62410	Tourist feature	Industrial	The Italian Pantry	459m	North
3968	Education and training	Secondary college	Elizabeth College	464m	South
16125	Accommodation	Guest House/ Bed and Breakfast	Lodge On Elizabeth	465m	South East
3964	Education and training	Primary and infant	Campbell Street Primary School	465m	East
3870	Accommodation	Hotel	Black Buffalo Hotel	472m	North East
3903	Church	Other Church	Holy Trinity Greek Orthodox Church	480m	South East
34373	Community care	Creche	Scots Child Care Centre - Campbell Street Primary Annexe	493m	East
42727	Transport	Service Station	Caltex Brooker	505m	North East
42726	Transport	Service Station	BP Brooker	513m	North East
34045	Education and training	Other	Early Childhood Intervention Service Hobart	535m	East

Map Id	Feature Type	Feature Subtype	Name	Distance	Direction
54010	Accommodation	Holiday Unit/ Flat	Devonshire Cottage	567m	South
34407	Ground	Park or reserve	St Andrews Park	571m	South East
42707	Education and training	Private	The Friends School Senior Campus	575m	North West
3918	Club	Football	North Hobart Football Club	580m	North
63653	Tourist feature	Industrial	Shambles Brewery	591m	South East
64095	Tourist feature	Amusement or entertainment	Evo Room Escape	601m	East
43125	Transport	Service Station	Blue Gum Service Station	618m	North West
42708	Ground	Sportsground	North Hobart Oval	621m	North
3821	Accommodation	Guest House/ Bed and Breakfast	The Elms of Hobart	624m	North West
34029	Club	Bowls	Derwent City Bowls Club	632m	North
24627	Accommodation	Motel	Quest Trinity House	652m	East
55374	State Government	State Growth	Forest Practices Authority	668m	South East
3831	Church	Anglican Church	St James Anglican Church	685m	North West
42826	State Government	Police and Emergency Management	Tasmania Police Fleet Service	689m	South East
61229	Medical service	Community health centre	Tasmanian Aboriginal Centre - Hobart	693m	South East
61125	State Government	State Growth	Driver Assessment - Hobart	704m	South East
60727	Accommodation	Guest House/ Bed and Breakfast	Peck's on Pine Victorian Cottage	710m	South West
3891	Accommodation	Motel	Rydg's Hobart	725m	North
3845	Ground	Park or reserve	Friends Park	732m	South West
3547	Club	RACT	Hobart RACT	740m	South East
3863	Accommodation	Motel	Argyle Motor Lodge	749m	North
3546	Church	Salvation Army	Hobart Citadel	751m	South East
3901	Church	Other Church	West Hobart Christadelphian Hall	758m	South
54947	Tourist feature	Other	Hobart Historic Tours	785m	North West
3525	Church	Other Church	Christian Science Church	797m	South East
3977	Education and training	Private	St Virgils College Junior School	805m	South
59364	Accommodation	Holiday Unit/ Flat	Roxburgh House Apartments	808m	South East
63061	Accommodation	Holiday Unit/ Flat	Hopkins Manor	809m	South East
3553	Church	Other Church	Korean Full Gospel Church	809m	South East
3833	Club	Other social	Polish Club	817m	North West
54676	Community care	Creche	Friends Early Years	821m	North
46572	Community care	Creche	Purple Fish Playschool	832m	West
16284	Accommodation	Holiday Unit/ Flat	Seasons of Tasmania	832m	North
3910	Church	Catholic Church	St Marys Cathedral	834m	South
42706	Education and training	Private	The Friends School Matric & Junior	858m	North
63998	Accommodation	Holiday Unit/ Flat	Quarry House Luxury Retreat	866m	East
33945	State Government	Health and Human Services	Oral Health Services Tasmania - Southern Campus	869m	North West
3981	Sports complex	Other	Domain Athletic Centre	871m	North East
59764	Ground	Sportsground	Domain Crossroads Oval	876m	North East
3916	Club	Football	Hobart Football Club	876m	East
52553	Club	CWA	Hobart CWA Gift Shop	877m	South East
60375	Ground	Sportsground	Domain Athletic Centre Oval	878m	North East
34619	State Government	Health and Human Services	Ambulance Tasmania State Headquarters	878m	South East
3904	Church	Other Church	Islamic Centre Hobart Mosque	880m	South
3830	Church	Other Church	Russian Orthodox Church	881m	North West
24825	Tourist feature	Historical	The Tench - Penitentiary Chapel Historic Site	893m	South East
60926	Club	Football	DOSA Football Club	893m	East
62671	Accommodation	Holiday Unit/ Flat	The Lansdowne Apartments	894m	South West
42689	Medical service	Dental clinic	Southern Dental Centre	901m	North West
63062	Tourist feature	Other	Tench - Tours and Activities	905m	South East

Map Id	Feature Type	Feature Subtype	Name	Distance	Direction
57918	Accommodation	Holiday Unit/ Flat	Werndee	913m	North West
60081	Community care	Creche	St Mary's College - OSHC	914m	South
62200	Accommodation	Holiday Unit/ Flat	Corinda Contemporary	919m	East
42705	Church	Other Church	Quaker Meeting House	926m	North
64214	State Government	Forestry Tasmania	Sustainable Timber Tasmania Hobart Office	929m	South East
61026	Ground	Park or reserve	Leonard Wall Reserve	930m	West
54982	Tourist feature	Other	Conservation Volunteers Experience	937m	South East
34566	State Government	Other	State Fire Commission	938m	South East
3535	State police and emergency	Ambulance station	Hobart Ambulance Station	938m	South East
60763	Accommodation	Holiday Unit/ Flat	Ednam House and Apartments	940m	North West
57629	Ground	Picnic Area	Picnic Area	941m	South
34585	State police and emergency	Fire station	Hobart Fire Station	943m	South East
3986	Ground	Sportsground	TCA Ground	948m	East
34569	State Government	Health and Human Services	Tasmanian Ambulance Service Southern Regional HQ	949m	South East
3872	Accommodation	Holiday Unit/ Flat	The Corinda Collection	951m	East
3975	Education and training	Private	St Marys College	953m	South
24306	Accommodation	Holiday Unit/ Flat	Memory Lane Cottages	955m	South
3844	Ground	Park or reserve	Caldew Park	958m	South
64408	Accommodation	Holiday Unit/ Flat	Sanctum Boutique Apartments	958m	South
63128	Tourist feature	Cultural	Brunacci Avalon Market	971m	South East
54759	Transport	Car park	HCC Central Car Park	973m	South East
3984	Ground	Sportsground	Soldiers Memorial Oval	976m	North East
3982	Sports complex	Other	Domain Tennis Centre	979m	East
3971	Education and training	Private	Guilford Young College Hobart Campus	982m	South
3837	Hall/ Community centre	Community, town or city hall	Mt Stuart Memorial Hall	982m	West
3917	Club	Cricket	North Hobart Cricket Club	988m	East
42928	Hall/ Community centre	Church hall	G A Wood Hall	989m	South East
3556	Hall/ Community centre	Church hall	Wesley Church Hall	992m	South East
3532	Community care	Creche	Scots Child Care Centre	994m	South East

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Easements

Features from the LIST Easements dataset that exist on-site:

Map Id	Feature Type	Feature Subtype
N/A	No records within buffer	

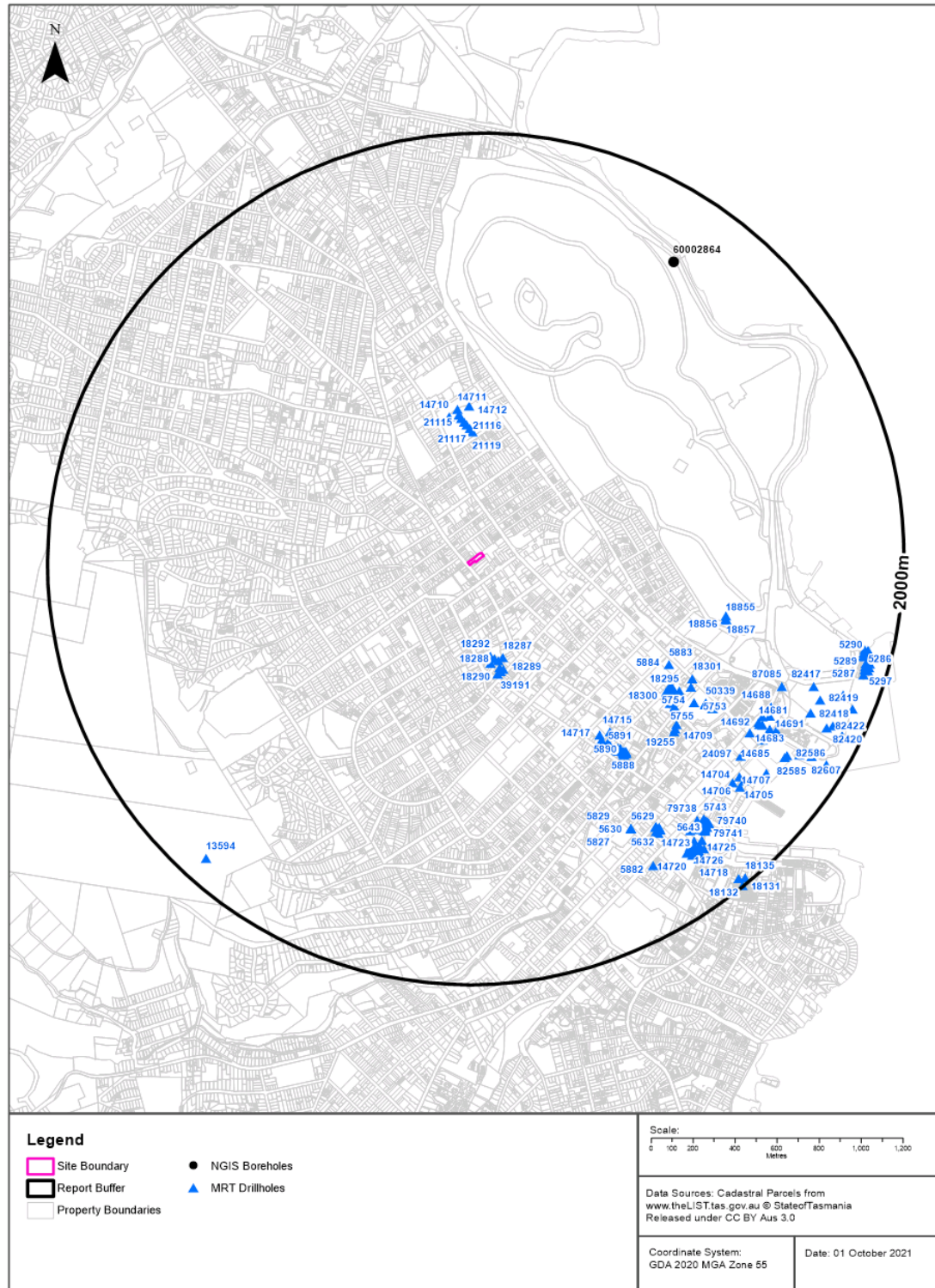
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Elevation Contours (m AHD) 10m Interval at 1:25,000
321-323a Elizabeth Street, North Hobart, TAS 7000



Boreholes

321-323a Elizabeth Street, North Hobart, TAS 7000



Groundwater Boreholes

321-323a Elizabeth Street, North Hobart, TAS 7000

Drill Hole Database (DORIS)

Drill holes from the Drill Hole Database (DORIS) within the dataset buffer:

Drill Id	Name	Purpose	Date Drilled	Company	Associated Tenements	Reports	Length (m)	Reduced Level	Intersections	Core Status	Dist	Dir
18292	BH6	Engineering geology	21/07/1976	Public Works Department			11.82	31.9		Open	449m	South
18291	BH5	Engineering geology	16/07/1976	Public Works Department			10.86	35.6		Open	467m	South
18287	BH1	Engineering geology	23/06/1976	Public Works Department			10.97	31.9		Open	472m	South
18288	BH2	Engineering geology	30/06/1976	Public Works Department			7.7	31.6		Open	480m	South
18290	BH4	Engineering geology	12/07/1976	Public Works Department			11.59	31.9		Open	481m	South
39192	B93-12	Engineering geology	26/05/1993	Roads and Transport divisions (various State Departments)			11.8	31.3		Open	513m	South
18289	BH3	Engineering geology	06/07/1976	Public Works Department			12	31.9		Open	525m	South
39191	B93-11	Engineering geology	26/05/1993	Roads and Transport divisions (various State Departments)			8	30.7		Open	532m	South
39190	B93-10	Engineering geology	25/05/1993	Roads and Transport divisions (various State Departments)			12.6	30.9		Open	540m	South
21119	BH9	Engineering geology	01/01/1980	Tasmania Department of Mines			6	50		Open	575m	North
21118	BH8	Engineering geology	01/01/1980	Tasmania Department of Mines			6	50		Open	592m	North
21117	BH7	Engineering geology	01/01/1980	Tasmania Department of Mines			6	50		Open	610m	North
21116	BH6	Engineering geology	01/01/1980	Tasmania Department of Mines			6	50		Open	627m	North
21115	BH5	Engineering geology	01/01/1980	Tasmania Department of Mines			6	50		Open	645m	North
14710	BH1	Engineering geology	09/12/1986	Tasmania Department of Mines			6.1	20		Open	663m	North
21114	BH4	Engineering geology	01/01/1980	Tasmania Department of Mines			6	50		Open	663m	North
14711	BH2	Engineering geology	09/12/1986	Tasmania Department of Mines			6.1	25		Open	691m	North
14712	BH3	Engineering geology	09/12/1986	Tasmania Department of Mines			6	25		Open	699m	North
14717	BH5	Engineering geology	10/01/1987	Tasmania Department of Mines		UR1987_70	8.45	19.59		Open	1016m	South East
5883	Hole 1	Engineering geology	18/04/1977	Tasmania Department of Mines			10			Open	1026m	South East
5884	Hole 2-3	Engineering geology	19/04/1977	Tasmania Department of Mines			20.01	25		Open	1026m	South East

Drill Id	Name	Purpose	Date Drilled	Company	Associated Tenements	Reports	Length (m)	Reduced Level	Intersections	Core Status	Dist	Dir
14715	BH3	Engineering geology	05/10/1987	Tasmania Department of Mines		UR1987_70	6.75	17.2		Open	1033m	South East
14716	BH4	Engineering geology	06/10/1987	Tasmania Department of Mines		UR1987_70	11.5	20.35		Open	1042m	South East
14714	BH2	Engineering geology	30/09/1987	Tasmania Department of Mines		UR1987_70	14.5	16.98		Open	1063m	South East
14713	BH1	Engineering geology	29/09/1987	Tasmania Department of Mines		UR1987_70	10	19.31		Open	1069m	South East
18305	B83-16	Engineering geology	05/12/1983	Roads and Transport divisions (various State Departments)			13	20		Open	1086m	South East
18300	B83-11	Engineering geology	08/06/1983	Roads and Transport divisions (various State Departments)			9	20		Open	1088m	South East
18306	B83-17	Engineering geology	07/12/1983	Roads and Transport divisions (various State Departments)			13	20		Open	1088m	South East
18304	B83-15	Engineering geology	15/06/1983	Roads and Transport divisions (various State Departments)			5.6	17.5		Open	1091m	South East
18307	B83-18	Engineering geology	08/12/1983	Roads and Transport divisions (various State Departments)			13	20		Open	1098m	South East
18308	B83-19	Engineering geology	12/12/1983	Roads and Transport divisions (various State Departments)			12	20		Open	1104m	South East
18309	B83-20	Engineering geology	13/12/1983	Roads and Transport divisions (various State Departments)			13	20		Open	1104m	South East
18298	B83-9	Engineering geology	07/06/1983	Roads and Transport divisions (various State Departments)			10.01	16.2		Open	1111m	South East
18299	B83-10	Engineering geology	07/06/1983	Roads and Transport divisions (various State Departments)			6			Open	1115m	South East
82477	BH3	Engineering geology		Tasmania Department of Mines		TR13_85_89, UR1968_02		15.5		Closed	1116m	South East
82478	BH4	Engineering geology		Tasmania Department of Mines		TR13_85_89, UR1968_02		15.9		Closed	1121m	South East
5891	BH8	Engineering geology	12/01/1967	Tasmania Department of Mines		TR13_85_89, UR1968_02	15	15.3		Open	1124m	South East
18293	B83-4	Engineering geology	31/05/1983	Roads and Transport divisions (various State Departments)			10.11	13.3		Open	1127m	South East
18296	B83-7	Engineering geology	02/06/1983	Roads and Transport divisions (various State Departments)			6.9	13.8		Open	1130m	South East
82479	BH7	Engineering geology		Tasmania Department of Mines		TR13_85_89, UR1968_02		16		Closed	1130m	South East

Drill Id	Name	Purpose	Date Drilled	Company	Associated Tenements	Reports	Length (m)	Reduced Level	Intersections	Core Status	Dist	Dir
18295	B83-6	Engineering geology	01/06/1983	Roads and Transport divisions (various State Departments)			11.28	13.7		Open	1135m	South East
18303	B83-14	Engineering geology	15/06/1983	Roads and Transport divisions (various State Departments)			3.96	12.25		Open	1135m	South East
82480	BH5	Engineering geology		Tasmania Department of Mines		TR13_85_89, UR1968_02		13		Closed	1147m	South East
5888	BH11	Engineering geology	18/12/1967	Tasmania Department of Mines		TR13_85_89, UR1968_02	23	13.6		Open	1149m	South East
82481	BH6	Engineering geology		Tasmania Department of Mines		TR13_85_89, UR1968_02		13.2		Closed	1152m	South East
18297	B83-8	Engineering geology	06/06/1983	Roads and Transport divisions (various State Departments)			8.49	12.5		Open	1153m	South East
5890	BH9	Engineering geology	12/01/1967	Tasmania Department of Mines		TR13_85_89, UR1968_02	29	12		Open	1154m	South East
18301	B83-12	Engineering geology	09/06/1983	Roads and Transport divisions (various State Departments)			7	20		Open	1155m	South East
5889	BH10	Engineering geology	12/01/1967	Tasmania Department of Mines		TR13_85_89, UR1968_02	13	12.4		Open	1160m	South East
18294	B83-5	Engineering geology	01/06/1983	Roads and Transport divisions (various State Departments)			8.28	11.1		Open	1161m	South East
82483	BH14	Engineering geology		Tasmania Department of Mines		TR13_85_89, UR1968_02		11.9		Closed	1161m	South East
82482	BH13	Engineering geology		Tasmania Department of Mines		TR13_85_89, UR1968_02		12		Closed	1162m	South East
82484	BH12	Engineering geology		Tasmania Department of Mines		TR13_85_89, UR1968_02		12		Closed	1163m	South East
18302	B83-13	Engineering geology	14/06/1983	Roads and Transport divisions (various State Departments)			5	20		Open	1171m	South East
18857	TAC3	Engineering geology	19/03/1996	Sloane Weldon Engineering Pty Ltd			4.16	18.5		Open	1190m	East
18855	TAC1	Engineering geology	19/03/1996	Sloane Weldon Engineering Pty Ltd			4.06	17.5		Open	1193m	East
18856	TAC2	Engineering geology	19/03/1996	Sloane Weldon Engineering Pty Ltd			5.37	17		Open	1199m	East
14708	Hole1	Engineering geology	16/06/1987	Tasmania Department of Mines		UR1987_29	7	2.6		Open	1222m	South East
5753	Hole 1	Engineering geology	08/01/1965	Tasmania Department of Mines			3			Open	1224m	South East
5754	Hole 2	Engineering geology	08/01/1965	Tasmania Department of Mines			5			Open	1224m	South East
5755	Hole 3	Engineering geology	08/01/1965	Tasmania Department of Mines			8			Open	1224m	South East

Drill Id	Name	Purpose	Date Drilled	Company	Associated Tenements	Reports	Length (m)	Reduced Level	Intersections	Core Status	Dist	Dir
19255	KINGS-10	Engineering geology	01/06/1987	Tasmania Department of Mines		UR1987_29	6			Open	1232m	South East
14709	Hole2	Engineering geology	16/06/1987	Tasmania Department of Mines		UR1987_29	7	5.5		Open	1238m	South East
50339	3215717_02	Engineering geology	20/10/2010	GHD Pty Ltd			9.1	5.8		Closed	1270m	South East
50340	3215717_03	Engineering geology	08/12/2010	GHD Pty Ltd			8.99	5.8		Closed	1272m	South East
50341	3215717_04	Engineering geology	06/12/2010	GHD Pty Ltd			8.97	5.9		Closed	1273m	South East
50338	3215717_01	Engineering geology	20/10/2010	GHD Pty Ltd			8.75	6		Closed	1310m	South East
50343	3215717_06	Engineering geology	02/12/2010	GHD Pty Ltd			8.95	5.8		Closed	1310m	South East
50344	3215717_06A	Engineering geology	30/11/2010	GHD Pty Ltd			3	5.8		Closed	1310m	South East
50345	3215717_06B	Engineering geology	30/10/2010	GHD Pty Ltd			6.13	5.8		Closed	1310m	South East
50342	3215717_05	Engineering geology	03/12/2010	GHD Pty Ltd			9	5.8		Closed	1314m	South East
5827	BH2	Engineering geology	26/05/1964	Tasmania Department of Mines			8			Open	1424m	South East
5828	BH3	Engineering geology	28/05/1964	Tasmania Department of Mines			5			Open	1424m	South East
5829	BH4	Engineering geology	29/05/1964	Tasmania Department of Mines			5			Open	1424m	South East
5830	BH5	Engineering geology	01/06/1964	Tasmania Department of Mines			6			Open	1424m	South East
5833	BH6	Engineering geology	30/06/1964	Tasmania Department of Mines			6			Open	1424m	South East
5834	BH7	Engineering geology	29/06/1964	Tasmania Department of Mines			5			Open	1424m	South East
5835	BH8	Engineering geology	02/07/1964	Tasmania Department of Mines			8			Open	1424m	South East
5826	BH1	Engineering geology	25/05/1964	Tasmania Department of Mines			11			Open	1424m	South East
5831	BH6	Engineering geology	01/06/1964	Tasmania Department of Mines			2			Open	1424m	South East
5832	BH7	Engineering geology	02/06/1964	Tasmania Department of Mines			2			Open	1424m	South East
5630	BH5	Engineering geology	01/01/1970	Tasmania Department of Mines			22			Open	1472m	South East
5631	BH6	Engineering geology	01/01/1970	Tasmania Department of Mines			23			Open	1472m	South East
5632	BH6A(7)	Engineering geology	01/01/1970	Tasmania Department of Mines			16			Open	1472m	South East
5629	BH4	Engineering geology	01/01/1970	Tasmania Department of Mines			9			Open	1472m	South East
5633	BH8	Engineering geology	01/01/1970	Tasmania Department of Mines			14			Open	1472m	South East
14682	DDH2	Engineering geology	26/11/1984	Tasmania Department of Mines			16	2.2		Open	1525m	South East
5619	BH3	Engineering geology	10/01/1971	Tasmania Department of Mines		TR17_137_13 8	8	22		Open	1527m	South East
5621	BH5	Engineering geology	08/01/1972	Tasmania Department of Mines		TR17_137_13 8	13	22		Open	1529m	South East

Drill Id	Name	Purpose	Date Drilled	Company	Associated Tenements	Reports	Length (m)	Reduced Level	Intersections	Core Status	Dist	Dir
14681	DDH1	Engineering geology	21/11/1984	Tasmania Department of Mines			15.85	1.82		Open	1532m	South East
14687	DDH7	Engineering geology	03/12/1984	Tasmania Department of Mines			17	2.02		Open	1536m	South East
5622	BH6	Engineering geology	08/01/1972	Tasmania Department of Mines		TR17_137_138	16	20		Open	1538m	South East
14692	DDH14	Engineering geology	28/11/1984	Tasmania Department of Mines			15	1.71		Open	1540m	South East
5620	BH4	Engineering geology	08/01/1972	Tasmania Department of Mines		TR17_137_138	18	20		Open	1543m	South East
14688	DDH8	Engineering geology	26/11/1984	Tasmania Department of Mines			11.6	3.2		Open	1547m	South East
5623	BH7	Engineering geology	08/01/1972	Tasmania Department of Mines		TR17_137_138	11	20		Open	1548m	South East
5618	BH2	Engineering geology	10/01/1971	Tasmania Department of Mines		TR17_137_138	12	18		Open	1552m	South East
87085	FP1	Engineering geology	12/05/1986				3.88	5.76		Closed	1552m	South East
14683	DDH3	Engineering geology	01/11/1984	Tasmania Department of Mines			16	2.19		Open	1555m	South East
24097	BH1	Engineering geology	23/08/2000	Hydro Tasmania	EL49/2004		1.35	4.6		Open	1555m	South East
5617	BH1	Engineering geology	10/01/1971	Tasmania Department of Mines		TR17_137_138	11	20		Open	1560m	South East
14689	DDH9	Engineering geology	27/11/1984	Tasmania Department of Mines			9.2	3.14		Open	1564m	South East
14690	DDH10	Engineering geology	05/12/1984	Tasmania Department of Mines			20.5	2.04		Open	1564m	South East
14685	DDH5	Engineering geology	23/11/1984	Tasmania Department of Mines			16.9	1.99		Open	1594m	South East
14684	DDH4	Engineering geology	22/11/1984	Tasmania Department of Mines			16.6	1.65		Open	1595m	South East
14707	BH4	Engineering geology	04/12/1986	Tasmania Department of Mines			17.5	15		Open	1606m	South East
14704	BH1	Engineering geology	01/12/1986	Tasmania Department of Mines			14.5	10		Open	1612m	South East
79738	BH2	Engineering geology	03/05/2008	Department of State Growth			8.2	10		Closed	1622m	South East
14686	DDH6	Engineering geology	26/11/1984	Tasmania Department of Mines			11	1.69		Open	1625m	South East
14691	DDH13	Engineering geology	28/11/1984	Tasmania Department of Mines			16.8	1.77		Open	1634m	South East
5743	MD11	Engineering geology	10/1965	Tasmania Department of Mines		TR10_84_86	8			Open	1637m	South East
5745	MD9	Engineering geology	10/1965	Tasmania Department of Mines		TR10_84_86	8			Open	1638m	South East
79739	BH3	Engineering geology	04/05/2008	Department of State Growth			11.1	11.08		Closed	1640m	South East
14705	BH2	Engineering geology	02/12/1986	Tasmania Department of Mines			19.9	15		Open	1641m	South East
5750	MD3	Engineering geology	10/1965	Tasmania Department of Mines		TR10_84_86	14			Open	1643m	South East

Drill Id	Name	Purpose	Date Drilled	Company	Associated Tenements	Reports	Length (m)	Reduced Level	Intersections	Core Status	Dist	Dir
14706	BH3	Engineering geology	03/12/1986	Tasmania Department of Mines			19	15		Open	1646m	South East
5746	MD8	Engineering geology	10/1965	Tasmania Department of Mines		TR10_84_86	8			Open	1648m	South East
5653	HEC10	Engineering geology	06/1962	Public Works Department		TR10_84_86	10			Open	1650m	South East
5744	MD10	Engineering geology	10/1965	Tasmania Department of Mines		TR10_84_86	10			Open	1650m	South East
5751	MD2	Engineering geology	10/1965	Tasmania Department of Mines		TR10_84_86	14			Open	1650m	South East
5648	HEC6-6A	Engineering geology	06/1962	Public Works Department		TR10_84_86	8			Open	1651m	South East
5650	HEC8	Engineering geology	06/1962	Public Works Department		TR10_84_86	14	9.23		Open	1651m	South East
79737	BH1	Engineering geology	03/05/2008	Department of State Growth			14.2	10.44		Closed	1653m	South East
5649	HEC7	Engineering geology	06/1962	Public Works Department		TR10_84_86	10			Open	1654m	South East
82726	MD7	Engineering geology	10/1965	Tasmania Department of Mines		TR10_84_86				Open	1654m	South East
5647	HEC5	Engineering geology	06/1962	Public Works Department		TR10_84_86	8	4.88		Open	1657m	South East
5747	MD6	Engineering geology	10/1965	Tasmania Department of Mines		TR10_84_86	15			Open	1657m	South East
5752	MD1	Engineering geology	10/1965	Tasmania Department of Mines		TR10_84_86	14			Open	1658m	South East
5651	HEC8A	Engineering geology	06/1962	Public Works Department		TR10_84_86	11	4.88		Open	1660m	South East
5766	MD-Apr 2	Engineering geology	04/1965	Tasmania Department of Mines		TR10_84_86	31			Open	1660m	South East
5748	MD5	Engineering geology	10/1965	Tasmania Department of Mines		TR10_84_86	14			Open	1663m	South East
79740	BH4	Engineering geology	10/05/2008	Department of State Growth			9.6	4.46		Closed	1667m	South East
5646	HEC4	Engineering geology	09/1962	Public Works Department		TR10_84_86	9			Open	1667m	South East
5643	HEC1	Engineering geology	06/1962	Public Works Department		TR10_84_86	10			Open	1669m	South East
5749	MD4	Engineering geology	10/01/1965	Tasmania Department of Mines		TR10_84_86	8			Open	1674m	South East
5644	HEC2	Engineering geology	06/1962	Public Works Department		TR10_84_86	10			Open	1678m	South East
5882	Hole 1	Engineering geology	05/1977	Tasmania Department of Mines		UR1977_24	17.75	21		Open	1678m	South East
79741	BH5	Engineering geology	10/05/2008	Department of State Growth			6.6	4.85		Closed	1679m	South East
5652	HEC9	Engineering geology	06/1962	Public Works Department		TR10_84_86	10	4.88		Open	1680m	South East
5765	MD-Apr 1	Engineering geology	04/1965	Tasmania Department of Mines		TR10_84_86	12			Open	1680m	South East
5645	HEC3	Engineering geology	06/1962	Public Works Department		TR10_84_86	7			Open	1686m	South East
14722	BH5	Engineering geology	01/01/1969	Tasmania Department of Mines		TR14_113_115, TR14_111_113	6.7	5		Open	1691m	South East
82417	BH1	Engineering geology	23/07/2007	Department of Health and Human Services			8	6.2		Closed	1692m	East

Drill Id	Name	Purpose	Date Drilled	Company	Associated Tenements	Reports	Length (m)	Reduced Level	Intersections	Core Status	Dist	Dir
82609	7270-01	Engineering geology	19/03/2018				15.6	3.1		Closed	1700m	South East
14721	BH4	Engineering geology	01/01/1969	Tasmania Department of Mines		TR14_113_11 5, TR14_111_11 3	3.1	5		Open	1701m	South East
79742	BH6	Engineering geology	11/05/2008	Department of State Growth			6.5	5.08		Closed	1709m	South East
14726	BH10	Engineering geology	01/01/1969	Tasmania Department of Mines		TR14_113_11 5, TR14_111_11 3	7.1	5		Open	1712m	South East
14720	BH3	Engineering geology	01/01/1969	Tasmania Department of Mines		TR14_113_11 5, TR14_111_11 3	12	5		Open	1714m	South East
14727	BH11	Engineering geology	01/01/1969	Tasmania Department of Mines		TR14_113_11 5, TR14_111_11 3	8.6	5		Open	1715m	South East
14723	BH6	Engineering geology	01/01/1969	Tasmania Department of Mines		TR14_113_11 5, TR14_111_11 3	3.7	5		Open	1721m	South East
82585	7267-01	Engineering geology	16/03/2018				14.3	1.22		Closed	1727m	South East
21112	BH13	Engineering geology	01/01/1969	Tasmania Department of Mines		TR14_113_11 5, TR14_111_11 3	5			Open	1729m	South East
82418	BH2	Engineering geology	23/07/2007	Department of Health and Human Services			11.5	5.4		Closed	1730m	South East
14725	BH9	Engineering geology	01/01/1969	Tasmania Department of Mines		TR14_113_11 5, TR14_111_11 3	9.7	5		Open	1733m	South East
82586	7267-02	Engineering geology	16/03/2018				13.5	1.22		Closed	1733m	South East
14719	BH2	Engineering geology	01/01/1970	Tasmania Department of Mines		TR14_113_11 5, TR14_111_11 3	4.1	5		Open	1739m	South East
14728	BH12	Engineering geology	01/01/1969	Tasmania Department of Mines		TR14_113_11 5, TR14_111_11 3	10.1	5		Open	1742m	South East
82419	BH3	Engineering geology	23/07/2007	Department of Health and Human Services			9.5	5.9		Closed	1745m	East
21113	BH7	Engineering geology	01/01/1969	Tasmania Department of Mines		TR14_113_11 5, TR14_111_11 3	6			Open	1750m	South East
14724	BH8	Engineering geology	01/01/1969	Tasmania Department of Mines		TR14_113_11 5, TR14_111_11 3	6	5		Open	1761m	South East
14718	BH1	Engineering geology	01/01/1970	Tasmania Department of Mines		TR14_113_11 5, TR14_111_11 3	4.9	5		Open	1771m	South East
82605	7104-01	Engineering geology	13/08/2014				7.85	2.35		Closed	1780m	South East
82422	BH6	Engineering geology	11/09/2007	Department of Health and Human Services			20.7	3.6		Closed	1830m	South East
82607	7104-02	Engineering geology	14/08/2014					2.65		Closed	1833m	South East
82421	BH5	Engineering geology	26/07/2007	Department of Health and Human Services			12.5	4.2		Closed	1836m	East

Drill Id	Name	Purpose	Date Drilled	Company	Associated Tenements	Reports	Length (m)	Reduced Level	Intersections	Core Status	Dist	Dir
82420	BH4	Engineering geology	25/07/2007	Department of Health and Human Services			14.25	3.8		Closed	1851m	South East
5294	DDH10	Engineering geology	1976	Tasmania Department of Mines		UR1976_48	2.5	2.3		Open	1869m	East
5290	DDH6	Engineering geology	1976	Tasmania Department of Mines		UR1976_48	4.84	2.5		Open	1870m	East
5292	DDH8	Engineering geology	1976	Tasmania Department of Mines		UR1976_48	5.53	2.5		Open	1870m	East
5296	DDH12	Engineering geology	1976	Tasmania Department of Mines		UR1976_48	5.25	2.5		Open	1879m	East
13594	KNO-1	Stratigraphic	03/08/1987	Tasmania Department of Mines			298	237.6		Open	1880m	South West
5293	DDH9	Engineering geology	1976	Tasmania Department of Mines		UR1976_48	11.57	2.5	0-7m: Recent fill, 7-11.5m: Dolerite	Open	1888m	East
5295	DDH11	Engineering geology	1976	Tasmania Department of Mines		UR1976_48	8.3	2.3		Open	1888m	East
5289	DDH4	Engineering geology	1976	Tasmania Department of Mines		UR1976_48	6.15	2.5		Open	1893m	East
5298	DDH15	Engineering geology	1976	Tasmania Department of Mines		UR1976_48	4.82	2.4		Open	1894m	East
5287	DDH2	Engineering geology	1976	Tasmania Department of Mines		UR1976_48	7.17	2.5	0-4m: Recent fill, 4-7.17m: Dolerite	Open	1895m	East
5291	DDH7	Engineering geology	1976	Tasmania Department of Mines		UR1976_48	12.12	2.7		Open	1898m	East
5299	DDH16	Engineering geology	1976	Tasmania Department of Mines		UR1976_48	10.6	3.4		Open	1898m	East
82423	BH8	Engineering geology	07/09/2007	Department of Health and Human Services			12.54	3.3		Closed	1904m	East
5288	DDH3	Engineering geology	1976	Tasmania Department of Mines		UR1976_48	8.32	3.1	0-5.4m: Recent fill, 5.4-8.32m: Dolerite	Open	1911m	East
5297	DDH14	Engineering geology	1976	Tasmania Department of Mines		UR1976_48	9.17	3.1		Open	1912m	East
82608	7104-03	Engineering geology	14/08/2014					3.15		Closed	1912m	South East
5286	DDH1	Engineering geology	1976	Tasmania Department of Mines		UR1976_48	9.63	3.2	0-6.2m: Recent fill, 6.2-9.63m: Dolerite	Open	1913m	East
82424	BH9	Engineering geology	11/09/2007	Department of Health and Human Services			18.6	3.1		Closed	1913m	South East
18132	SQ4	Engineering geology	28/08/1995	Sloane Weldon Engineering Pty Ltd			5.37	10		Open	1962m	South East
18135	SQ7	Engineering geology	29/08/1995	Sloane Weldon Engineering Pty Ltd			3.27	10		Open	1978m	South East
18131	SQ3	Engineering geology	28/08/1995	Sloane Weldon Engineering Pty Ltd			3.83	10		Open	1999m	South East

Drill Hole Database (DORIS) from Mineral Resources Tasmania
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Groundwater Boreholes

321-323a Elizabeth Street, North Hobart, TAS 7000

Boreholes (NGIS)

Boreholes from the National Groundwater Information System (NGIS) within the dataset buffer:

NGIS Bore Id	State Bore Id	Drilled Date	Bore Depth (m)	Drilled Depth (m)	Elevation (m)	Distance	Direction
60002864	2864	21/02/1983	0.00	54.00	15.00	1661m	North East

Borehole Data Source: © Commonwealth of Australia (Bureau of Meteorology)
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Borehole Logs (NGIS)

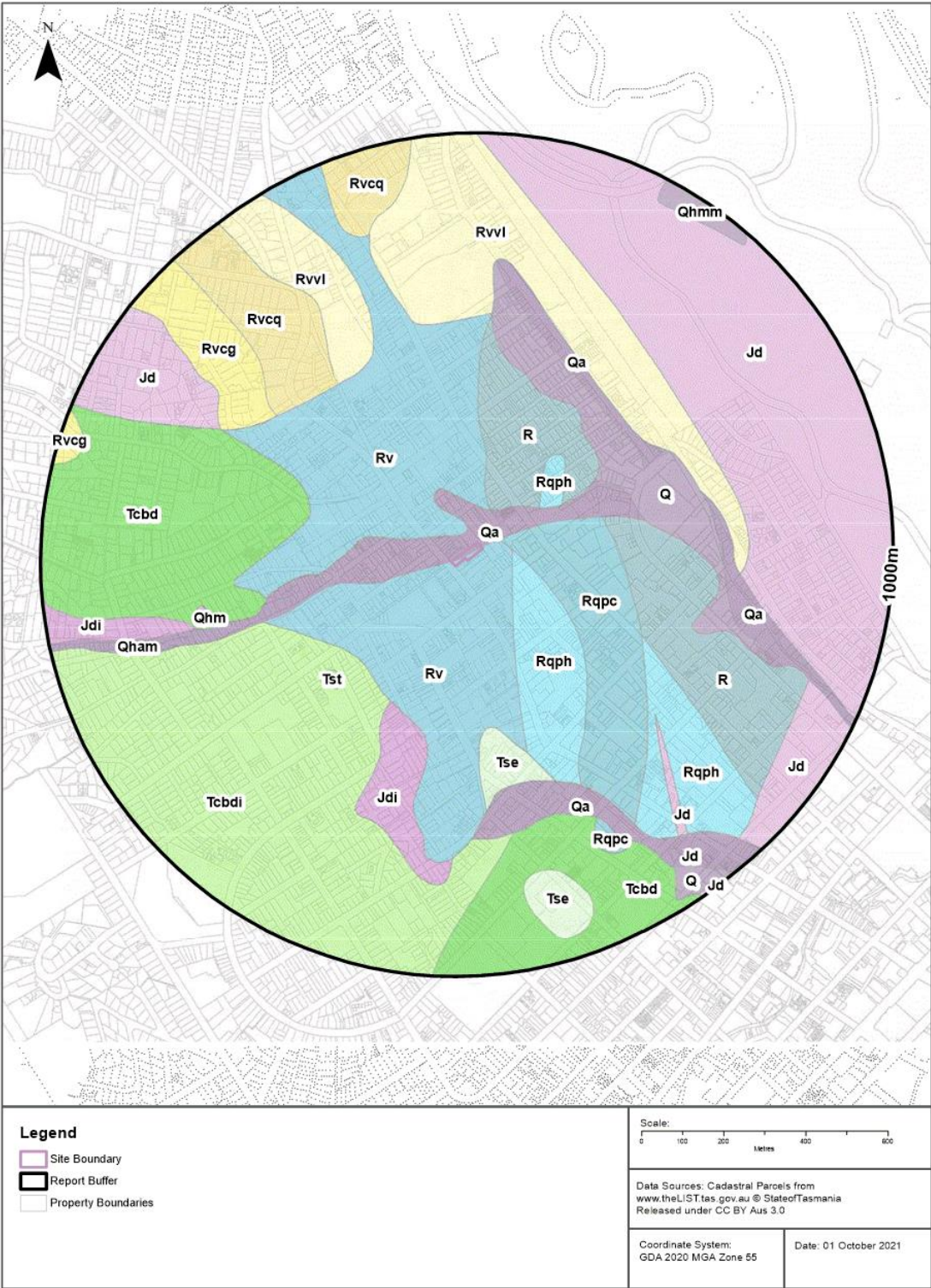
Borehole logs from the National Groundwater Information System (NGIS) within the dataset buffer:

NGIS Bore Id	Driller's Log	Distance	Direction
60002864	0.00m-54.00m	1661m	North East

Borehole Log Data Source: © Commonwealth of Australia (Bureau of Meteorology)
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Geology 1:25,000

321-323a Elizabeth Street, North Hobart, TAS 7000



Geology

321-323a Elizabeth Street, North Hobart, TAS 7000

Geological Units (1:25,000)

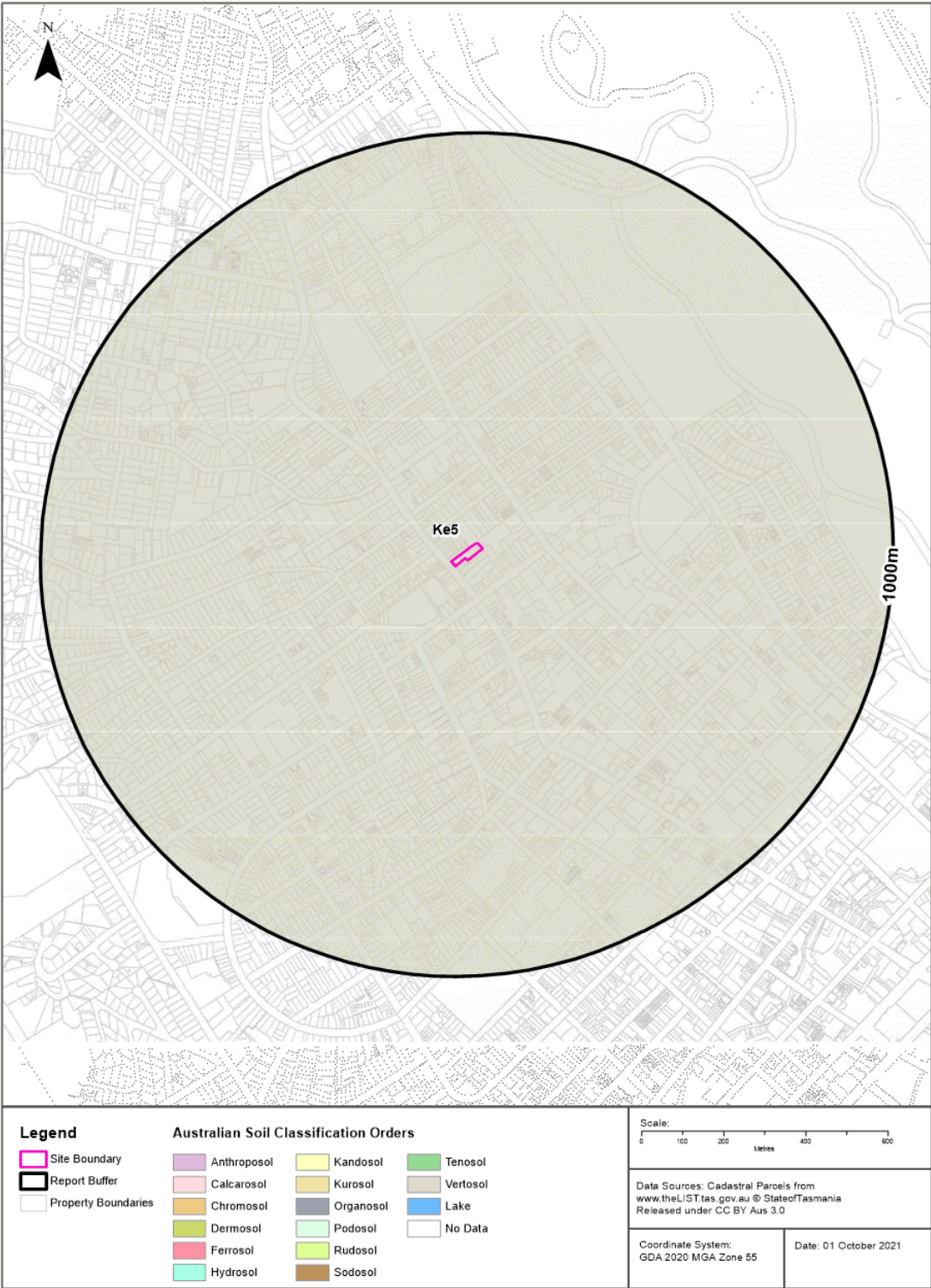
Geological units at a scale of 1:25,000, within the dataset buffer:

Symbol	Description	Region	Super Group	Group	Sub Group	Formation	Era	Period	Distance to Nearest Feature
Rv	Undifferentiated volcanoclastic, quartz-rich lithic and quartzose sandstone, siltstone, mudstone, carbonaceous beds and coal seams.	Tasmanian Basin	Upper Parmeener Supergroup				Paleozoic - Mesozoic	Permian - Triassic	On-site
Qa	Alluvial gravel, sand and clay.	Cenozoic cover sequences					Cenozoic	Quaternary	On-site
Rqpc	Predominantly interbedded siltstone shale and mudstone and planar-bedded, ripple cross-laminated or cross-bedded sandstone, red-purple, green or carbonaceous siltstone at places (part of Knocklofty Formation where in Hobart area).	Tasmanian Basin	Upper Parmeener Supergroup			Knocklofty Formation	Paleozoic - Mesozoic	Permian - Triassic	48m
Rqph	Freshwater predominantly cross-bedded quartzose to feldspathic sandstone commonly with overturned cross-bedding, subordinate siltstone with sparse plant and vertebrate fossils (Knocklofty Formation).	Tasmanian Basin	Upper Parmeener Supergroup			Knocklofty Formation	Paleozoic - Mesozoic	Permian - Triassic	74m
R	Undifferentiated Upper Parmeener Supergroup rocks.	Tasmanian Basin	Upper Parmeener Supergroup				Paleozoic - Mesozoic	Permian - Triassic	86m
Qham	Alluvium and marsh deposits of modern flood plains.	Cenozoic cover sequences					Cenozoic	Quaternary	320m
Q	Undifferentiated Quaternary sediments.	Cenozoic cover sequences					Cenozoic	Quaternary	324m
Tcbdi	Inferred dolerite boulder beds with possible shallow subsurface dolerite or Parmeener rock.	Cenozoic cover sequences					Mesozoic - Cenozoic	Cretaceous - Quaternary	325m
Tcbd	Poorly sorted boulder to pebble grade deposits with boulders up to 3 m length, clasts generally dominantly of dolerite with traces to rarely dominant amounts of Upper Parmeener mudstone and other rocks and less commonly Lower Parmeener rocks, clayey matrix.	Cenozoic cover sequences					Mesozoic - Cenozoic	Cretaceous - Quaternary	362m
Jdi	Inferred dolerite beneath soil or Cainozoic deposits.					Tasmanian Dolerite	Mesozoic	Jurassic	363m
Tst	Travertine spring deposits with fossil plants and non-marine fauna, associated with basalt at Geilston Bay (Includes Geilston Travertine).	Cenozoic cover sequences					Mesozoic - Cenozoic	Cretaceous - Quaternary	386m
Tse	Poorly-consolidated interbedded claystone, sandstone and pebble conglomerate (Tse).	Cenozoic cover sequences					Mesozoic - Cenozoic	Cretaceous - Quaternary	401m
Rvvl	Interbedded yellow brown or grey carbonaceous siltstone, mudstone and thin to thick-bedded quartz-rich lithic arkosic sandstone, some fossil plants, common siltstone palaeosols.	Tasmanian Basin	Upper Parmeener Supergroup				Mesozoic	Triassic	468m
Rvcq	Interbedded cross-bedded white quartzose sandstone, quartz-rich lithic sandstone, siltstone and mudstone; Hobart area- upper interval with much dark grey carbonaceous mudstone, thin lenticular coal seams and fossil plants in places, elsewhere these lithologies probably distributed throughout the unit.	Tasmanian Basin	Upper Parmeener Supergroup			New Town Coal Measures	Mesozoic	Triassic	509m
Rvcg	Thickly- to thinly-bedded volcanic lithic sandstone, siltstone, mudstone and coal seams, fossil plants on some horizons (Newtown Coal Measures).	Tasmanian Basin	Upper Parmeener Supergroup			New Town Coal Measures	Mesozoic	Triassic	551m

Symbol	Description	Region	Super Group	Group	Sub Group	Formation	Era	Period	Distance to Nearest Feature
Qhm	Mine tailings and man disturbed ground.	Cenozoic cover sequences					Cenozoic	Quaternary	577m
Jd	Dolerite and related rocks					Tasmanian Dolerite	Mesozoic	Jurassic	582m
Qhmm	Man-made deposits.	Cenozoic cover sequences					Cenozoic	Quaternary	941m

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Atlas of Australian Soils
321-323a Elizabeth Street, North Hobart, TAS 7000



Soils

321-323a Elizabeth Street, North Hobart, TAS 7000

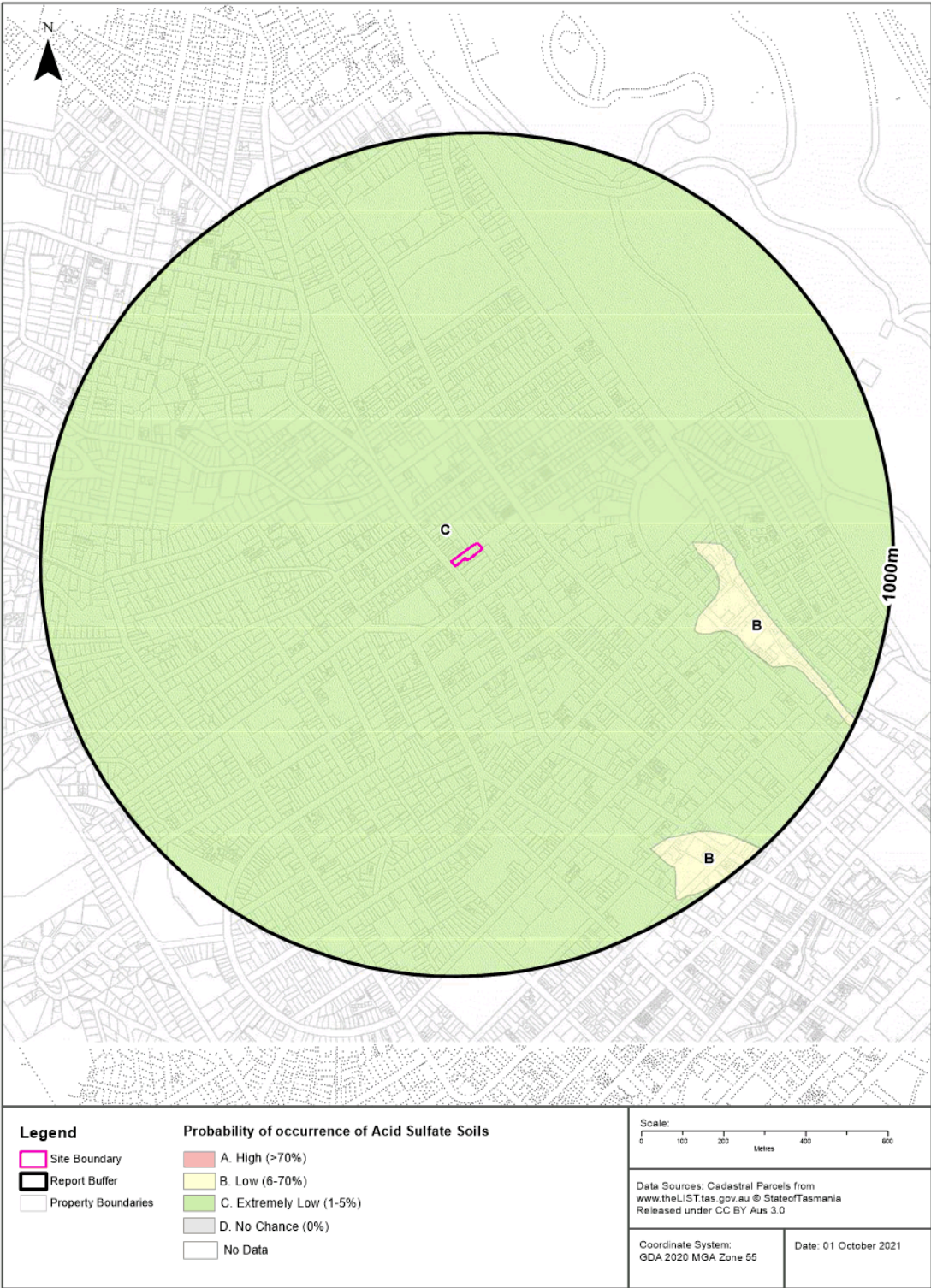
Atlas of Australian Soils

Australian soil types within the dataset buffer:

Symbol	Soil Order	Map Unit Description	Distance to Nearest Feature
Ke5	Vertosol	Hilly; Gentle to moderate, sometimes stony, slopes of deep dark clays (Ug5.14 and Ug5.13) with smaller areas of dark friable earths (Gn3.43) and minor areas of (Dr2.12 and Dr2.13), also steep slopes often stony, of dark clays (Ug5.12).	On-site

Atlas of Australian Soils: ABARES
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Atlas of Australian Acid Sulfate Soils
321-323a Elizabeth Street, North Hobart, TAS 7000



Acid Sulfate Soils

321-323a Elizabeth Street, North Hobart, TAS 7000

Atlas of Australian Acid Sulfate Soils

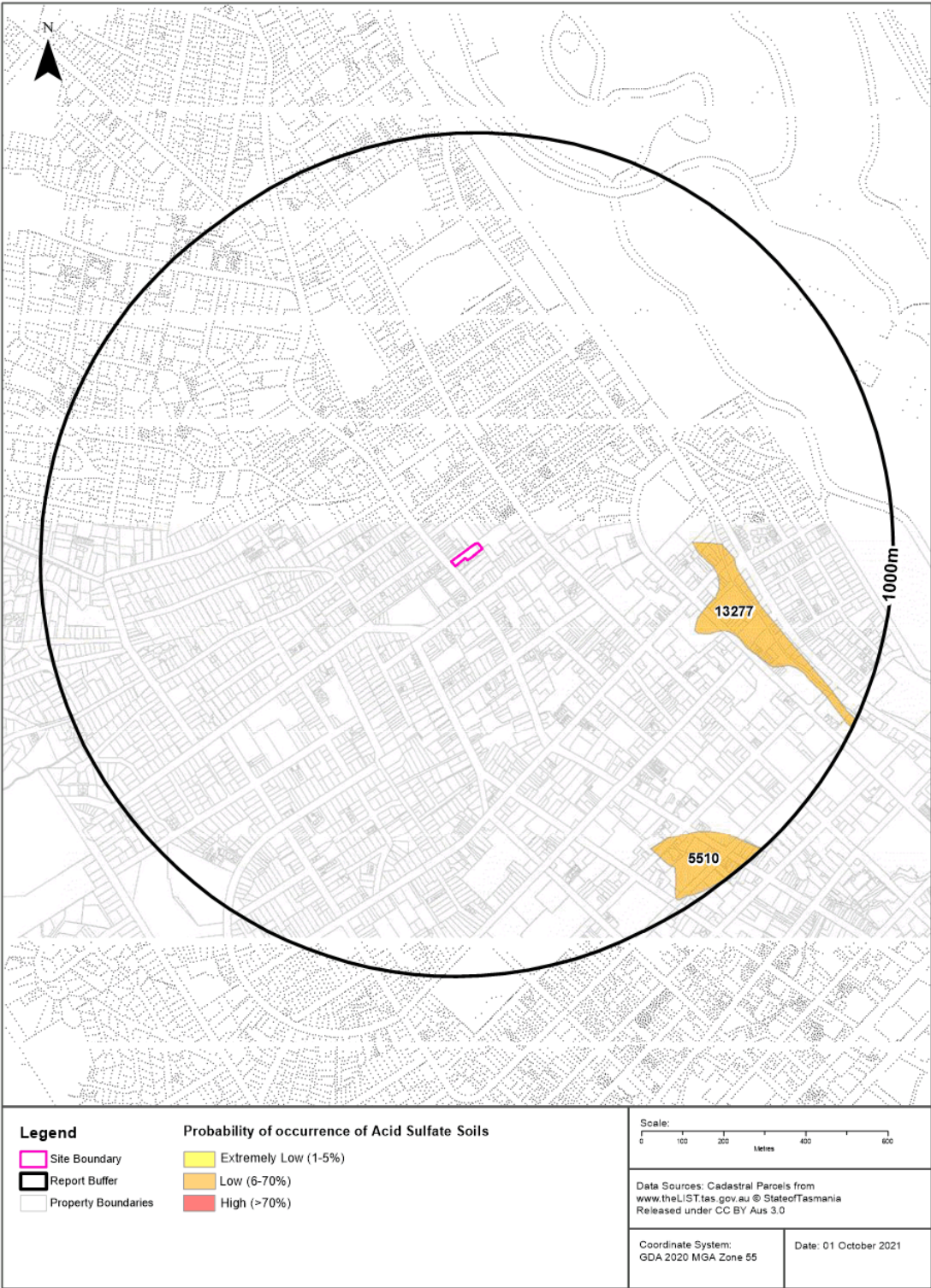
Atlas of Australian Acid Sulfate Soil categories within the dataset buffer:

Class	Description	Distance to Nearest Feature
C	Extremely low probability of occurrence. 1-5% chance of occurrence with occurrences in small localised areas.	On-site
B	Low Probability of occurrence. 6-70% chance of occurrence.	512m

Atlas of Australian Acid Sulfate Soils Data Source: CSIRO
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Acid Sulfate Soils

321-323a Elizabeth Street, North Hobart, TAS 7000



Acid Sulfate Soils

321-323a Elizabeth Street, North Hobart, TAS 7000

Areas of Tasmanian with Potential to Contain Acid Sulfate Soils

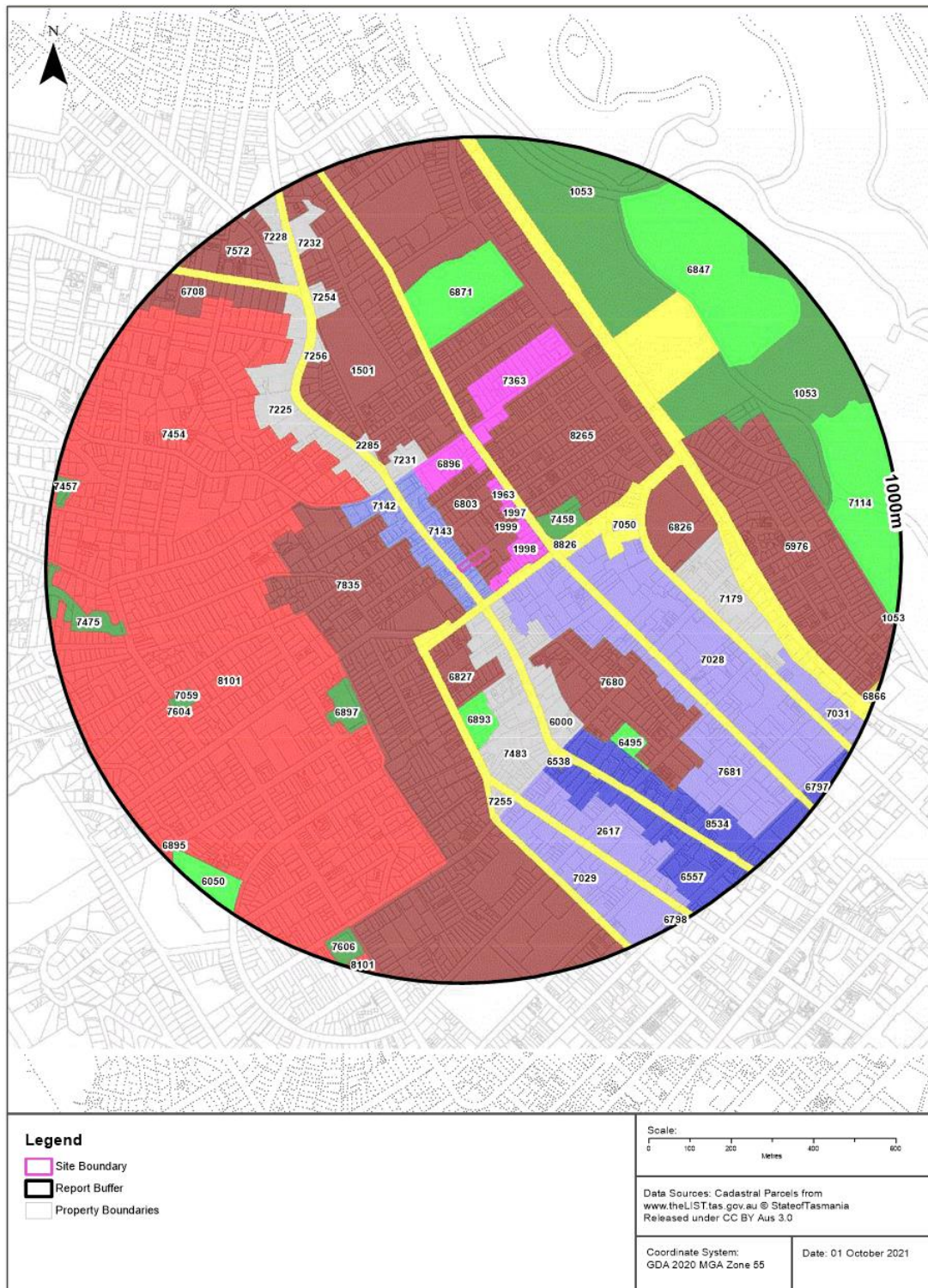
Coastal, inland and marine areas of Tasmania with the potential to contain acid sulfate soils, within the dataset buffer:

Map Id	Atlas Code	Probability	Total Weight	Depth Range	Distance	Direction
13277	Bg(p3)	Low	2		512m	East
5510	Bg(p3)	Low	2		833m	South East

Coastal areas of Tasmania with potential to contain Acid Sulfate Soils from www.theLIST.tas.gov.au ©State of Tasmania
Inland areas of Tasmania with potential to contain Acid Sulfate Soils from www.theLIST.tas.gov.au ©State of Tasmania
Marine areas of Tasmania with potential to contain Acid Sulfate Soils from www.theLIST.tas.gov.au ©State of Tasmania
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Planning Zones

321-323a Elizabeth Street, North Hobart, TAS 7000



Planning

321-323a Elizabeth Street, North Hobart, TAS 7000

Interim Planning Scheme Zoning

Interim Planning Scheme Zones within the dataset buffer:

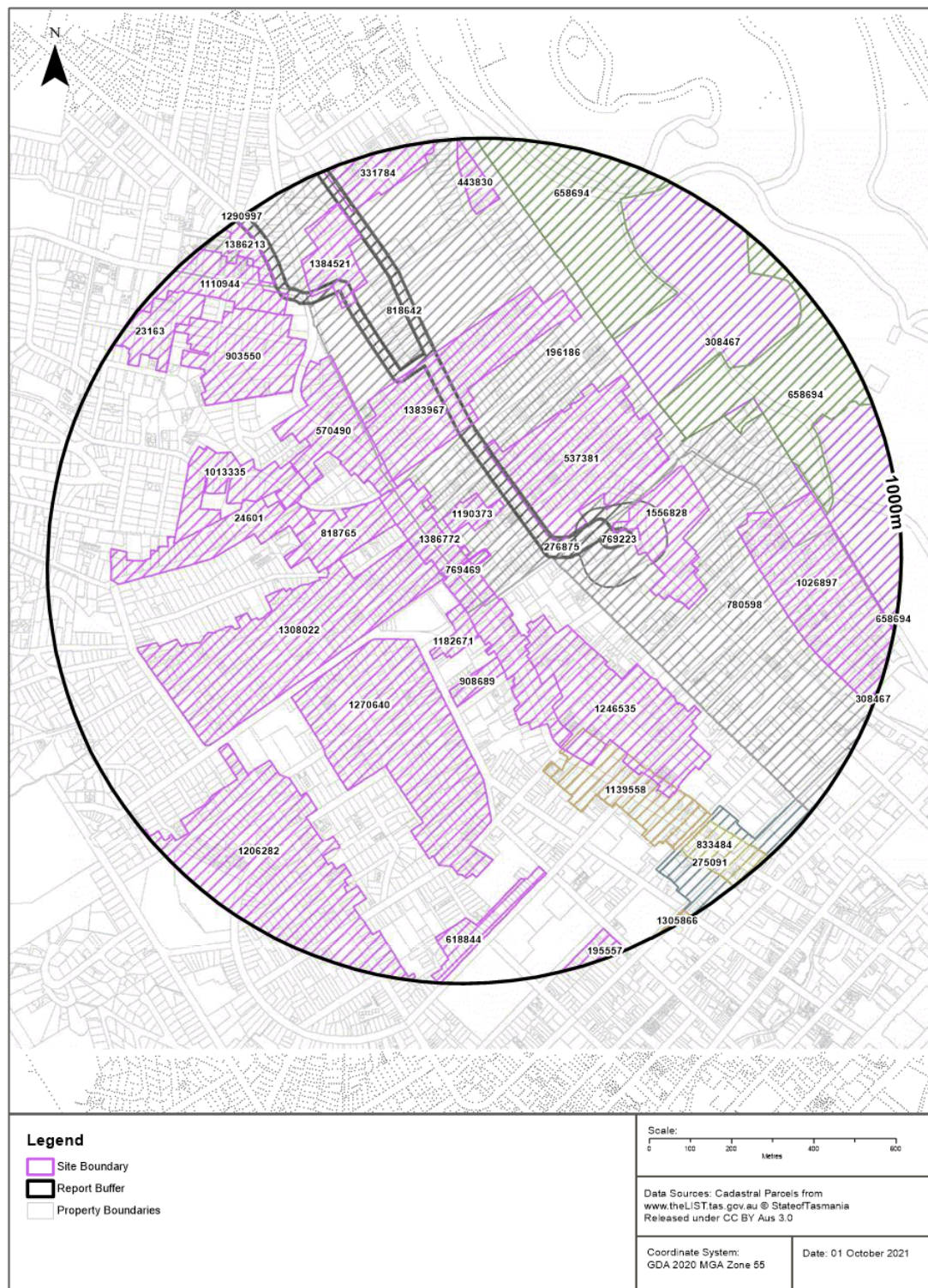
Map Id	Zone Code	Zone Name	Plan Scheme	Comments	Distance	Direction
6803	11	11.0 Inner Residential	Hobart Interim Planning Scheme 2015		0m	On-site
7143	21	21.0 General Business	Hobart Interim Planning Scheme 2015		0m	On-site
8826	28	28.0 Utilities	Hobart Interim Planning Scheme 2015		0m	South
7142	21	21.0 General Business	Hobart Interim Planning Scheme 2015		19m	West
1998	24	24.0 Light Industrial	Hobart Interim Planning Scheme 2015		44m	East
7835	11	11.0 Inner Residential	Hobart Interim Planning Scheme 2015		50m	South
1999	11	11.0 Inner Residential	Hobart Interim Planning Scheme 2015	http://www.iplan.tas.gov.au/Pages/XC.Track.Assessment/SearchAssessment.aspx?id=562	73m	North East
1997	11	11.0 Inner Residential	Hobart Interim Planning Scheme 2015	http://www.iplan.tas.gov.au/Pages/XC.Track.Assessment/SearchAssessment.aspx?id=748	87m	North East
1963	24	24.0 Light Industrial	Hobart Interim Planning Scheme 2015		91m	North East
6000	15	15.0 Urban Mixed Use	Hobart Interim Planning Scheme 2015		102m	South East
7681	23	23.0 Commercial	Hobart Interim Planning Scheme 2015		102m	South East
7483	15	15.0 Urban Mixed Use	Hobart Interim Planning Scheme 2015		109m	South
6827	11	11.0 Inner Residential	Hobart Interim Planning Scheme 2015		128m	South
7458	19	19.0 Open Space	Hobart Interim Planning Scheme 2015		143m	North East
8265	11	11.0 Inner Residential	Hobart Interim Planning Scheme 2015		143m	North
6896	24	24.0 Light Industrial	Hobart Interim Planning Scheme 2015		178m	North
7028	23	23.0 Commercial	Hobart Interim Planning Scheme 2015		189m	South East
7363	24	24.0 Light Industrial	Hobart Interim Planning Scheme 2015		249m	North
7231	15	15.0 Urban Mixed Use	Hobart Interim Planning Scheme 2015		253m	North West
1501	11	11.0 Inner Residential	Hobart Interim Planning Scheme 2015		254m	North West
7225	15	15.0 Urban Mixed Use	Hobart Interim Planning Scheme 2015		257m	North West
7680	11	11.0 Inner Residential	Hobart Interim Planning Scheme 2015		260m	South East
8101	10	10.0 General Residential	Hobart Interim Planning Scheme 2015		270m	West
6893	18	18.0 Recreation	Hobart Interim Planning Scheme 2015		295m	South
7050	23	23.0 Commercial	Hobart Interim Planning Scheme 2015		307m	East
2285	15	15.0 Urban Mixed Use	Hobart Interim Planning Scheme 2015		321m	North West
6897	19	19.0 Open Space	Hobart Interim Planning Scheme 2015		377m	South West
6826	11	11.0 Inner Residential	Hobart Interim Planning Scheme 2015		388m	East
7179	15	15.0 Urban Mixed Use	Hobart Interim Planning Scheme 2015		454m	East
8534	22	22.0 Central Business	Hobart Interim Planning Scheme 2015		473m	South East

Map Id	Zone Code	Zone Name	Plan Scheme	Comments	Distance	Direction
6871	18	18.0 Recreation	Hobart Interim Planning Scheme 2015		500m	North
6538	19	19.0 Open Space	Hobart Interim Planning Scheme 2015		502m	South East
6557	22	22.0 Central Business	Hobart Interim Planning Scheme 2015		508m	South East
2617	23	23.0 Commercial	Hobart Interim Planning Scheme 2015		521m	South East
7255	15	15.0 Urban Mixed Use	Hobart Interim Planning Scheme 2015		526m	South
6495	18	18.0 Recreation	Hobart Interim Planning Scheme 2015		527m	South East
1053	19	19.0 Open Space	Hobart Interim Planning Scheme 2015		543m	North East
5976	11	11.0 Inner Residential	Hobart Interim Planning Scheme 2015		544m	East
7029	23	23.0 Commercial	Hobart Interim Planning Scheme 2015		571m	South
7256	15	15.0 Urban Mixed Use	Hobart Interim Planning Scheme 2015		594m	North West
7254	15	15.0 Urban Mixed Use	Hobart Interim Planning Scheme 2015		678m	North West
7059	19	19.0 Open Space	Hobart Interim Planning Scheme 2015		709m	South West
6847	18	18.0 Recreation	Hobart Interim Planning Scheme 2015		740m	North East
7031	23	23.0 Commercial	Hobart Interim Planning Scheme 2015		741m	East
7454	19	19.0 Open Space	Hobart Interim Planning Scheme 2015		743m	North West
6708	11	11.0 Inner Residential	Hobart Interim Planning Scheme 2015		746m	North West
7604	19	19.0 Open Space	Hobart Interim Planning Scheme 2015		759m	South West
7228	15	15.0 Urban Mixed Use	Hobart Interim Planning Scheme 2015		778m	North West
7572	11	11.0 Inner Residential	Hobart Interim Planning Scheme 2015		802m	North West
7475	19	19.0 Open Space	Hobart Interim Planning Scheme 2015		818m	West
7114	18	18.0 Recreation	Hobart Interim Planning Scheme 2015		827m	East
7232	15	15.0 Urban Mixed Use	Hobart Interim Planning Scheme 2015		840m	North West
7606	19	19.0 Open Space	Hobart Interim Planning Scheme 2015		906m	South
6050	18	18.0 Recreation	Hobart Interim Planning Scheme 2015		919m	South West
7457	19	19.0 Open Space	Hobart Interim Planning Scheme 2015		935m	West
6797	22	22.0 Central Business	Hobart Interim Planning Scheme 2015		954m	South East
6895	18	18.0 Recreation	Hobart Interim Planning Scheme 2015		955m	South West
6866	39	39.0 Particular Purpose	Hobart Interim Planning Scheme 2015	PPZ 8 - University of Tasmania (Domain House Campus) and Philip Smith Centre	975m	East
6798	22	22.0 Central Business	Hobart Interim Planning Scheme 2015		980m	South East

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Planning Overlays

321-323a Elizabeth Street, North Hobart, TAS 7000



Planning

321-323a Elizabeth Street, North Hobart, TAS 7000

Interim Planning Scheme Overlays

Interim Planning Scheme Overlays within the dataset buffer:

Map Id	Overlay Code	Overlay Name	Plan Scheme	Description	Class	Comments	Distance	Direction
196186	116.SAP.3	Specific Area Plan	Hobart Interim Planning Scheme 2015	Royal Hobart Hospital Helipad Airspace Specific Area Plan	Outer Area 100m AHD	http://www.iplan.tas.gov.au/Pages/XC.Track.Assessment/SearchAssessment.aspx?id=752	0m	On-site
769469	116.SAP.2	Specific Area Plan	Hobart Interim Planning Scheme 2015	North Hobart Specific Area Plan			0m	On-site
1386772	116.HER	Heritage Precinct	Hobart Interim Planning Scheme 2015	Heritage Number: NH6			0m	On-site
1308022	116.HER	Heritage Precinct	Hobart Interim Planning Scheme 2015	Heritage Number: WH1			38m	South West
1190373	116.HER	Heritage Precinct	Hobart Interim Planning Scheme 2015	Heritage Number: NH7			50m	North
1182671	116.HER	Heritage Precinct	Hobart Interim Planning Scheme 2015	Heritage Number: NH10			75m	South
818642	116.ETI	Electricity Transmission Infrastructure Protection	Hobart Interim Planning Scheme 2015		Underground ETC		109m	North West
276875	116.ETI	Electricity Transmission Infrastructure Protection	Hobart Interim Planning Scheme 2015		IPA 11m Underground Transend Cables		113m	North West
537381	116.HER	Heritage Precinct	Hobart Interim Planning Scheme 2015	Heritage Number: NH8			143m	North East
780598	116.SAP.3	Specific Area Plan	Hobart Interim Planning Scheme 2015	Royal Hobart Hospital Helipad Airspace Specific Area Plan	Inner Area 64.5m AHD	http://www.iplan.tas.gov.au/Pages/XC.Track.Assessment/SearchAssessment.aspx?id=752	159m	East
818765	116.HER	Heritage Precinct	Hobart Interim Planning Scheme 2015	Heritage Number: NH5			184m	West
1246535	116.HER	Heritage Precinct	Hobart Interim Planning Scheme 2015	Heritage Number: NH12			189m	South East
1270640	116.HER	Heritage Precinct	Hobart Interim Planning Scheme 2015	Heritage Number: WH2			202m	South
769223	116.ETI	Electricity Transmission Infrastructure Protection	Hobart Interim Planning Scheme 2015		Substation buffer areas		213m	East
908689	116.HER	Heritage Precinct	Hobart Interim Planning Scheme 2015	Heritage Number: NH11			222m	South
570490	116.HER	Heritage Precinct	Hobart Interim Planning Scheme 2015	Heritage Number: NH3			244m	North West
1383967	116.HER	Heritage Precinct	Hobart Interim Planning Scheme 2015	Heritage Number: NH4			263m	North
1556828	116.HER	Heritage Precinct	Hobart Interim Planning Scheme 2015	Heritage Number: NH9			307m	East
24601	116.HER	Heritage Precinct	Hobart Interim Planning Scheme 2015	Heritage Number: MS5			364m	West
1013335	116.HER	Heritage Precinct	Hobart Interim Planning Scheme 2015	Heritage Number: MS4			409m	West

Map Id	Overlay Code	Overlay Name	Plan Scheme	Description	Class	Comments	Distance	Direction
1139558	116.CBF	Central Business Fringe Area	Hobart Interim Planning Scheme 2015			http://www.iplan.tas.gov.au/Pages/XC.Track.Assessment/SearchAssessment.aspx?id=585	473m	South East
658694	116.BPA	Biodiversity Protection Area	Hobart Interim Planning Scheme 2015				543m	North East
308467	116.QCL	Queens Domain Cultural Landscape	Hobart Interim Planning Scheme 2015			http://www.iplan.tas.gov.au/Pages/XC.Track.Assessment/SearchAssessment.aspx?id=686	551m	North East
903550	116.HER	Heritage Precinct	Hobart Interim Planning Scheme 2015	Heritage Number: MS3			589m	North West
1026897	116.HER	Heritage Precinct	Hobart Interim Planning Scheme 2015	Heritage Number: G1			605m	East
1206282	116.HER	Heritage Precinct	Hobart Interim Planning Scheme 2015	Heritage Number: WH3			653m	South West
1384521	116.HER	Heritage Precinct	Hobart Interim Planning Scheme 2015	Heritage Number: NH2			676m	North West
618844	116.HER	Heritage Precinct	Hobart Interim Planning Scheme 2015	Heritage Number: WH4			739m	South
1110944	116.HER	Heritage Precinct	Hobart Interim Planning Scheme 2015	Heritage Number: NT9. Heritage Area: Augusta Road			746m	North West
443830	116.HER	Heritage Precinct	Hobart Interim Planning Scheme 2015	Heritage Number: NH1			816m	North
1386213	116.HER	Heritage Precinct	Hobart Interim Planning Scheme 2015	Heritage Number: NT13. Heritage Area: Clare Street			819m	North West
275091	116.CBC	Central Business Core Area	Hobart Interim Planning Scheme 2015			http://www.iplan.tas.gov.au/Pages/XC.Track.Assessment/SearchAssessment.aspx?id=585	828m	South East
833484	116.AFT	Active Frontage	Hobart Interim Planning Scheme 2015				840m	South East
23163	116.HER	Heritage Precinct	Hobart Interim Planning Scheme 2015	Heritage Number: MS2			854m	North West
331784	116.HER	Heritage Precinct	Hobart Interim Planning Scheme 2015	Heritage Number: NT8. Heritage Area: Stoke Street			881m	North
195557	116.HER	Heritage Precinct	Hobart Interim Planning Scheme 2015	Heritage Number: WH5			931m	South
1305866	116.CBF	Central Business Fringe Area	Hobart Interim Planning Scheme 2015			http://www.iplan.tas.gov.au/Pages/XC.Track.Assessment/SearchAssessment.aspx?id=585	977m	South
1290997	116.HER	Heritage Precinct	Hobart Interim Planning Scheme 2015	Heritage Number: NT7. Heritage Area: Frazer Street			999m	North West

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Natural Hazards

321-323a Elizabeth Street, North Hobart, TAS 7000

Interim Planning Scheme Overlays - Flood

Interim Planning Scheme Flood Overlays within the dataset buffer:

Overlay Name	Plan Scheme	Description	Class	Comments	Distance to Nearest Feature
N/A	No records within buffer				

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Natural Hazards

321-323a Elizabeth Street, North Hobart, TAS 7000

Interim Planning Scheme Overlays - Coastal Inundation

Interim Planning Scheme Coastal Inundation Overlays within the dataset buffer:

Overlay Name	Plan Scheme	Description	Class	Comments	Distance to Nearest Feature
N/A	No records within buffer				

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Natural Hazards

321-323a Elizabeth Street, North Hobart, TAS 7000

Interim Planning Scheme Overlays - Coastal Erosion

Interim Planning Scheme Coastal Erosion Overlays within the dataset buffer:

Overlay Name	Plan Scheme	Description	Class	Comments	Distance to Nearest Feature
N/A	No records within buffer				

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Natural Hazards - Landslide

321-323a Elizabeth Street, North Hobart, TAS 7000



Natural Hazards

321-323a Elizabeth Street, North Hobart, TAS 7000

Interim Planning Scheme Overlays - Landslide

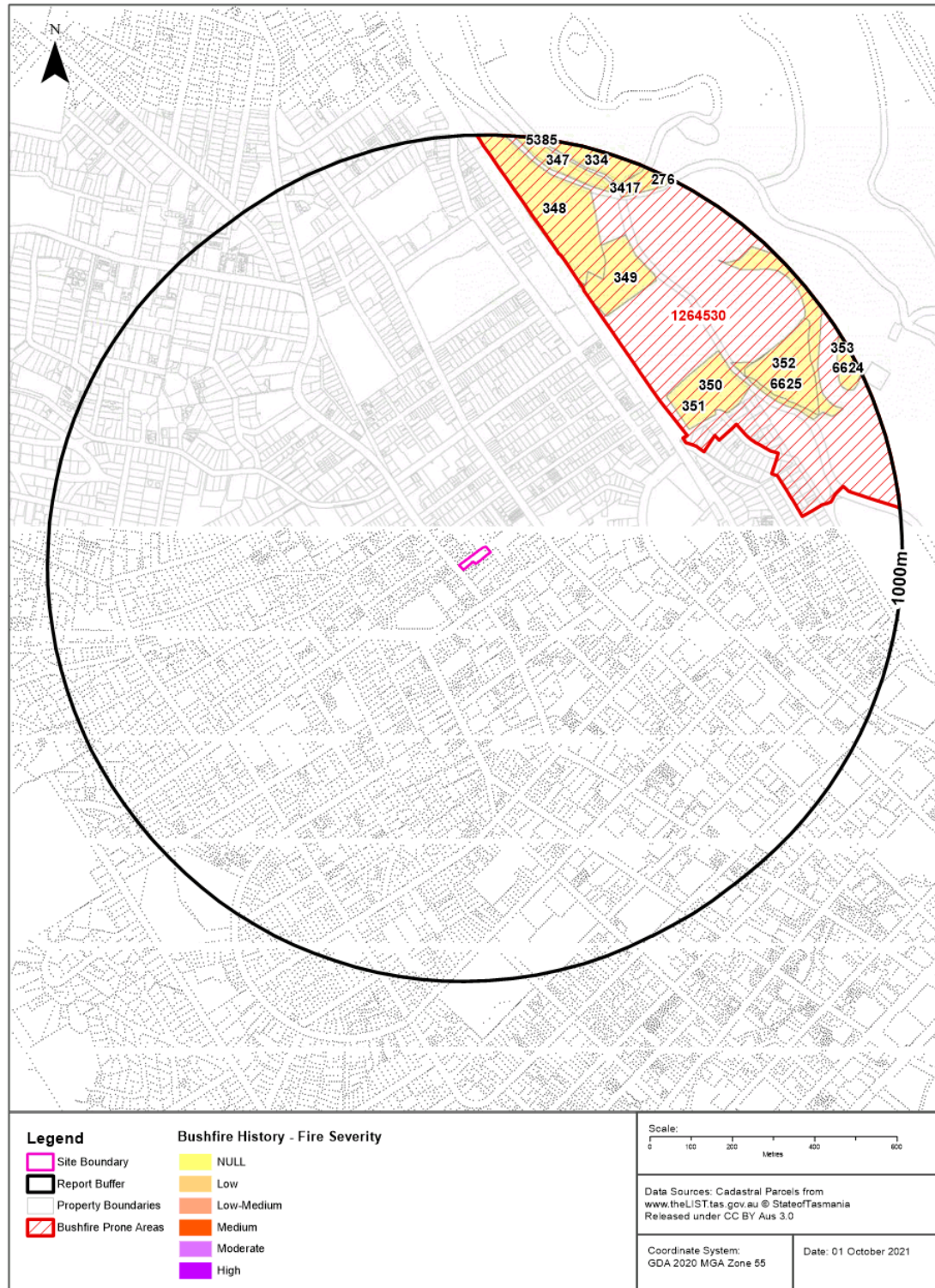
Interim Planning Scheme Landslide Overlays within the dataset buffer:

Overlay Name	Plan Scheme	Description	Class	Comments	Distance to Nearest Feature
Landslide Hazard Area	Hobart Interim Planning Scheme 2015	Hobart-Glenorchy deep-seated slide susceptibility (Rosetta scenario)	Low	This area has no known active landslides, however it has been identified as being susceptible to landslide by Mineral Resources Tasmania (MRT).	345m
Landslide Hazard Area	Hobart Interim Planning Scheme 2015	Rockfall susceptibility source + runoff area 34 degrees	Medium	The area has known landslide features, or is within a landslide susceptibility zone, or has legislated controls to limit disturbance of adjacent unstable areas.	467m
Landslide Hazard Area	Hobart Interim Planning Scheme 2015	Rockfall susceptibility runoff area 30 degrees	Low	This area has no known active landslides, however it has been identified as being susceptible to landslide by Mineral Resources Tasmania (MRT).	714m
Landslide Hazard Area	Hobart Interim Planning Scheme 2015	Debris flow susceptibility Mountain runoff 22-12 Q4a	Low	This area has no known active landslides, however it has been identified as being susceptible to landslide by Mineral Resources Tasmania (MRT).	760m
Landslide Hazard Area	Hobart Interim Planning Scheme 2015	Debris flow susceptibility Mountain runoff 26-22 Q3	Low	This area has no known active landslides, however it has been identified as being susceptible to landslide by Mineral Resources Tasmania (MRT).	797m
Landslide Hazard Area	Hobart Interim Planning Scheme 2015	Debris flow susceptibility Mountain runoff 30-26 Q2	Medium	The area has known landslide features, or is within a landslide susceptibility zone, or has legislated controls to limit disturbance of adjacent unstable areas.	809m
Landslide Hazard Area	Hobart Interim Planning Scheme 2015	Debris flow susceptibility Mountain source + runoff >30 Q1	Medium	The area has known landslide features, or is within a landslide susceptibility zone, or has legislated controls to limit disturbance of adjacent unstable areas.	821m

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Natural Hazards - Bushfire

321-323a Elizabeth Street, North Hobart, TAS 7000



Natural Hazards

321-323a Elizabeth Street, North Hobart, TAS 7000

Interim Planning Scheme Overlays - Bushfire

Interim Planning Scheme Bushfire Overlays within the dataset buffer:

Map Id	Overlay Name	Plan Scheme	Description	Class	Comments	Distance	Direction
1264530	Bushfire Prone Areas	Hobart Interim Planning Scheme 2015			Bushfire prone areas mapping added to overlays. Refer to http://www.iplan.tas.gov.au/Pages/XC.Track.Assessment/SearchAssessment.aspx?id=739	543m	North East

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Bushfire History

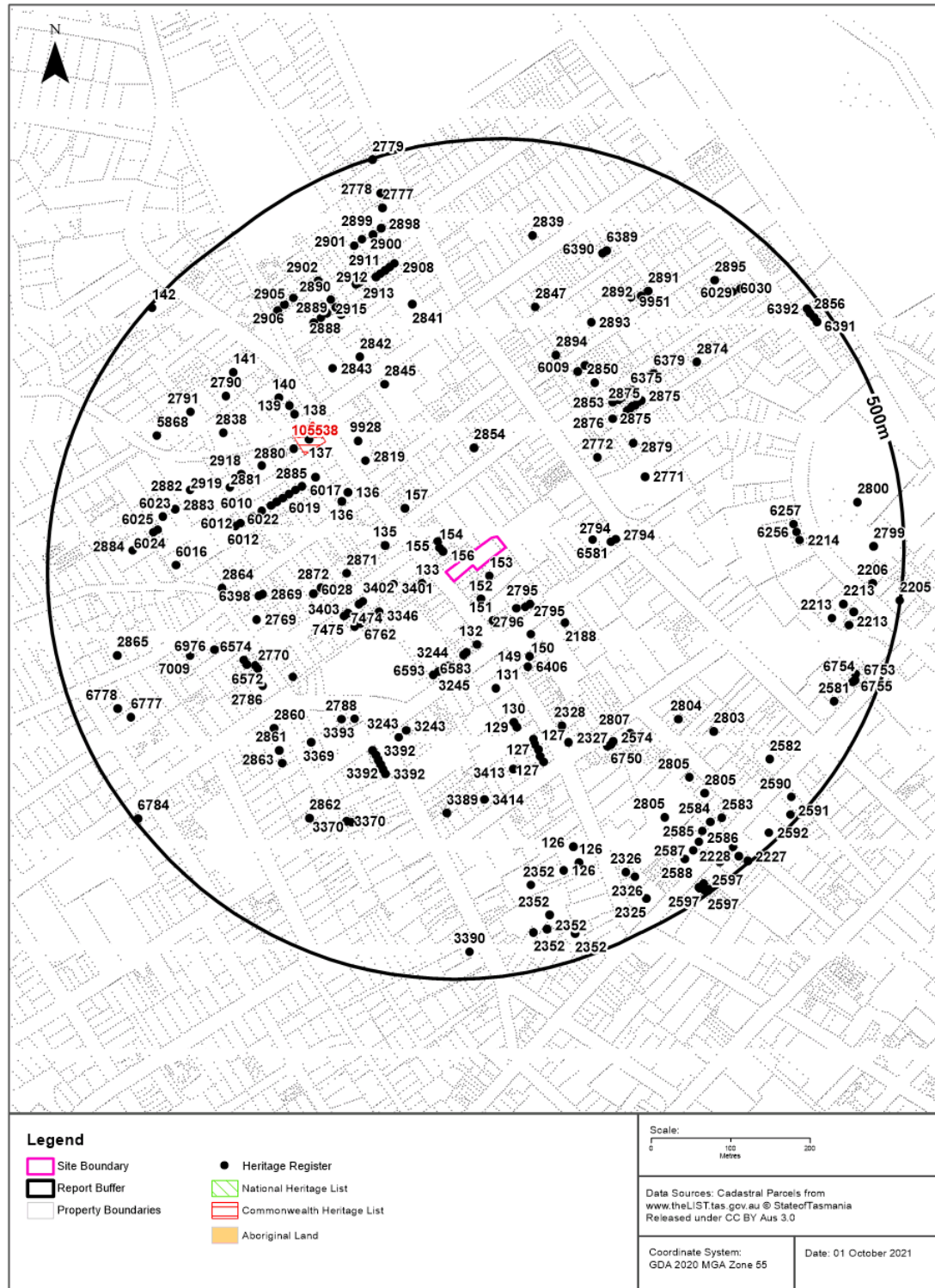
Bushfire history within the dataset buffer:

Map Id	Fire Name	Fire Type	Ignition Date	Severity	Incident Number	Distance	Direction
350	QD11	Planned Burn	11/1/2000 12:00:00 AM			568m	North East
351	QD11	Planned Burn	5/1/2008 12:00:00 AM			568m	North East
349	QD09	Planned Burn	5/1/2005 12:00:00 AM			632m	North East
348	QD08	Planned Burn	5/1/2002 12:00:00 AM			681m	North
352	QD12	Planned Burn	4/1/2004 12:00:00 AM			744m	North East
6625	Athletics Centre South	Planned Burn	10/5/2018 12:00:00 AM		HHZ017BU	754m	North East
3417	Upper Domain Road	Bushfire	1/24/2013 12:00:00 AM		202602	910m	North East
347	QD07	Planned Burn	12/1/2003 12:00:00 AM			912m	North
276	QD36	Planned Burn	5/1/2008 12:00:00 AM			927m	North East
334	QD05	Planned Burn	11/1/2004 12:00:00 AM			936m	North
5385	QD05 QD06	Planned Burn	5/4/2017 12:00:00 AM		HRB2015/16-02	936m	North
6624	Gunpowder Mag	Planned Burn	5/8/2019 12:00:00 AM		HHZ051BU	944m	North East
353	QD13	Planned Burn	4/1/2002 12:00:00 AM			953m	North East

Fire History from www.theLIST.tas.gov.au ©State of Tasmania
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Heritage

321-323a Elizabeth Street, North Hobart, TAS 7000



Heritage

321-323a Elizabeth Street, North Hobart, TAS 7000

Commonwealth Heritage List

What are the Commonwealth Heritage List Items located within the dataset buffer:

Place Id	Name	Address	Place File No	Class	Status	Register Date	Distance	Direction
105538	North Hobart Post Office	412-414 Elizabeth St, North Hobart TAS	6/01/004/0264	Historic	Listed place	2011-11-08	223m	North West

Heritage Data Source: Australian Government Department of the Environment and Energy - Heritage Branch
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National Heritage List

What are the National Heritage List Items located within the dataset buffer:

Place Id	Name	Address	Place File No	Class	Status	Register Date	Distance	Direction
N/A	No records in buffer							

Heritage Data Source: Australian Government Department of the Environment and Energy - Heritage Branch
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Tasmanian Heritage Register

Tasmanian Heritage Register sites within the dataset buffer:

Map Id	Name	Address	Status	CPR No	Title	Folio	Dist	Dir
153	Commercial Retail	315 ELIZABETH ST, NORTH HOBART	Permanently Registered		109396	1	16m	South East
156	Commercial Retail	331 ELIZABETH ST, NORTH HOBART	Permanently Registered		41557	1	22m	West
154	Commercial Retail and Residential	333 ELIZABETH ST, NORTH HOBART	Permanently Registered		48331	1	29m	West
133	Commercial Retail	366 ELIZABETH ST, NORTH HOBART	Permanently Registered		56534	2	33m	South West
155	Commercial Retail	335 ELIZABETH ST, NORTH HOBART	Permanently Registered		32261	1	36m	West
152	Former Dallas Arms Inn / Davis College	313-313A ELIZABETH ST, NORTH HOBART	Permanently Registered		92977	1	37m	South
151	Shop	305 ELIZABETH ST, NORTH HOBART	Permanently Registered		139569	2	67m	South
3401	House	2 PITT ST, NORTH HOBART	Permanently Registered		113717	1	67m	West
2796	Conjoined houses	61-67 BURNETT ST, NORTH HOBART	Permanently Registered		124219	1	69m	South East
2795	Conjoined Cottages	57 BURNETT ST, NORTH HOBART	Permanently Registered		131077	1	75m	South East
2795	Conjoined Cottages	59 BURNETT ST, NORTH HOBART	Permanently Registered		135476	1	75m	South East
135	Conjoined Shops	382-384 ELIZABETH ST, NORTH HOBART	Permanently Registered		154369	1	83m	West
132	Palfreyman's Building	340 ELIZABETH ST, NORTH HOBART	Permanently Registered		103119	4	85m	South
2798	Conjoined House	73 BURNETT ST, NORTH HOBART	Permanently Registered		103119	2	91m	South
6583	Conjoined House	75 BURNETT ST, NORTH HOBART	Permanently Registered		103119	1	93m	South
157	Commercial Retail Building	349 ELIZABETH ST, NORTH HOBART	Permanently Registered		77836	1	94m	North West
3346	Cottage	9 LITTLE ARTHUR ST, NORTH HOBART	Permanently Registered		135205	1	97m	South West
150	Stone Wall Behind Empire Hotel	299 ELIZABETH ST, NORTH HOBART	Permanently Registered		105656	3	106m	South East

Map Id	Name	Address	Status	CPR No	Title	Folio	Dist	Dir
3244	Conjoined Houses	81-83 BURNETT ST, NORTH HOBART	Permanently Registered		28020	7	107m	South
3402	Conjoined House	8 PITT ST, NORTH HOBART	Permanently Registered		107476	8	110m	West
6581	Town House	39 BURNETT ST, NORTH HOBART	Permanently Registered		28808	3	110m	East
2854	House	11 LEFROY ST, NORTH HOBART	Permanently Registered		35754	1	115m	North
3245	Conjoined house (85 Burnett Street)	85-87 BURNETT ST, NORTH HOBART	Permanently Registered		28020	2	115m	South
7474	Conjoined Cottage	10 PITT ST, NORTH HOBART	Permanently Registered		107476	10	116m	West
6762	Conjoined House	13 LITTLE ARTHUR ST, NORTH HOBART	Permanently Registered		56881	1	119m	South West
6593	Conjoined House (87 Burnett Street)	85-87 BURNETT ST, NORTH HOBART	Permanently Registered		28020	2	120m	South
2188	House	60 BURNETT ST, NORTH HOBART	Permanently Registered		116527	1	121m	South East
2871	Cottage	13 PITT ST, NORTH HOBART	Permanently Registered		123870	1	124m	West
6763	Conjoined House	15 LITTLE ARTHUR ST, NORTH HOBART	Permanently Registered		56881	2	125m	South West
149	Offices and Residences (297 Elizabeth St)	297 ELIZABETH ST, NORTH HOBART	Permanently Registered		57249	297	127m	South East
2794	Conjoined Cottages	276 ARGYLE ST, NORTH HOBART	Permanently Registered		151359	0	132m	East
3403	Conjoined House	14 PITT ST, NORTH HOBART	Permanently Registered		107308	14	133m	South West
6764	Cottage	17 LITTLE ARTHUR ST, NORTH HOBART	Permanently Registered		22123	1	133m	South West
2794	Conjoined Cottages	276 ARGYLE ST, NORTH HOBART	Permanently Registered		151359	2	138m	East
6406	Conjoined House (295 Elizabeth)	295 ELIZABETH ST, NORTH HOBART	Permanently Registered		57249	295	138m	South East
7475	Conjoined House	16 PITT ST, NORTH HOBART	Permanently Registered		107308	16	139m	South West
131	House	336 ELIZABETH ST, NORTH HOBART	Permanently Registered		33839	2	145m	South
2872	Cottage	19 PITT ST, NORTH HOBART	Permanently Registered		23156	4	157m	West
136	Queen's Head Hotel	400-404 ELIZABETH ST, NORTH HOBART	Permanently Registered		131527	1	158m	North West
136	Queen's Head Hotel	400-404 ELIZABETH ST, NORTH HOBART	Permanently Registered		42187	3	158m	North West
2772	House	323 ARGYLE ST, NORTH HOBART	Permanently Registered		224644	1	161m	North East
6028	House	21 PITT ST, NORTH HOBART	Permanently Registered		42760	4	168m	West
2819	Former Soundy's Building	367-375 ELIZABETH ST, NORTH HOBART	Permanently Registered		163809	1	172m	North West
130	House	324 ELIZABETH ST, NORTH HOBART	Permanently Registered		251883	1	193m	South
2771	Rubble Stone Wall only	313-321 ARGYLE ST, NORTH HOBART	Permanently Registered		37339	1	196m	North East
3243	Crescent Hotel	100 BURNETT ST, NORTH HOBART	Permanently Registered		90609	1	197m	South
9928	State Cinema	367-375 ELIZABETH ST, NORTH HOBART	Permanently Registered		163809	1	197m	North West
129	House	322 ELIZABETH ST, NORTH HOBART	Permanently Registered		42569	1	200m	South
2885	Swan Street Uniting Church	2 SWAN ST, NORTH HOBART	Permanently Registered		165548	5	202m	North West
2876	Cottage	57 SMITH ST, NORTH HOBART	Permanently Registered		109589	1	207m	North East
2879	House	42 SMITH ST, NORTH HOBART	Permanently Registered		123845	1	207m	North East
3243	Crescent Hotel	100 BURNETT ST, NORTH HOBART	Permanently Registered		115402	1	208m	South West
6017	Ardrossan	4 SWAN ST, NORTH HOBART	Permanently Registered		61735	1	210m	West
3393	Gatesheath	380 MURRAY ST, NORTH HOBART	Permanently Registered		95984	1	213m	South West
6018	Dalkeith	6 SWAN ST, NORTH HOBART	Permanently Registered		61735	2	215m	West
6019	House	8 SWAN ST, NORTH HOBART	Permanently Registered		61735	3	219m	West

Map Id	Name	Address	Status	CPR No	Title	Folio	Dist	Dir
127	Terraces	318 ELIZABETH ST, NORTH HOBART	Permanently Registered		132776	4	222m	South
2853	Cottage	58 GEORGE ST, NORTH HOBART	Permanently Registered		58957	1	222m	North East
2328	Commercial Retail	278 ELIZABETH ST, NORTH HOBART	Permanently Registered		45174	1	223m	South East
2788	House	2 ARTHUR ST, NORTH HOBART	Permanently Registered		222955	1	224m	South West
6020	Stirling	10 SWAN ST, NORTH HOBART	Permanently Registered		61735	4	224m	West
2875	Conjoined Terrace	53 SMITH ST, NORTH HOBART	Permanently Registered		133075	53	228m	North East
127	Terraces	316 ELIZABETH ST, NORTH HOBART	Permanently Registered		132776	3	229m	South
2850	Cottage	55-57 GEORGE ST, NORTH HOBART	Permanently Registered		51857	1	229m	North East
6021	Rosslyn	12 SWAN ST, NORTH HOBART	Permanently Registered		61735	5	229m	West
6370	Conjoined House	56 GEORGE ST, NORTH HOBART	Permanently Registered		133075	56	230m	North East
2869	Conjoined Cottage (34 Newdegate Street)	UNIT 2 34-36 NEWDEGATE ST, NORTH HOBART	Permanently Registered		161111	2	231m	West
2875	Conjoined Terrace	51 SMITH ST, NORTH HOBART	Permanently Registered		133075	51	231m	North East
6009	House	50 WELLINGTON ST, NORTH HOBART	Permanently Registered		40846	1	231m	North East
2768	Cottage	1 ANDREW ST, NORTH HOBART	Permanently Registered		126117	1	233m	South West
6022	Renfrew	14 SWAN ST, NORTH HOBART	Permanently Registered		61735	6	234m	West
6371	Conjoined House	54 GEORGE ST, NORTH HOBART	Permanently Registered		133075	54	234m	North East
2845	Cottage	76-80 FEDERAL ST, NORTH HOBART	Permanently Registered		39191	1	235m	North West
2875	Conjoined Terrace	49 SMITH ST, NORTH HOBART	Permanently Registered		133075	49	236m	North East
3392	Shop and Terrace Houses	364-374 MURRAY ST, NORTH HOBART	Permanently Registered		58895	6	236m	South West
6398	Conjoined Cottage (36 Newdegate Street)	UNIT 1 34-36 NEWDEGATE ST, NORTH HOBART	Permanently Registered		161111	1	236m	West
127	Terraces	314 ELIZABETH ST, NORTH HOBART	Permanently Registered		132776	2	237m	South
6372	Conjoined House	52 GEORGE ST, NORTH HOBART	Permanently Registered		133075	52	238m	North East
137	North Hobart Post Office	412 ELIZABETH ST, NORTH HOBART	Permanently Registered		233925	1	239m	North West
3392	Shop and Terrace Houses	364-374 MURRAY ST, NORTH HOBART	Permanently Registered		58895	5	239m	South West
2875	Conjoined Terrace	47 SMITH ST, NORTH HOBART	Permanently Registered		133075	47	240m	North East
2894	Alfred Cottage	49 WELLINGTON ST, NORTH HOBART	Permanently Registered		57694	2	240m	North
2896	House	48 WELLINGTON ST, NORTH HOBART	Permanently Registered		31058	1	242m	North East
2887	House	16 SWAN ST, NORTH HOBART	Permanently Registered		118171	13	243m	West
6374	Conjoined House	50 GEORGE ST, NORTH HOBART	Permanently Registered		133075	50	243m	North East
3392	Shop and Terrace Houses	364-374 MURRAY ST, NORTH HOBART	Permanently Registered		58895	4	244m	South West
2769	Cottage	11 ANDREW ST, NORTH HOBART	Permanently Registered		129511	1	245m	West
2875	Conjoined Terrace	45 SMITH ST, NORTH HOBART	Permanently Registered		133075	45	245m	North East
2880	Conjoined Houses	3-5 SWAN ST, NORTH HOBART	Permanently Registered		63449	6	245m	North West
127	Terraces	312 ELIZABETH ST, NORTH HOBART	Permanently Registered		132776	1	246m	South
2327	Shop	273 ELIZABETH ST, NORTH HOBART	Permanently Registered		152342	1	246m	South East
3392	Shop and Terrace Houses	364-374 MURRAY ST, NORTH HOBART	Permanently Registered		58895	3	248m	South West
3413	House	59 TASMA ST, NORTH HOBART	Permanently Registered		46356	1	248m	South

Map Id	Name	Address	Status	CPR No	Title	Folio	Dist	Dir
6375	Conjoined House	48 GEORGE ST, NORTH HOBART	Permanently Registered		133075	48	248m	North East
2875	Conjoined Terrace	43 SMITH ST, NORTH HOBART	Permanently Registered		133075	43	249m	North East
6376	Conjoined House	46 GEORGE ST, NORTH HOBART	Permanently Registered		133075	46	251m	North East
2880	Conjoined Houses	3-5 SWAN ST, NORTH HOBART	Permanently Registered		63449	7	252m	North West
6010	House	18 SWAN ST, NORTH HOBART	Permanently Registered		73130	1	252m	West
3392	Shop and Terrace Houses	364-374 MURRAY ST, NORTH HOBART	Permanently Registered		58895	2	253m	South West
128	Shop	310 ELIZABETH ST, NORTH HOBART	Permanently Registered		108080	1	254m	South
3392	Shop and Terrace Houses	364-374 MURRAY ST, NORTH HOBART	Permanently Registered		58895	1	257m	South West
6012	House	22 SWAN ST, NORTH HOBART	Permanently Registered		138041	1	264m	West
2770	Conjoined Terrace House	4 ANDREW ST, NORTH HOBART	Permanently Registered		57856	4	265m	South West
2881	Llanberis	7 SWAN ST, NORTH HOBART	Permanently Registered		248679	1	266m	North West
6572	Conjoined House	6 ANDREW ST, NORTH HOBART	Permanently Registered		57856	6	266m	South West
2786	Hardcastle	27 ARTHUR ST, WEST HOBART	Permanently Registered		121523	1	270m	South West
3369	House	6 MARY ST, NORTH HOBART	Permanently Registered		123719	1	270m	South West
6012	House	22A SWAN ST, NORTH HOBART	Permanently Registered		138041	2	270m	West
138	House	418 ELIZABETH ST, NORTH HOBART	Permanently Registered		31374	1	274m	North West
6573	Conjoined House	8 ANDREW ST, NORTH HOBART	Permanently Registered		58777	8	275m	South West
2574	Conjoined House	34 TASMA ST, NORTH HOBART	Permanently Registered		28754	1	276m	South East
6574	Conjoined House	10 ANDREW ST, NORTH HOBART	Permanently Registered		58777	10	276m	South West
6751	Conjoined House	38 TASMA ST, NORTH HOBART	Permanently Registered		167197	1	276m	South East
3414	House	69 TASMA ST, NORTH HOBART	Permanently Registered		59868	2	277m	South
6750	Conjoined House	36 TASMA ST, NORTH HOBART	Permanently Registered		28754	2	277m	South East
2807	Kallimna	48 CHURCH ST, NORTH HOBART	Permanently Registered		55107	1	280m	South East
2842	Australian Italian Club	77 FEDERAL ST, NORTH HOBART	Permanently Registered		141923	1	281m	North West
2864	Cottage	35 NEWDEGATE ST, NORTH HOBART	Permanently Registered		141073	2	281m	West
2918	House	9 SWAN ST, NORTH HOBART	Permanently Registered		22525	2	284m	West
6379	Cottage	38 GEORGE ST, NORTH HOBART	Permanently Registered		119304	1	284m	North East
139	House	420 ELIZABETH ST, NORTH HOBART	Permanently Registered		126255	2	286m	North West
2843	House	81-83 FEDERAL ST, NORTH HOBART	Permanently Registered		111900	1	289m	North West
2919	House	9A SWAN ST, NORTH HOBART	Permanently Registered		70176	1	290m	West
2806	Glenlynn	UNIT 6 42-46 CHURCH ST, NORTH HOBART	Permanently Registered		54567	6	291m	South East
2806	Glenlynn	UNIT 7 42-46 CHURCH ST, NORTH HOBART	Permanently Registered		54567	7	292m	South East
2847	Cottage	57 FELTHAM ST, NORTH HOBART	Permanently Registered		19736	1	292m	North
2860	House	1 MARY ST, NORTH HOBART	Permanently Registered		69388	1	292m	South West
3389	House	295 MURRAY ST, NORTH HOBART	Permanently Registered		154561	1	292m	South
2893	Conjoined Houses	37-39 WELLINGTON ST, NORTH HOBART	Permanently Registered		29215	1	294m	North East
140	House	422 ELIZABETH ST, NORTH HOBART	Permanently Registered		13502	3	303m	North West

Map Id	Name	Address	Status	CPR No	Title	Folio	Dist	Dir
2861	House	3 MARY ST, NORTH HOBART	Permanently Registered		237447	1	305m	South West
2804	Cottages	45-51 CHURCH ST, NORTH HOBART	Permanently Registered		102819	1	306m	South East
6976	Cottage	37 PITT ST, NORTH HOBART	Permanently Registered		241717	1	307m	West
2841	Hellenic Club	67-69 FEDERAL ST, NORTH HOBART	Permanently Registered		106727	2	310m	North
2863	Conjoined House	5 MARY ST, NORTH HOBART	Permanently Registered		200547	1	315m	South West
2838	House	9 ELPHINSTONE RD, NORTH HOBART	Permanently Registered		90424	2	329m	North West
3370	House	16 MARY ST, NORTH HOBART	Permanently Registered	CPR8918	166737	16	329m	South West
3370	House	14 MARY ST, NORTH HOBART	Permanently Registered	CPR8918	166737	14	330m	South West
2874	Cottage	25 SMITH ST, NORTH HOBART	Permanently Registered		57671	2	333m	North East
2882	Peacock Centre	11 SWAN ST, NORTH HOBART	Permanently Registered		0	0	336m	West
7009	Fairlie	52 NEWDEGATE ST, WEST HOBART	Permanently Registered		137849	1	337m	West
2888	House	8 THOMAS ST, NORTH HOBART	Permanently Registered		47170	1	338m	North West
6016	House	30 SWAN ST, NORTH HOBART	Permanently Registered		63449	34	339m	West
9951	House	21 WELLINGTON ST, NORTH HOBART	Permanently Registered		110915	1	344m	North East
2803	House	37 CHURCH ST, NORTH HOBART	Permanently Registered		207215	1	349m	South East
2862	House	19 MARY ST, NORTH HOBART	Permanently Registered		233651	1	349m	South West
2883	House	15 SWAN ST, NORTH HOBART	Permanently Registered		63449	27	349m	West
2889	House	10 THOMAS ST, NORTH HOBART	Permanently Registered		23188	1	349m	North West
2916	House	24 YARDLEY ST, NORTH HOBART	Permanently Registered		12492	1	349m	North West
2917	House	26 YARDLEY ST, NORTH HOBART	Permanently Registered		31190	1	349m	North West
2915	House	22 YARDLEY ST, NORTH HOBART	Permanently Registered		50741	1	350m	North West
2892	House	19 WELLINGTON ST, NORTH HOBART	Permanently Registered		60251	2	352m	North East
2790	House	9 AUDLEY ST, NORTH HOBART	Permanently Registered		250795	1	353m	North West
2912	House	12 YARDLEY ST, NORTH HOBART	Permanently Registered		29054	1	358m	North
2911	House	10 YARDLEY ST, NORTH HOBART	Permanently Registered		19893	1	360m	North
2890	House	12 THOMAS ST, NORTH HOBART	Permanently Registered		18142	1	361m	North West
2914	Conjoined Cottages	18 YARDLEY ST, NORTH HOBART	Permanently Registered		162205	18	361m	North West
2914	Conjoined Cottages	20 YARDLEY ST, NORTH HOBART	Permanently Registered		162205	20	361m	North West
2891	House	17 WELLINGTON ST, NORTH HOBART	Permanently Registered		28211	1	362m	North East
2910	House	8 YARDLEY ST, NORTH HOBART	Permanently Registered		30237	1	362m	North
2913	House	16 YARDLEY ST, NORTH HOBART	Permanently Registered		26888	1	362m	North
6023	House	17 SWAN ST, NORTH HOBART	Permanently Registered		63449	30	362m	West
2909	House	6 YARDLEY ST, NORTH HOBART	Permanently Registered		106820	1	363m	North
6257	Conjoined Terrace House	220 CAMPBELL ST, NORTH HOBART	Permanently Registered		58228	220	363m	East
6024	Conjoined House	19 SWAN ST, NORTH HOBART	Permanently Registered		57043	2	365m	West
126	Baptist Church and Hall	284-290 ELIZABETH ST, NORTH HOBART	Permanently Registered		238556	1	366m	South
141	House	432 ELIZABETH ST, NORTH HOBART	Permanently Registered		100876	1	366m	North West
2908	House	4 YARDLEY ST, NORTH HOBART	Permanently Registered		20833	1	366m	North

Map Id	Name	Address	Status	CPR No	Title	Folio	Dist	Dir
6256	Conjoined Terrace House	218 CAMPBELL ST, NORTH HOBART	Permanently Registered		58228	218	366m	East
2214	Terrace House	216 CAMPBELL ST, NORTH HOBART	Permanently Registered		58228	216	370m	East
2805	Trinity Hill School	34 CHURCH ST, NORTH HOBART	Permanently Registered		173355	2	370m	South East
6025	Conjoined House	21 SWAN ST, NORTH HOBART	Permanently Registered		57043	1	370m	West
2791	Lambourne / Troy Cottage	13 AUDLEY ST, NORTH HOBART	Permanently Registered		123917	1	378m	North West
6390	Conjoined Cottage	37 FELTHAM ST, NORTH HOBART	Permanently Registered		56127	2	380m	North
2839	Cottage	45 FEDERAL ST, NORTH HOBART	Permanently Registered		139524	1	381m	North
6389	Conjoined Cottage	35 FELTHAM ST, NORTH HOBART	Permanently Registered		56127	1	385m	North East
126	Baptist Church and Hall	284-290 ELIZABETH ST, NORTH HOBART	Permanently Registered		112241	1	387m	South
126	Baptist Church and Hall	284-290 ELIZABETH ST, NORTH HOBART	Permanently Registered		112241	2	389m	South
2902	House	21 YARDLEY ST, NORTH HOBART	Permanently Registered		14181	1	389m	North West
2903	House	23 YARDLEY ST, NORTH HOBART	Permanently Registered		17284	1	389m	North West
2907	House	31 YARDLEY ST, NORTH HOBART	Permanently Registered		25735	1	389m	North West
2805	Trinity Hill School	34 CHURCH ST, NORTH HOBART	Permanently Registered		158312	1	390m	South East
2905	House	27 YARDLEY ST, NORTH HOBART	Permanently Registered		126267	1	390m	North West
2906	House	29 YARDLEY ST, NORTH HOBART	Permanently Registered		17656	1	390m	North West
2352	Elizabeth Street State School (Elizabeth College)	256-278 ELIZABETH ST, NORTH HOBART	Permanently Registered	CPR9941	0	0	394m	South
2884	House	23 SWAN ST, NORTH HOBART	Permanently Registered		54724	39	394m	West
2805	Trinity Hill School	34 CHURCH ST, HOBART	Permanently Registered		173355	1	398m	South East
5868	Birthplace of writer Isabel Dick	19 AUDLEY ST, NORTH HOBART	Permanently Registered		122063	1	400m	West
2901	House	11 YARDLEY ST, NORTH HOBART	Permanently Registered		18609	8	405m	North
2900	House	9 YARDLEY ST, NORTH HOBART	Permanently Registered		18609	7	408m	North
2899	House	7 YARDLEY ST, NORTH HOBART	Permanently Registered		169779	1	409m	North
2898	House	5 YARDLEY ST, NORTH HOBART	Permanently Registered		18609	6	413m	North
2213	Campbell House	184-186 CAMPBELL ST, HOBART	Permanently Registered		171843	1	420m	East
2895	House	8 WELLINGTON ST, NORTH HOBART	Permanently Registered		200966	1	422m	North East
2326	Prospect House	253 ELIZABETH ST, NORTH HOBART	Permanently Registered		56300	3	423m	South East
2865	Lambeth	55 NEWDEGATE ST, WEST HOBART	Permanently Registered		204062	1	425m	West
2582	House	55 WARWICK ST, HOBART	Permanently Registered		121314	1	426m	South East
6030	Cottage	11 GEORGE ST, NORTH HOBART	Permanently Registered		47820	1	426m	North East
2213	Campbell House	184-186 CAMPBELL ST, HOBART	Permanently Registered		171843	2	430m	East
2584	Church Hill	65 WARWICK ST, HOBART	Permanently Registered		106438	1	431m	South East
2585	House	67 WARWICK ST, HOBART	Permanently Registered		90229	1	433m	South East
2326	Prospect House	251 ELIZABETH ST, NORTH HOBART	Permanently Registered		56300	2	434m	South East
6777	House	65 LOCHNER ST, WEST HOBART	Permanently Registered		231749	9	435m	South West
2352	Elizabeth Street State School (Elizabeth College)	256-278 ELIZABETH ST, NORTH HOBART	Permanently Registered	CPR9941	0	0	436m	South
2583	House	63 WARWICK ST, HOBART	Permanently Registered		25169	1	436m	South East

Map Id	Name	Address	Status	CPR No	Title	Folio	Dist	Dir
2777	House	348 ARGYLE ST, NORTH HOBART	Permanently Registered		18609	5	437m	North
6029	House	9 GEORGE ST, NORTH HOBART	Permanently Registered		126534	1	437m	North East
2586	House	69 WARWICK ST, HOBART	Permanently Registered		69814	1	441m	South East
2213	Campbell House	184-186 CAMPBELL ST, HOBART	Permanently Registered		171843	0	442m	East
2213	Campbell House	184-186 CAMPBELL ST, HOBART	Permanently Registered		171843	3	445m	East
2587	House	71-73 WARWICK ST, HOBART	Permanently Registered		197362	1	446m	South East
2800	Campbell Street School	231 CAMPBELL ST, NORTH HOBART	Permanently Registered		0	0	446m	East
6778	House	67 LOCHNER ST, WEST HOBART	Permanently Registered		104856	1	446m	South West
2588	House	71-73 WARWICK ST, HOBART	Permanently Registered		197362	1	448m	South East
2352	Elizabeth Street State School (Elizabeth College)	256-278 ELIZABETH ST, NORTH HOBART	Permanently Registered	CPR9941	147717	1	453m	South
2352	Elizabeth Street State School (Elizabeth College)	256-278 ELIZABETH ST, NORTH HOBART	Permanently Registered	CPR9941	147715	2	453m	South
2778	Town House	350 ARGYLE ST, NORTH HOBART	Permanently Registered		115123	2	455m	North
2581	Cottage	39 WARWICK ST, HOBART	Permanently Registered		52934	1	456m	East
2799	Glenora	229 CAMPBELL ST, NORTH HOBART	Permanently Registered		104876	4	462m	East
2206	Cottage	221 CAMPBELL ST, NORTH HOBART	Permanently Registered		14583	1	463m	East
2325	Warwick House / Melbourne Lodge (including walls)	249 ELIZABETH ST, NORTH HOBART	Permanently Registered		137898	1	465m	South East
3390	Devonshire House	308 MURRAY ST, NORTH HOBART	Permanently Registered		64557	2	466m	South
2352	Elizabeth Street State School (Elizabeth College)	256-278 ELIZABETH ST, NORTH HOBART	Permanently Registered	CPR9941	0	0	468m	South
6753	House	25 WARWICK ST, HOBART	Permanently Registered		128470	2	468m	East
6755	Conjoined House	29 WARWICK ST, HOBART	Permanently Registered		58583	1	468m	East
6754	Conjoined House	27 WARWICK ST, HOBART	Permanently Registered		58583	2	469m	East
6571	House	14A CHURCH ST, HOBART	Permanently Registered		59864	1	473m	South East
2593	Mildura	52-54 WARWICK ST, HOBART	Permanently Registered		63690	1	475m	South East
2590	Condill House	46 WARWICK ST, HOBART	Permanently Registered		215250	1	477m	South East
2594	Milrose	52-54 WARWICK ST, HOBART	Permanently Registered		63690	1	477m	South East
2856	Conjoined Cottage	9 LETITIA ST, NORTH HOBART	Permanently Registered		54711	3	483m	North East
2857	Conjoined Cottage	11 LETITIA ST, NORTH HOBART	Permanently Registered		54711	2	483m	North East
6391	Conjoined House	7 LETITIA ST, NORTH HOBART	Permanently Registered		54711	4	483m	North East
6392	Conjoined House	13 LETITIA ST, NORTH HOBART	Permanently Registered		54711	1	483m	North East
2228	Cottage	14 CHURCH ST, HOBART	Permanently Registered		59864	2	486m	South East
2597	Conjoined Houses	FLAT 1 62 WARWICK ST, HOBART	Permanently Registered		156822	1	487m	South East
2597	Conjoined Houses	FLAT 2 62 WARWICK ST, HOBART	Permanently Registered		156822	2	487m	South East
2597	Conjoined Houses	FLAT 5 62 WARWICK ST, HOBART	Permanently Registered		156822	5	487m	South East
2597	Conjoined Houses	FLAT 4 62 WARWICK ST, HOBART	Permanently Registered		156822	4	488m	South East
2592	Holy Trinity Church	50 WARWICK ST, HOBART	Permanently Registered		203937	1	489m	South East
2591	Blendon House	48 WARWICK ST, HOBART	Permanently Registered		72324	2	491m	South East

Map Id	Name	Address	Status	CPR No	Title	Folio	Dist	Dir
2597	Conjoined Houses	FLAT 7 62 WARWICK ST, HOBART	Permanently Registered		156822	7	494m	South East
142	House	444 ELIZABETH ST, NORTH HOBART	Permanently Registered		26235	1	496m	North West
2597	Conjoined Houses	FLAT 3 62 WARWICK ST, HOBART	Permanently Registered		156822	3	496m	South East
6784	House	60 LOCHNER ST, WEST HOBART	Permanently Registered		231963	1	496m	South West
2597	Conjoined Houses	FLAT 6 62 WARWICK ST, HOBART	Permanently Registered		156822	6	497m	South East
2227	Hillbro	10-12 CHURCH ST, HOBART	Permanently Registered		139749	1	498m	South East
2779	Conjoined House	354 ARGYLE ST, NORTH HOBART	Permanently Registered		58708	1	498m	North
2205	House	207 CAMPBELL ST, NORTH HOBART	Permanently Registered		57238	1	500m	East

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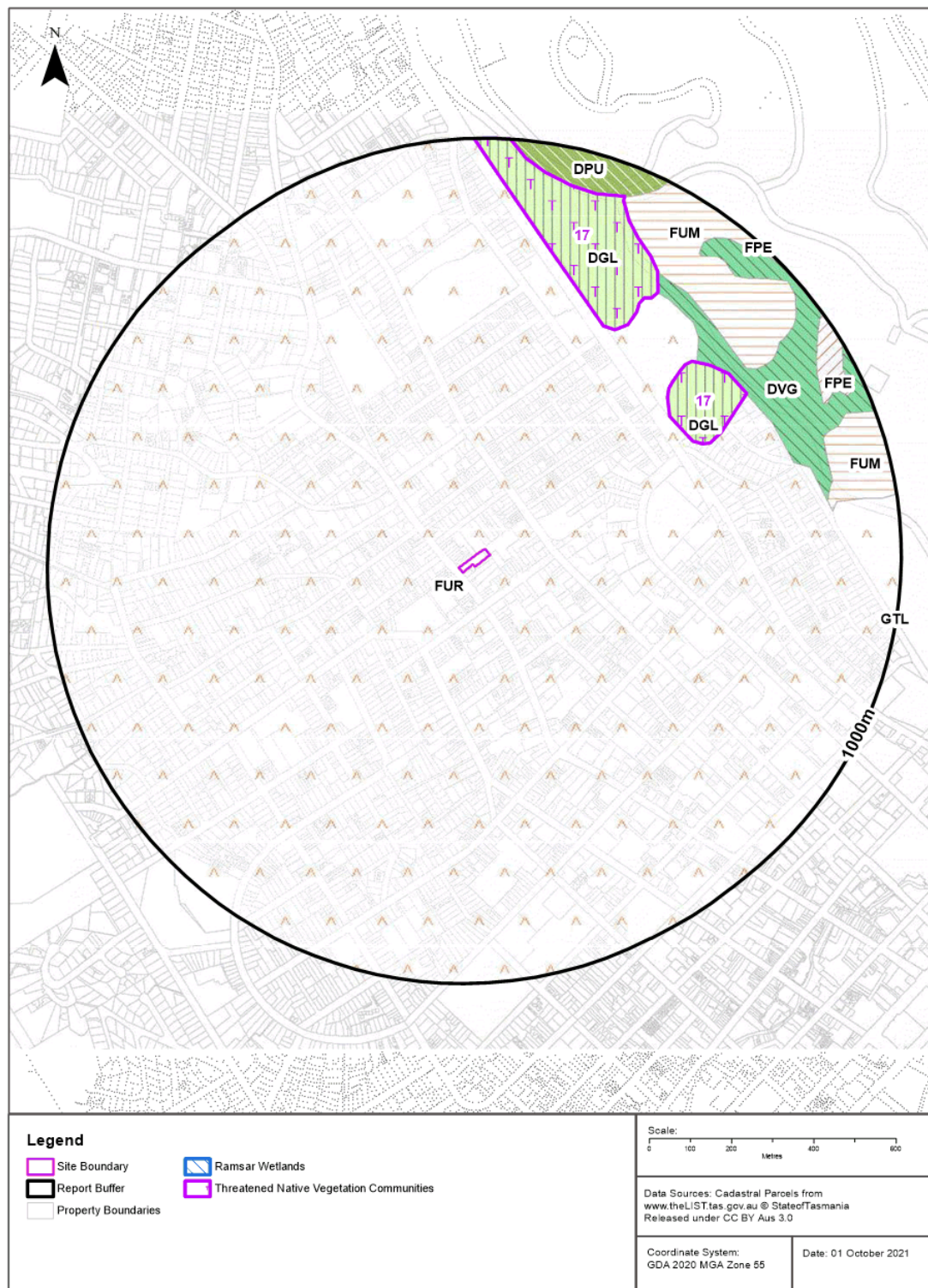
Aboriginal Land

Aboriginal land from the LIST Authority Land dataset within the dataset buffer:

Map Id	Instrument Type	Instrument No	Gazettal Date	Volume	Folio	Distance	Direction
N/A	No records in buffer						

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321-323a Elizabeth Street, North Hobart, TAS 7000



Ecological Constraints

321-323a Elizabeth Street, North Hobart, TAS 7000

TASVEG

TASVEG vegetation units within the dataset buffer:

Vegetation Code	Vegetation Group	Description	Distance to Nearest Feature
FUR	Modified land	Urban areas	On-site
DGL	Dry eucalypt forest and woodland	Eucalyptus globulus dry forest and woodland	551m
DVG	Dry eucalypt forest and woodland	Eucalyptus viminalis grassy forest and woodland	688m
FUM	Modified land	Extra-urban miscellaneous	772m
FPE	Modified land	Permanent easements	891m
DPU	Dry eucalypt forest and woodland	Eucalyptus pulchella forest and woodland	906m
GTL	Native grassland	Lowland Themeda triandra grassland	993m

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Threatened Native Vegetation Communities

Threatened native vegetation communities within the dataset buffer:

Schedule Id	Schedule Name	Distance to Nearest Feature
17	Eucalyptus globulus dry forest and woodland	551m

Threatened Native Vegetation Communities 2014 from www.theLIST.tas.gov.au ©State of Tasmania
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Ramsar Wetlands

Ramsar Wetlands within the dataset buffer:

Map Id	Ramsar Name	Wetland Name	Designation Date	Source	Distance	Direction
N/A	No records in buffer					

Ramsar Wetlands Data Source: © Commonwealth of Australia - Department of Environment

Ecological Constraints

321-323a Elizabeth Street, North Hobart, TAS 7000

Groundwater Dependent Ecosystems Atlas

GDEs within the dataset buffer:

Type	GDE Potential	Geomorphology	Ecosystem Type	Aquifer Geology	Distance to Nearest Feature
N/A	No records within buffer				

Groundwater Dependent Ecosystems Atlas Data Source: The Bureau of Meteorology
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Ecological Constraints

321-323a Elizabeth Street, North Hobart, TAS 7000

Inflow Dependent Ecosystems Likelihood

IDEs within the dataset buffer:

Type	IDE Likelihood	Geomorphology	Ecosystem Type	Aquifer Geology	Distance to Nearest Feature
N/A	No records within buffer				

Inflow Dependent Ecosystems Likelihood Data Source: The Bureau of Meteorology
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Location Confidences

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LC Code	Location Confidence
Premise Match	Georeferenced to the site location / premise or part of site
Area Match	Georeferenced to an approximate or general area
Road Match	Georeferenced to a road or rail corridor
Road Intersection	Georeferenced to a road intersection
Buffered Point	A point feature buffered to x metres
Adjacent Match	Land adjacent to a georeferenced feature
Network of Features	Georeferenced to a network of features
Suburb Match	Georeferenced to a suburb boundary
As Supplied	Spatial data supplied by provider

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 - (i) the Report should not be used or taken to indicate or exclude actual fitness or unfitness of Land or Property for any particular purpose
 - (j) the Report should not be relied upon for determining saleability or value or making any other decisions in relation to the Property and in particular should not be taken to be a rating or assessment of the desirability or market value of the property or its features; and
 - (k) the End User should undertake its own inspections of the Land or Property to satisfy itself that there are no defects or failures
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12. These Terms are subject to New South Wales law.



Natural Values Atlas Report

Appendix C

pitt&sherry

Natural Values Atlas Report

Authoritative, comprehensive information on Tasmania's natural values.

Reference: 321-321A Elizabeth St ESA

Requested For: HCC

Report Type: Summary Report

Timestamp: 08:42:19 AM Wednesday 29 September 2021

Threatened Flora: buffers Min: 0m Max: 500m

Threatened Fauna: buffers Min: 0m Max: 500m

Raptors: buffers Min: 0m Max: 500m

Tasmanian Weed Management Act Weeds: buffers Min: 0m Max: 500m

Priority Weeds: buffers Min: 0m Max: 500m

Geoconservation: buffer 500m

Acid Sulfate Soils: buffer 500m

TASVEG: buffer 500m

Threatened Communities: buffer 500m

Fire History: buffer 500m

Tasmanian Reserve Estate: buffer 500m

Biosecurity Risks: buffer 500m



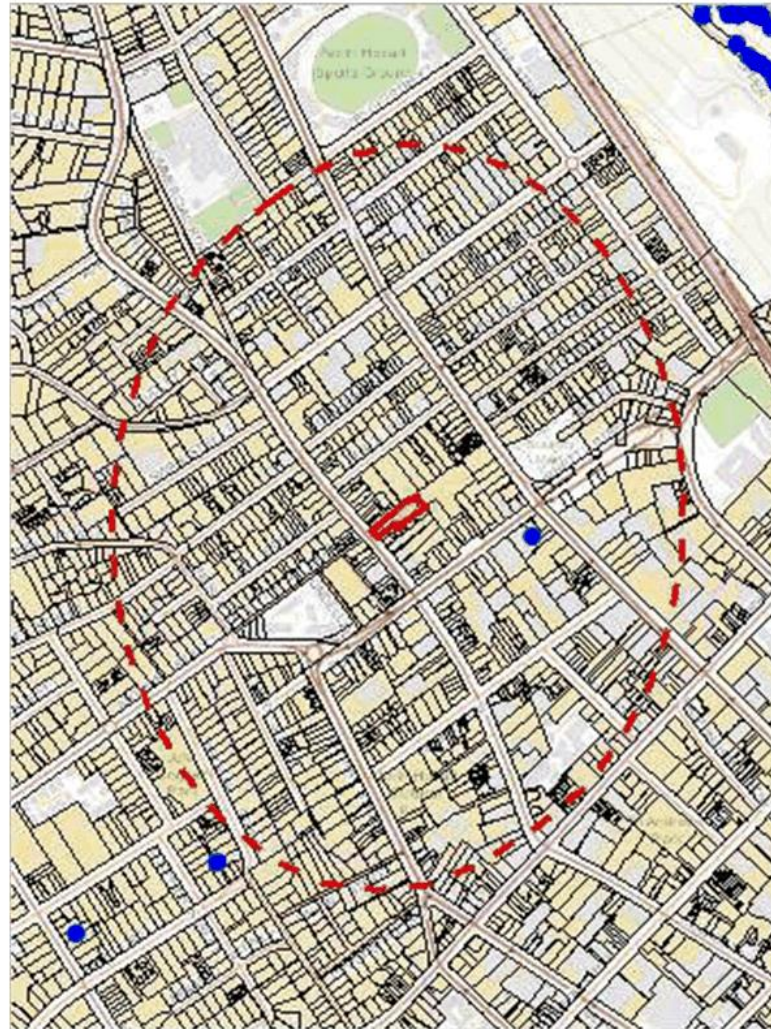
The centroid for this query GDA94: 525873.0, 5253171.0 falls within:

Property: 5662281

*** No threatened flora found within 0 metres ***

Threatened flora within 500 metres

526426, 5253900



525317, 5252440

Please note that some layers may not display at all requested map scales

Threatened flora within 500 metres

Legend: Verified and Unverified observations

- Point Verified
- Point Unverified
- Line Verified
- Line Unverified
- Polygon Verified
- Polygon Unverified

Legend: Cadastral Parcels



Threatened flora within 500 metres

Verified Records

Species	Common Name	SS	NS	Bio	Observation Count	Last Recorded
<i>Scleranthus fasciculatus</i>	spreading knawel	v		n	1	03-Sep-2016

Unverified Records

No unverified records were found!

For more information about threatened species, please contact Threatened Species Enquiries.

Telephone: 1300 368 550

Email: ThreatenedSpeciesEnquiries@dpipwe.tas.gov.au

Address: GPO Box 44, Hobart, Tasmania, Australia, 7000

Threatened fauna within 0 metres

526057, 5253399



525685, 5252941

Please note that some layers may not display at all requested map scales

Threatened fauna within 0 metres

Legend: Verified and Unverified observations

- Point Verified

●

Point Unverified

■

Line Verified
- Line Unverified

■

Polygon Verified

■

Polygon Unverified

Legend: Cadastral Parcels



Threatened fauna within 0 metres

Threatened fauna within 0 metres

(based on Range Boundaries)

Species	Common Name	SS	NS	BO	Potential	Known	Core
<i>Lathamus discolor</i>	swift parrot	e	CR	mbe	1	0	1
<i>Dasyurus maculatus</i> subsp. <i>maculatus</i>	spotted-tail quoll	r	VU	n	1	0	0
<i>Litoria raniformis</i>	green and gold frog	v	VU	n	1	0	1
<i>Discocharopa vicens</i>	Ammonite Pinwheel Snail	e	CR		1	0	0
<i>Prototroctes maraena</i>	australian grayling	v	VU	ae	1	0	0
<i>Antipodia chaostola</i>	chaostola skipper	e	EN	ae	1	0	1
<i>Pseudemoia pagenstecheri</i>	tussock skink	v		n	1	0	0
<i>Haliaeetus leucogaster</i>	white-bellied sea-eagle	v		n	2	0	0
<i>Tyto novaehollandiae</i> subsp. <i>castanops</i>	masked owl (Tasmanian)	e	VU	e	1	0	1
<i>Pardalotus quadragintus</i>	forty-spotted pardalote	e	EN	e	1	0	0
<i>Sarcophilus harrisii</i>	tasmanian devil	e	EN	e	1	0	0
<i>Accipiter novaehollandiae</i>	grey goshawk	e		n	1	0	0
<i>Perameles gunnii</i>	eastern barred bandicoot		VU	n	1	0	1
<i>Aquila audax</i> subsp. <i>fleayi</i>	tasmanian wedge-tailed eagle	e	EN	e	1	0	0
<i>Dasyurus viverrinus</i>	eastern quoll		EN	n	0	0	1

For more information about threatened species, please contact Threatened Species Enquiries.

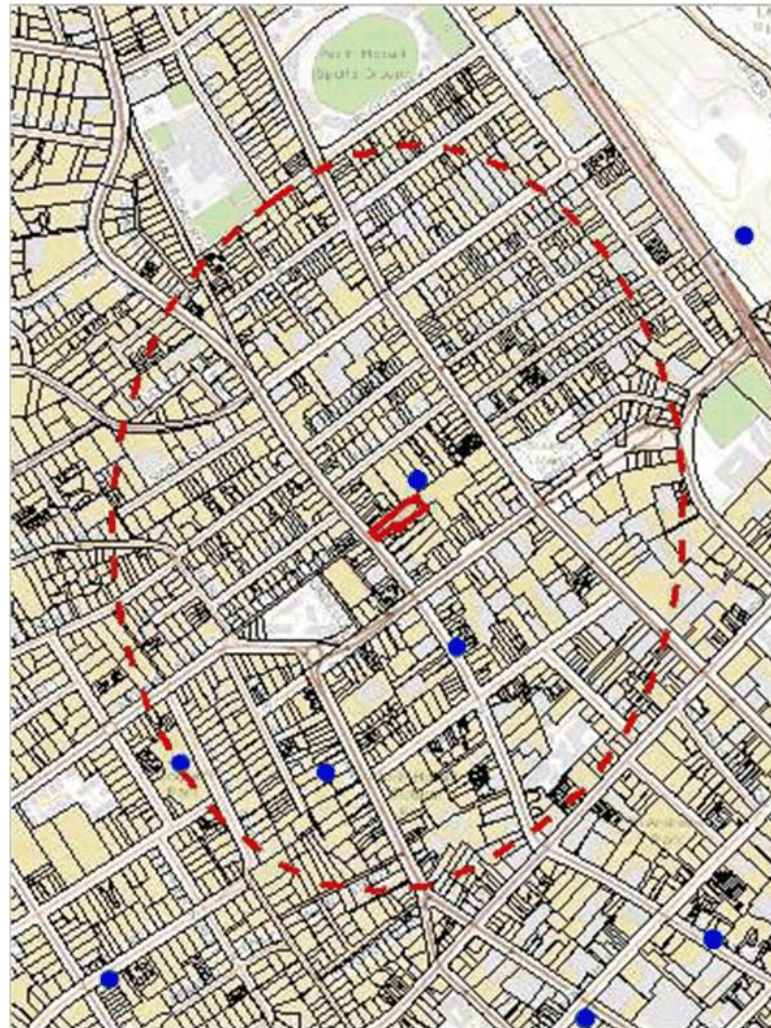
Telephone: 1300 368 550

Email: ThreatenedSpeciesEnquiries@dpipwe.tas.gov.au

Address: GPO Box 44, Hobart, Tasmania, Australia, 7000

Threatened fauna within 500 metres

526426, 5253900



525317, 5252440

Please note that some layers may not display at all requested map scales

Threatened fauna within 500 metres

Legend: Verified and Unverified observations

- Point Verified
- Point Unverified
- Line Verified
- Line Unverified
- Polygon Verified
- Polygon Unverified

Legend: Cadastral Parcels



Threatened fauna within 500 metres

Verified Records

Species	Common Name	SS	NS	Bio	Observation Count	Last Recorded
Accipiter novaehollandiae	grey goshawk	e		n	3	19-Dec-2016
Haliaeetus leucogaster	white-bellied sea-eagle	v		n	1	29-Apr-2017
Lathamus discolor	swift parrot	e	CR	mbe	1	27-Oct-1993

Unverified Records

No unverified records were found!

Threatened fauna within 500 metres
(based on Range Boundaries)

Species	Common Name	SS	NS	BO	Potential	Known	Core
Lathamus discolor	swift parrot	e	CR	mbe	1	0	1
Dasyurus maculatus subsp. maculatus	spotted-tail quoll	r	VU	n	1	0	0
Litoria raniformis	green and gold frog	v	VU	n	1	0	1
Discocharopa vigens	Ammonite Pinwheel Snail	e	CR		1	0	0
Prototroctes maraena	australian grayling	v	VU	ae	1	0	0
Antipodia chaostola	chaostola skipper	e	EN	ae	1	0	1
Pseudemoia pagenstecheri	tussock skink	v		n	1	0	1
Haliaeetus leucogaster	white-bellied sea-eagle	v		n	2	0	0
Tyto novaehollandiae subsp. castanops	masked owl (Tasmanian)	e	VU	e	1	0	1
Accipiter novaehollandiae	grey goshawk	e		n	1	0	1
Pardalotus quadragintus	forty-spotted pardalote	e	EN	e	1	0	0
Sarcophilus harrisii	tasmanian devil	e	EN	e	1	0	0
Perameles gunnii	eastern barred bandicoot		VU	n	1	0	1
Aquila audax subsp. fleayi	tasmanian wedge-tailed eagle	e	EN	e	1	0	0
Dasyurus viverrinus	eastern quoll		EN	n	0	0	1

For more information about threatened species, please contact Threatened Species Enquiries.

Telephone: 1300 368 550

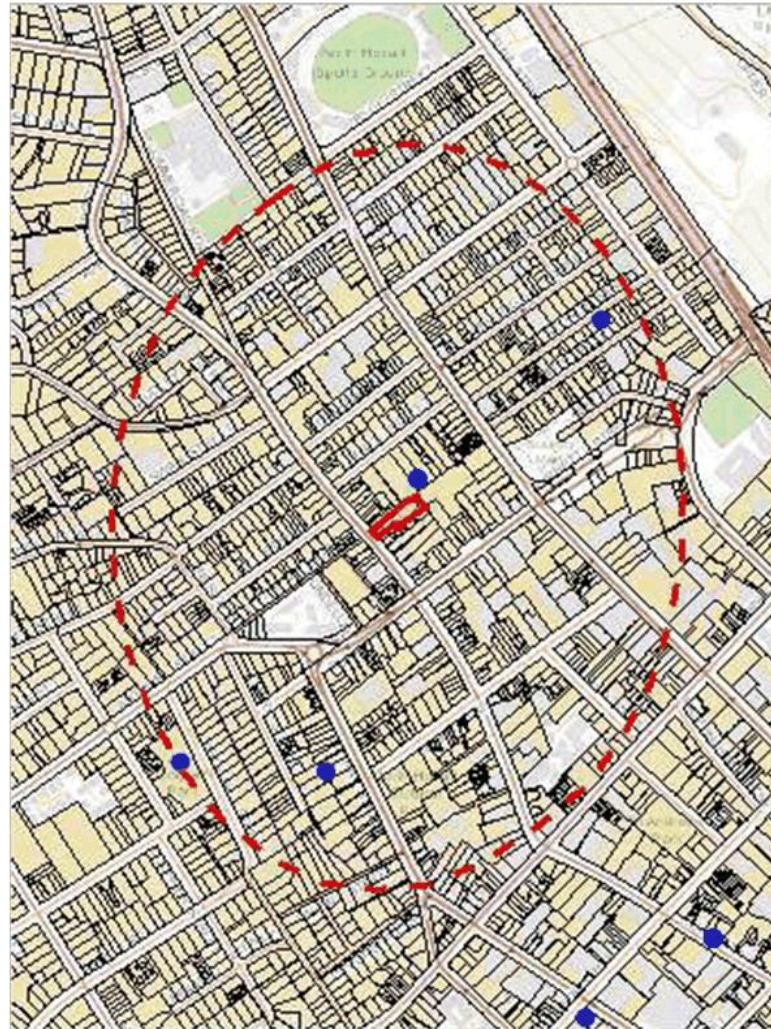
Email: ThreatenedSpecies.Enquiries@dpipwe.tas.gov.au

Address: GPO Box 44, Hobart, Tasmania, Australia, 7000

*** No Raptor nests or sightings found within 0 metres. ***

Raptor nests and sightings within 500 metres

526426, 5253900



525317, 5252440

Please note that some layers may not display at all requested map scales

Raptor nests and sightings within 500 metres

Legend: Verified and Unverified observations

- Point Verified
- Point Unverified
- Line Verified
- Line Unverified
- Polygon Verified
- Polygon Unverified

Legend: Cadastral Parcels



Raptor nests and sightings within 500 metres

Verified Records

Nest Id/Location Foreign Id	Species	Common Name	Obs Type	Observation Count	Last Recorded
	Accipiter novaehollandiae	grey goshawk	Carcass	1	18-Aug-2010
	Accipiter novaehollandiae	grey goshawk	Not Recorded	2	19-Dec-2016
	Falco peregrinus	peregrine falcon	Not Recorded	1	22-Dec-2011
	Haliaeetus leucogaster	white-bellied sea-eagle	Not Recorded	1	29-Apr-2017

Unverified Records

No unverified records were found!

Raptor nests and sightings within 500 metres
(based on Range Boundaries)

Species	Common Name	SS	NS	Potential	Known	Core
Aquila audax subsp. fleayi	tasmanian wedge-tailed eagle	e	EN	1	0	0
Accipiter novaehollandiae	grey goshawk	e		1	0	1
Haliaeetus leucogaster	white-bellied sea-eagle	v		2	0	0

For more information about raptor nests, please contact Threatened Species Enquiries.

Telephone: 1300 368 550

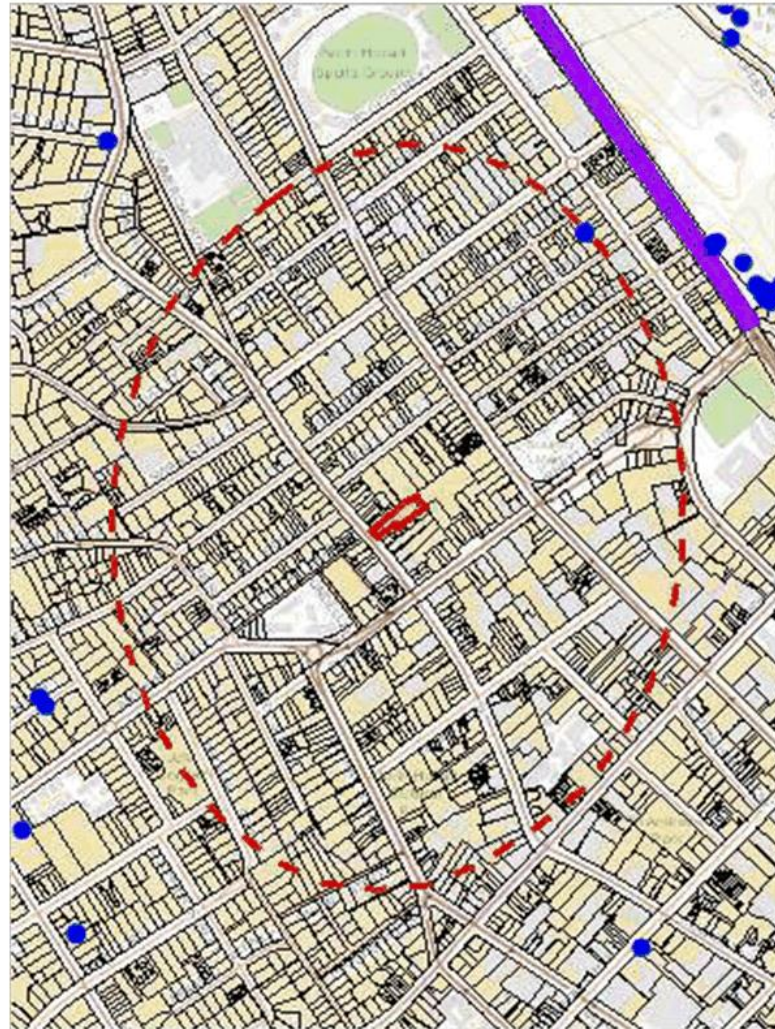
Email: ThreatenedSpecies.Enquiries@dpipwe.tas.gov.au

Address: GPO Box 44, Hobart, Tasmania, Australia, 7000

*** No Tas Management Act Weeds found within 0 metres ***

Tas Management Act Weeds within 500 m

526426, 5253900



525317, 5252440

Please note that some layers may not display at all requested map scales

Tas Management Act Weeds within 500 m

Legend: Verified and Unverified observations

- Point Verified

●

Point Unverified

▬

Line Verified

▬

Line Unverified

▭

Polygon Verified

▭

Polygon Unverified

Legend: Cadastral Parcels



Tas Management Act Weeds within 500 m

Verified Records

Species	Common Name	Observation Count	Last Recorded
<i>Carduus pycnocephalus</i>	slender thistle	1	01-Nov-1924
<i>Cirsium arvense</i>	californian thistle	1	01-Jan-1923
<i>Marrubium vulgare</i>	white horehound	4	01-Apr-1926
<i>Ulex europaeus</i>	gorse	1	01-Oct-1924
<i>Urospermum dalechampii</i>	false dandelion	1	01-Dec-1923

Unverified Records

For more information about introduced weed species, please visit the following URL for contact details in your area:

<https://www.dpipwe.tas.gov.au/invasive-species/weeds>

*** No Priority Weeds found within 0 metres ***

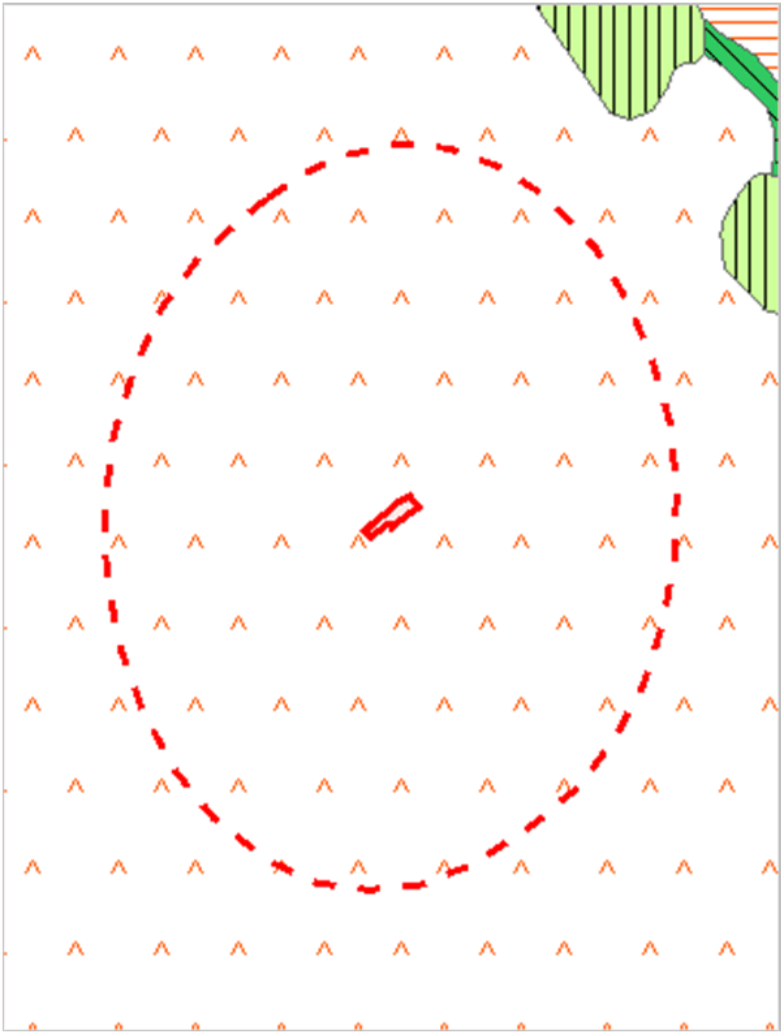
*** No Priority Weeds found within 500 metres ***

*** No Geoconservation sites found within 500 metres. ***

*** No Acid Sulfate Soils found within 500 metres ***

TASVEG 4.0 Communities within 500 metres

526426, 5253900













525317, 5252440

Please note that some layers may not display at all requested map scales

TASVEG 4.0 Communities within 500 metres

Legend: TASVEG 4.0

-  (AAP) Alkaline pans
-  (AHF) Freshwater aquatic herbland
-  (AHL) Lacustrine herbland
-  (AHS) Saline aquatic herbland
-  (ARS) Saline sedgeland / rushland
-  (ASF) Fresh water aquatic sedgeland and rushland
-  (ASP) Sphagnum peatland
-  (ASS) Succulent saline herbland
-  (AUS) Saltmarsh (undifferentiated)
-  (AWU) Wetland (undifferentiated)
-  (DAC) Eucalyptus amygdalina coastal forest and woodland
-  (DAD) Eucalyptus amygdalina forest and woodland on dolerite
-  (DAM) Eucalyptus amygdalina forest on mudstone
-  (DAS) Eucalyptus amygdalina forest and woodland on sandstone
-  (DAZ) Eucalyptus amygdalina inland forest and woodland on Cainozoic deposits
-  (DBA) Eucalyptus barberi forest and woodland
-  (DCO) Eucalyptus coccifera forest and woodland
-  (DCR) Eucalyptus cordata forest
-  (DDE) Eucalyptus delegatensis dry forest and woodland
-  (DDP) Eucalyptus dalrympleana - Eucalyptus pauciflora forest and woodland
-  (DGL) Eucalyptus globulus dry forest and woodland
-  (DGW) Eucalyptus gunnii woodland
-  (DKW) King Island Eucalypt woodland
-  (DMO) Eucalyptus morrisbyi forest and woodland
-  (DMW) Midlands woodland complex
-  (DNF) Eucalyptus nitida Furneaux forest
-  (DNI) Eucalyptus nitida dry forest and woodland
-  (DOB) Eucalyptus obliqua dry forest
-  (DOV) Eucalyptus ovata forest and woodland
-  (DOW) Eucalyptus ovata heathy woodland
-  (DPD) Eucalyptus pauciflora forest and woodland on dolerite
-  (DPE) Eucalyptus perriniana forest and woodland
-  (DPO) Eucalyptus pauciflora forest and woodland not on dolerite
-  (DPU) Eucalyptus pulchella forest and woodland
-  (DRI) Eucalyptus risdonii forest and woodland
-  (DRO) Eucalyptus rodwayi forest and woodland
-  (DSC) Eucalyptus amygdalina - Eucalyptus obliqua damp sclerophyll forest
-  (DSG) Eucalyptus sieberi forest and woodland on granite
-  (DSO) Eucalyptus sieberi forest and woodland not on granite
-  (DTD) Eucalyptus tenuiramis forest and woodland on dolerite
-  (DTG) Eucalyptus tenuiramis forest and woodland on granite
-  (DTO) Eucalyptus tenuiramis forest and woodland on sediments
-  (DVC) Eucalyptus viminalis - Eucalyptus globulus coastal forest and woodland
-  (DVF) Eucalyptus viminalis Furneaux forest and woodland
-  (DVG) Eucalyptus viminalis grassy forest and woodland
-  (FAC) Improved pasture with native tree canopy
-  (FAG) Agricultural land
-  (FMG) Marram grassland
-  (FPE) Permanent easements
-  (FPF) Pteridium esculentum fernland
-  (FPH) Plantations for silviculture - hardwood
-  (FPS) Plantations for silviculture - softwood
-  (FPU) Unverified plantations for silviculture
-  (FRG) Regenerating cleared land
-  (FSM) Spartina marshland
-  (FUM) Extra-urban miscellaneous
-  (FUR) Urban areas
-  (FWU) Weed infestation
-  (GCL) Lowland grassland complex

Department of Primary Industries, Parks, Water and Environment

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TASVEG 4.0 Communities within 500 metres






































	(GHC) Coastal grass and herbfield
	(GPH) Highland Poa grassland
	(GPL) Lowland Poa labillardierei grassland
	(GRP) Rockplate grassland
	(GSL) Lowland grassy sedgeland
	(GTL) Lowland Themeda triandra grassland
	(HCH) Alpine coniferous heathland
	(HCM) Cushion moorland
	(HHE) Eastern alpine heathland
	(HHW) Western alpine heathland
	(HSE) Eastern alpine sedgeland
	(HSW) Western alpine sedgeland/herbland
	(HUE) Eastern alpine vegetation (undifferentiated)
	(MBE) Eastern buttongrass moorland
	(MBP) Pure buttongrass moorland
	(MBR) Sparse buttongrass moorland on slopes
	(MBS) Buttongrass moorland with emergent shrubs
	(MBU) Buttongrass moorland (undifferentiated)
	(MBW) Western buttongrass moorland
	(MDS) Subalpine Diplarrena latifolia rushland
	(MGH) Highland grassy sedgeland
	(MRR) Restionaceae rushland
	(MSW) Western lowland sedgeland
	(NAD) Acacia dealbata forest
	(NAF) Acacia melanoxylon swamp forest
	(NAL) Allocasuarina littoralis forest
	(NAR) Acacia melanoxylon forest on rises
	(NAV) Allocasuarina verticillata forest
	(NBA) Bursaria - Acacia woodland
	(NBS) Banksia serrata woodland
	(NCR) Callitris rhomboidea forest
	(NLA) Leptospermum scoparium - Acacia mucronata forest
	(NLE) Leptospermum forest
	(NLM) Leptospermum lanigerum - Melaleuca squarrosa swamp forest
	(NLN) Subalpine Leptospermum nitidum woodland
	(NME) Melaleuca ericifolia swamp forest
	(OAQ) Water, sea
	(ORO) Lichen lithosere
	(OSM) Sand, mud
	(RCO) Coastal rainforest
	(RFE) Rainforest fernland
	(RFS) Nothofagus gunnii rainforest scrub
	(RHP) Lagarostrobos franklinii rainforest and scrub
	(RKF) Athrotaxis selaginoides - Nothofagus gunnii short rainforest
	(RKP) Athrotaxis selaginoides rainforest
	(RKS) Athrotaxis selaginoides subalpine scrub
	(RKX) Highland rainforest scrub with dead Athrotaxis selaginoides
	(RML) Nothofagus - Leptospermum short rainforest
	(RMS) Nothofagus - Phyllocladus short rainforest
	(RMT) Nothofagus - Atherosperma rainforest
	(RMU) Nothofagus rainforest (undifferentiated)
	(RPF) Athrotaxis cupressoides - Nothofagus gunnii short rainforest
	(RPP) Athrotaxis cupressoides rainforest
	(RPW) Athrotaxis cupressoides open woodland
	(RSH) Highland low rainforest and scrub
	(SAL) Acacia longifolia coastal scrub
	(SBM) Banksia marginata wet scrub
	(SBR) Broad-leaf scrub
	(SCA) Coastal scrub on alkaline sands
	(SCH) Coastal heathland
	(SCL) Heathland on calcareous substrates

Department of Primary Industries, Parks, Water and Environment

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TASVEG 4.0 Communities within 500 metres

-  (SED) Eastern scrub on dolerite
-  (SHS) Subalpine heathland
-  (SHW) Wet heathland
-  (SKA) Kunzea ambigua regrowth scrub
-  (SLG) Leptospermum glaucescens heathland and scrub
-  (SLL) Leptospermum lanigerum scrub
-  (SLS) Leptospermum scoparium heathland and scrub
-  (SMM) Melaleuca squamea heathland
-  (SMP) Melaleuca pustulata scrub
-  (SMR) Melaleuca squarrosa scrub
-  (SRE) Eastern riparian scrub
-  (SRF) Leptospermum with rainforest scrub
-  (SRH) Rookery halophytic herbland
-  (SSC) Coastal scrub
-  (SSK) Scrub complex on King Island
-  (SSW) Western subalpine scrub
-  (SSZ) Spray zone coastal complex
-  (SWR) Western regrowth complex
-  (SWW) Western wet scrub
-  (WBR) Eucalyptus brookeriana wet forest
-  (WDA) Eucalyptus dalrympleana forest
-  (WDB) Eucalyptus delegatensis forest with broad-leaf shrubs
-  (WDL) Eucalyptus delegatensis forest over Leptospermum
-  (WDR) Eucalyptus delegatensis forest over rainforest
-  (WDU) Eucalyptus delegatensis wet forest (undifferentiated)
-  (WGL) Eucalyptus globulus King Island forest
-  (WGL) Eucalyptus globulus wet forest
-  (WNL) Eucalyptus nitida forest over Leptospermum
-  (WNR) Eucalyptus nitida forest over rainforest
-  (WNU) Eucalyptus nitida wet forest (undifferentiated)
-  (WOB) Eucalyptus obliqua forest with broad-leaf shrubs
-  (WOL) Eucalyptus obliqua forest over Leptospermum
-  (WOR) Eucalyptus obliqua forest over rainforest
-  (WOU) Eucalyptus obliqua wet forest (undifferentiated)
-  (WRE) Eucalyptus regnans forest
-  (WSU) Eucalyptus subcrenulata forest and woodland
-  (WVI) Eucalyptus viminalis wet forest

Legend: Cadastral Parcels



TASVEG 4.0 Communities within 500 metres

Code	Community	Canopy Tree
FUR	(FUR) Urban areas	

For more information contact: Coordinator, Tasmanian Vegetation Monitoring and Mapping Program.
Telephone: (03) 6165 4320
Email: TVMMPsupport@dipwe.tas.gov.au
Address: GPO Box 44, Hobart, Tasmania, Australia, 7000

*** No threatened Communities (TNVC 2020) found within 500 metres ***

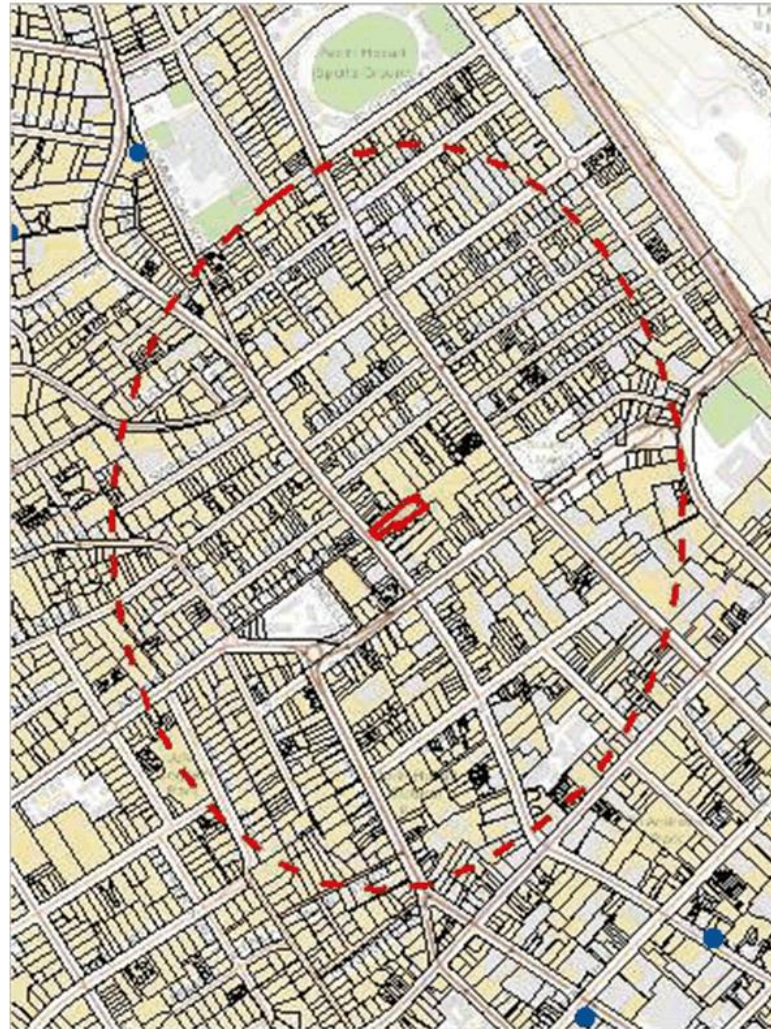
*** No Fire History (All) found within 500 metres ***

*** No Fire History (Last Burnt) found within 500 metres ***

*** No reserves found within 500 metres ***

Known biosecurity risks within 500 meters

526426, 5253900



525317, 5252440

Please note that some layers may not display at all requested map scales

Known biosecurity risks within 500 meters

Legend: Biosecurity Risk Species

- Point Verified

■ Line Unverified
- Point Unverified

■ Polygon Verified
- Line Verified

■ Polygon Unverified

Legend: Hygiene infrastructure

- Location Point Verified

● Location Point Unverified
- Location Line Verified

■ Location Line Unverified
- Location Polygon Verified

■ Location Polygon Unverified

Legend: Cadastral Parcels



Known biosecurity risks within 500 meters

Verified Species of biosecurity risk

No verified species of biosecurity risk found within 500 metres

Unverified Species of biosecurity risk

No unverified species of biosecurity risk found within 500 metres

Generic Biosecurity Guidelines

The level and type of hygiene protocols required will vary depending on the tenure, activity and land use of the area. In all cases adhere to the land manager's biosecurity (hygiene) protocols. As a minimum always Check / Clean / Dry (Disinfect) clothing and equipment before trips and between sites within a trip as needed <https://www.dpipwe.tas.gov.au/invasive-species/weeds/weed-hygiene/keeping-it-clean-a-tasmanian-field-hygiene-manual>

On Reserved land, the more remote, infrequently visited and undisturbed areas require tighter biosecurity measures.

In addition, where susceptible species and communities are known to occur, tighter biosecurity measures are required.

Apply controls relevant to the area / activity:

- Don't access sites infested with pathogen or weed species unless absolutely necessary. If it is necessary to visit, adopt high level hygiene protocols.
- Consider not accessing non-infested sites containing known susceptible species / communities. If it is necessary to visit, adopt high level hygiene protocols.
- Don't undertake activities that might spread pest / pathogen / weed species such as deliberately moving soil or water between areas.
- Modify / restrict activities to reduce the chance of spreading pest / pathogen / weed species e.g. avoid periods when weeds are seeding, avoid clothing/equipment that excessively collects soil and plant material e.g. Velcro, excessive tread on boots.
- Plan routes to visit clean (uninfested) sites prior to dirty (infested) sites. Do not travel through infested areas when moving between sites.
- Minimise the movement of soil, water, plant material and hitchhiking wildlife between areas by using the Check / Clean / Dry (Disinfect when drying is not possible) procedure for all clothing, footwear, equipment, hand tools and vehicles <https://www.dpipwe.tas.gov.au/invasive-species/weeds/weed-hygiene>
- Neoprene and netting can take 48 hours to dry, use non-porous gear wherever possible.
- Use walking track boot wash stations where available.
- Keep a hygiene kit in the vehicle that includes a scrubbing brush, boot pick, and disinfectant <https://www.dpipwe.tas.gov.au/invasive-species/weeds/weed-hygiene/keeping-it-clean-a-tasmanian-field-hygiene-manual>
- Dispose of all freshwater away from natural water bodies e.g. do not empty water into streams or ponds.
- Dispose of used disinfectant ideally in town through a treatment or septic system. Always keep disinfectant well away from natural water systems.
- Securely contain any high risk pest / pathogen / weed species that must be collected and moved e.g. biological samples.

Hygiene Infrastructure

No known hygiene infrastructure found within 500 metres



WorkSafe Correspondence

Appendix D

pitt&sherry

Carly Clark

From: Case, Lorraine <Lorraine.Case@justice.tas.gov.au>
Sent: Thursday, 7 October 2021 1:59 PM
To: Carly Clark
Subject: RE: P.19.0421 - 321-323A Elizabeth Street, North Hobart
Attachments: DG - 285 Elizabeth St North Hobart.pdf

Categories: Transferred to SharePoint
SharePointLocationUrl: <https://pittsherry.sharepoint.com/sites/HB19500/ProjectEmails>
SharePointAbsoluteFileUrl: [https://pittsherry.sharepoint.com/sites/HB19500/ProjectEmails/RE_P_19_0421 - 321-323A Elizabeth Street_ North _2ozx2e.eml](https://pittsherry.sharepoint.com/sites/HB19500/ProjectEmails/RE_P_19_0421_321-323A_Elizabeth_Street_North_2ozx2e.eml)

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Carly

- There is no DG file for 325 Elizabeth Street
- BP North Hobart file was created in 1961
- Mines file G327 – site plan dated 1954 shows a 1000 gal tank; in 1965 it was proposed to install 1 x 2000 and 1 x 3000 gal u/g tanks (distillate and petrol respectively)

See attached records from G327.

Kind regards
Lorraine

Lorraine Case | Support Officer – Prosecution Coordination

WorkSafe Tasmania | Department of Justice

p (03) 6166 4656

e lorraine.case@justice.tas.gov.au

w justice.tas.gov.au | worksafe.tas.gov.au

30 Gordons Hill Road Rosny Park TAS 7018 | PO Box 56, Rosny Park TAS 7018



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From: Carly Clark <CClark@pittsh.com.au>

Sent: Thursday, 7 October 2021 8:40 AM

To: Case, Lorraine <Lorraine.Case@justice.tas.gov.au>

Subject: RE: P.19.0421 - 321-323A Elizabeth Street, North Hobart

Hi Lorraine,

A couple more queries:

- Is there a DG file for 325 Elizabeth Street, North Hobart?
- File ID 2296 – BP North Hobart – when did file start?
- Mines File G327 – is DG storage related to LPG only?

Thanks

Carly

Carly Clark

M: 0490 942 344

From: Case, Lorraine <Lorraine.Case@justice.tas.gov.au>

Sent: Monday, 4 October 2021 11:28 AM

To: Carly Clark <CClark@pittsh.com.au>

Subject: RE: P.19.0421 - 321-323A Elizabeth Street, North Hobart

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Hi Carly

DG site file 0023 – 321 Elizabeth St North Hobart – records date range 1987-1994 – restaurant - property owner T&F Papatriantafillos – currently Culinary King Indian Restaurant

DG site file 3771 – 315 Elizabeth St North Hobart – records date range 1999-2011 – owner Veneziano enterprises Pty Ltd - currently Boodle Beasley bar

Mines file A241 – 16 Lefroy St North Hobart – records date range 1971-1973 – Abel Tasman Transport – owner Ampol Petroleum – now a Hobart City Council car park

Mines file A106 – 338 Elizabeth St (cnr Burnett St) – records date range 1955-2013 – Ampol S/Stn later Windscreens O'Brien, now Room for a Pony café/bar

Mines file G327 – 285 Elizabeth St Hobart – records date range 1954-1972 - Donald Gorrings Pty Ltd formerly Frank Hammond Pty Ltd – currently Saigon District restaurant with multiple residential units upstairs

Kind regards

Lorraine

Lorraine Case | Support Officer – Prosecution Coordination

WorkSafe Tasmania | Department of Justice

p (03) 6166 4656

e lorraine.case@justice.tas.gov.au

w justice.tas.gov.au | worksafe.tas.gov.au

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From: Carly Clark <CClark@pittsh.com.au>
Sent: Friday, 1 October 2021 12:47 PM
To: Case, Lorraine <Lorraine.Case@justice.tas.gov.au>
Subject: RE: P.19.0421 - 321-323A Elizabeth Street, North Hobart

Hi Lorraine,

Are you able to provide some additional information:

- The DG file ID for each of the below (where not already provided)
- The file record years (start to end/current)
- Most recent operator/owner
- Name of premises where available (i.e. name of restaurant)

Thanks!
Carly

Carly Clark
M: 0490 942 344

From: Case, Lorraine <Lorraine.Case@justice.tas.gov.au>
Sent: Wednesday, 29 September 2021 1:02 PM
To: Carly Clark <CClark@pittsh.com.au>
Subject: RE: P.19.0421 - 321-323A Elizabeth Street, North Hobart

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Carly

There is a DG site file for 321 Elizabeth St, Hobart (No 0023) – it was the location of a restaurant in 1987 and only LPG was stored on the premises.

There is also a DG file for 315 Elizabeth St – formerly a La Porchetta restaurant now a brewery - LPG only. No mention of Mooney & Bower on our system.

No information for 317 Elizabeth St

Attached is the original site plan for 16 Lefroy St, North Hobart and an extract from the EPA's register – Abel Tasman Transport / Ampol

Mines file A106 for 338 Elizabeth St (cnr Burnett St) holds a stat dec confirming removal of a 2000 litre underground fuel tank on 25 July 2013.

DG site file 2296 is listed as BP North Hobart at 283 Elizabeth St and a stat dec confirms decommissioning of the UPSS in 2011.

Kind regards
Lorraine

Lorraine Case | Support Officer – Prosecution Coordination

WorkSafe Tasmania | Department of Justice

p (03) 6166 4656

e lorraine.case@justice.tas.gov.au

w justice.tas.gov.au | worksafe.tas.gov.au

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From: Carly Clark <CClark@pittsh.com.au>

Sent: Tuesday, 28 September 2021 12:43 PM

To: Case, Lorraine <Lorraine.Case@justice.tas.gov.au>

Subject: P.19.0421 - 321-323A Elizabeth Street, North Hobart

Hi Lorraine,

We are completing a site history for 321-323A Elizabeth Street, North Hobart (the Property) on behalf of Hobart City Council (HCC).

Is there a DG file for the Property?

Are there DG files for any surrounding properties?

According to HCC:

- 317 Elizabeth Street was previously used as a service station and fuel supply, listed under G. Lincoln, 1948
- 315 Elizabeth Street was previously used as a fuel supplier, listed as Mooney & Bower, 1916
- 20 Lefroy Street was previously used as a garage, listed under Abel Tasman Transport, 1971

According to the LISTmap:

- 338 Elizabeth Street and 285 Elizabeth Street (110 m and 180 m south-east of the site respectively) have permanently decommissioned UPSS

Thanks
Carly

pitt&sherry

Carly Clark

Principal Environmental Scientist

CEnvP SC | CEnvP | BSc | MEIANZ | MALGA

Direct +61 3 9674 4163 | Mobile +61 490 942 344 | cclark@pittsh.com.au | [Connect on LinkedIn](#)

Melbourne Office — Level 1, HWT Tower, 40 City Road, Southbank

PO Box 259 South Melbourne Victoria 3205 | Phone +61 3 9682 5290

pittsh.com.au

NOTE: I work Tuesday to Friday

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Search Results (Names Associated With Site)

Site ID: 632

Address: 16 Lefroy St
North Hobart 7000

File Number: A241

Held By: Workplace Standards Tasmania

File From: 1971 **To:** 1971

Location Status: Confirmed

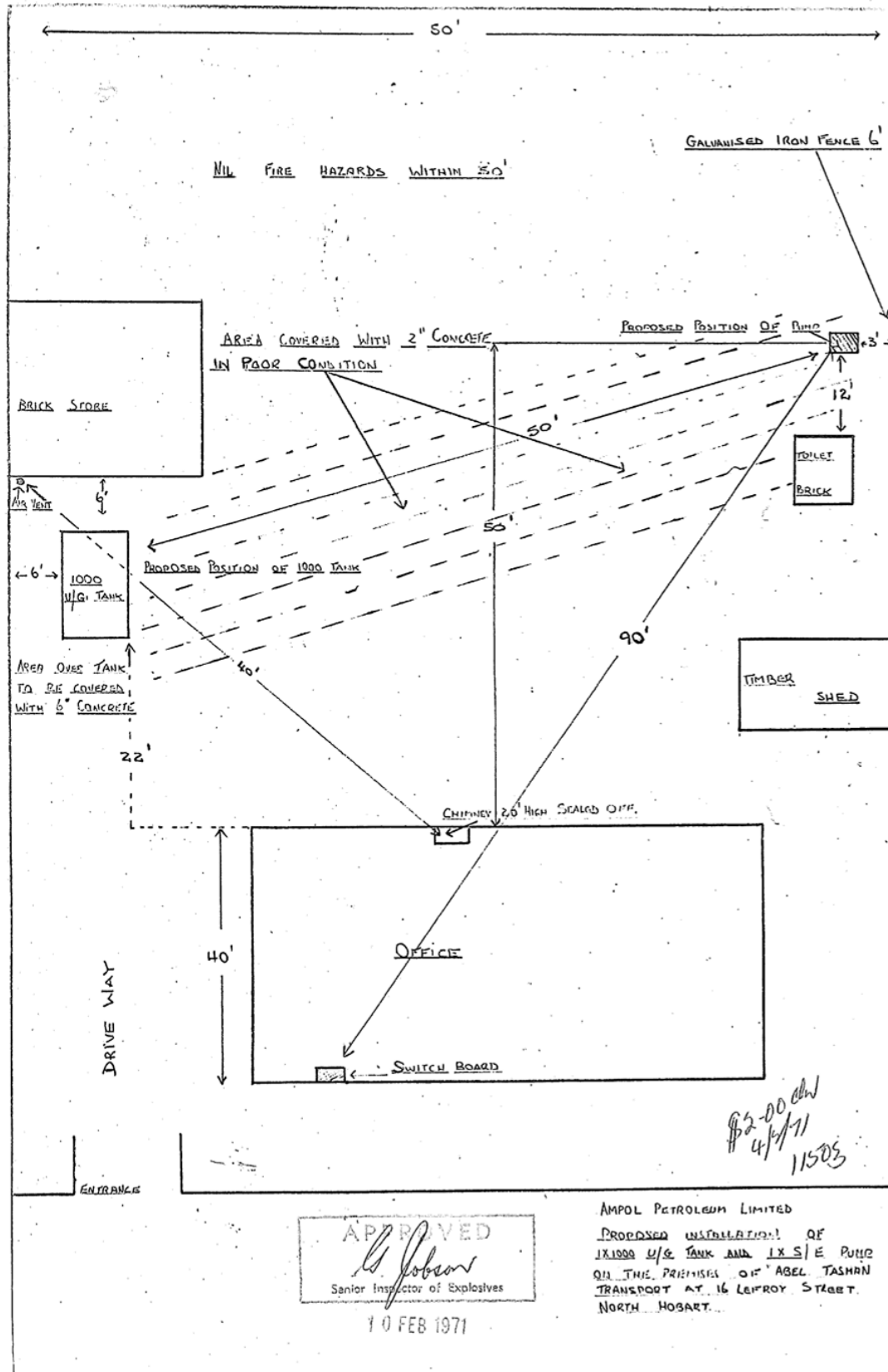
PID: 5666143

Comments: Flag. Tank was removed and site remediated according to the remediation and validation report (199

Names Associated With Site:

Abel Tasman Transport

Ampol



(Regulation 78)

FORM 5
11503
TASMANIA

Inflammable Liquids Act 1929

Nº 1410

Fee, \$2

Granted to Amcol Petroleum Ltd.,
Box 96, Post Office,
NORTH HOBART.

**Approval of Site and Construction of Premises for Keeping Inflammable Liquids
or Dangerous Commodities or the Alteration thereof**

Approval for the ~~*site and construction~~ ~~*alteration of the site and construction~~ as shown on the approved plans and specifications of a ~~*package/storage area/*tank~~ for the undermentioned inflammable liquids and dangerous commodities, subject to the provisions of the *Inflammable Liquids Act 1929*, and regulations being observed and subject to the undermentioned special con-

ditions, situate at Abel Tasman Transport, 16 Leifroy St.
North Hobart.

This approval is valid only for one year from the date of issue.

Date of issue 10th February 19 71.

Chief Inspector of Explosives

J. J. L. L.
Inspector of Explosives

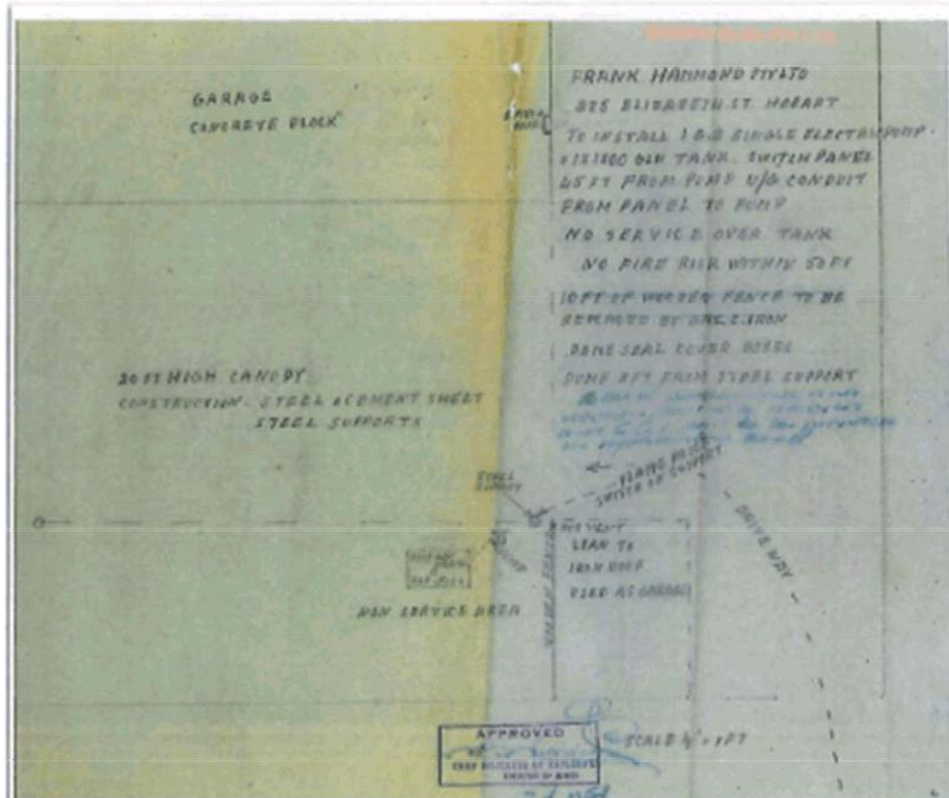
Inflammable liquid: Class A Gallons
Class B Gallons

Dangerous commodities:

SPECIAL CONDITIONS

Install 1 x 1000 gl. U/G tank and 1 S/B pump

* Strike out if inapplicable



(Regulation 78)

FORM 5
TASMANIA
30962
Inflammable Liquids Act 1929

No 2123

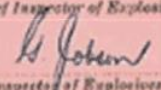
Fee, £1

Granted to Caltex Oil (Aust.) Pty. Ltd.,
63 Salamanca Place,
HOBART.

Approval of Site and Construction of Premises for Keeping Inflammable Liquids or Dangerous Commodities or the Alteration thereof.

Approval for the ~~*site and construction*~~ alteration of the site and construction as shown on the approved plans and specifications of a ~~*package storage area/*~~ tank for the undermentioned inflammable liquids and dangerous commodities, subject to the provisions of the *Inflammable Liquids Act 1929*, and regulations being observed and subject to the undermentioned special conditions, situate at Frank Hammond Pty. Ltd., HOBART.

This approval is valid only for one year from the date of issue.
Date of issue 6th December, 1965.

Chief Inspector of Explosives

Inspector of Explosives

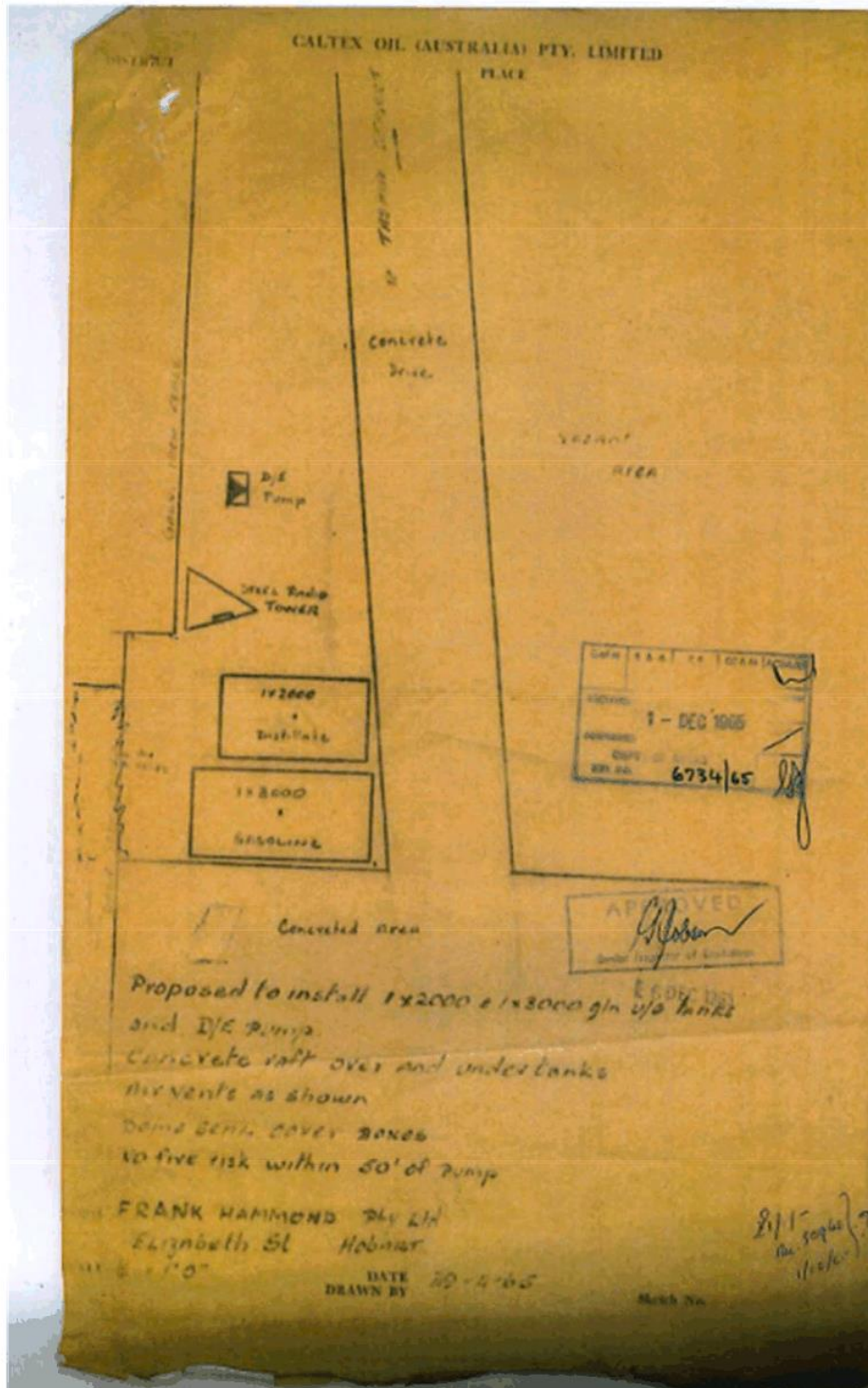
Inflammable liquid: Class A 3000 Gallons
Class B - Gallons

Dangerous commodities:

SPECIAL CONDITIONS

1 x 3000 gallon M/Spirit u/g tank.
1 x 2000 gallon Distillate tank.

* Strike out if inapplicable



FORM 6

Inflammable Liquids Act 1929

**APPLICATION FOR LICENCE IN RESPECT OF PREMISES FOR
MANUFACTURE OF OR KEEPING INFLAMMABLE
LIQUIDS OR DANGEROUS COMMODITIES**

1. Applicant's Full Name FRANK HAMMOND PTY. LTD.

2. Applicant's Occupation Transport & Parcel

3. Applicant's Postal Address Base 100 A 4500 Hobart

4. Situation of Premises to be Licensed 283 Elizabeth St Hobart

5. Name of Municipality and Town or Township within which, or within five miles of which, the Premises is situated Hobart

6. Name and quantity to be manufactured under this Application:—
 Inflammable Liquid Class A Petrol 3000 galls
 (Petrol, &c.) Distillate 2000 galls
 Inflammable Liquid Class B
 (Kerosene, &c.)
 Dangerous Commodity

7. Number of Tanks and Package Storage Areas under this Application 2

8. Name and Total Quantity to be kept:—
 Inflammable Liquid Class A
 (Petrol, &c.)
 Inflammable Liquid Class B
 (Kerosene, &c.)
 Dangerous Commodity

9. Total Number of Tanks and Package Storage Areas installed 4

I declare that the above statements and answers are true to the best of my knowledge and belief.

FRANK HAMMOND PTY. LTD.
 (Signed) [Signature]

Dated this 24th day of January, 1965

(This Application, with Licence Fee of £ 4/10/-, to be forwarded to—
 Director of Mines, Hobart)

(Scale of feet to show on reverse hereof)

1/2 Yearly

28976
 64-10-0
 2/2/65
 H/164
 11791
 100

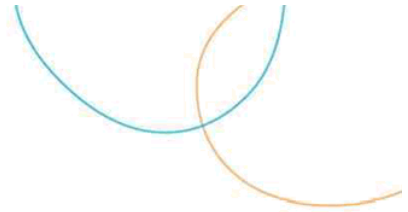


Site Investigation Checklist

Appendix E

pitt&sherry


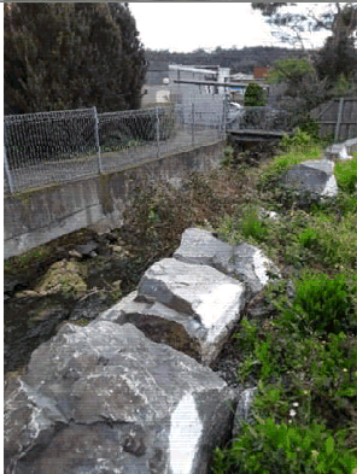

Environmental Site Assessment - Preliminary Site Investigation	
Site inspection checklist	
General site notes:	<div> <div>Jeffrey street carpark (rear of 521 - 523A Elizabeth St Nth Hobart)</div> <div>Job #: P 19 0421 008</div> <div>Date: 4/10/2021</div> <div>Inspector: Jess Holan and Fiona Kesenue-Fonte</div> </div>
Item	Notes
The land	
Current uses of the site	Car parking
Current uses of the surrounding land	Brewery? (behind hairdresser), restaurants - culinary king indian, kebab, fusion hairdresser, residential (west) residential to east car park to south.
Vegetation extent and type	Environmental weeds, english ivy, grass spread throughout site. Blackberry (declared weed) along rivulet and gorse (declared weed) in rivulet
Topography in relation to surrounding areas	Surrounding areas slope in the same direction as the site
Slope (position on slope, direction)	Slight slope from west to east
Surface water drainage	Surface flow from west to east or into rivulet, mostly unsealed apart from bitumen in the western quarter. Material on site appears to include fill (incl. broken bricks and concrete) brought in to level the property next to the creek line; also small piles of sand and gravel noted
Evidence of cut and fill activities	Providence Valley Rivulet to the North
Presence of pits, pond or lagoons	None - large boulders against Jeffrey creek and retaining wall and grass appear to be preventing erosion of gravel surface
Signs of erosion	
Buildings	
Details of buildings - age, occupancy	One shed that will be demolished, could be a few decades old
Building construction (frame, openings and height)	Likely timber frame
Building construction (slab on ground or other, presence or absence of crawl spaces and basements)	No slab, corrugated steel walls and roof, timber doors
The means of heating (fuel type) and cooling in the buildings on the site	N/A
Description of services and utilities	Sewer main bisects through the site, evidenced by air vents; premises sewerage pipes drain through west of site to the sewer main; stormwater pipe likely along eastern boundary; boom gate sensors in the ground next to boom gate. There also appears to be a possible interceptor trap installed at rear of new brewery
Condition of buildings (eg cracks in foundations)	Likely old or poorly constructed as walls are leaning, electrics are connected, down pipe flows straight onto ground
Hazardous building materials - eg Lead or asbestos	Possibly lead in paint on shed doors
Presence of septic tanks	None noted; premises sewerage
Services	
Evidence of services on site, in particular underground services (provide preferential pathways for contamination)	Sewer main bisects through the site, evidenced by air vents; premises sewerage pipes drain through west of site to the sewer main; stormwater pipe likely along eastern boundary; boom gate sensors in the ground next to boom gate. There also appears to be a possible interceptor trap installed at rear of new brewery
Any underground stormwater / mains water / sewerage lines - sketch on plan	Sewer main bisects through the site, evidenced by air vents; premises sewerage pipes drain through west of site to the sewer main; stormwater pipe likely along eastern boundary; boom gate sensors in the ground next to boom gate. There also appears to be a possible interceptor trap installed at rear of new brewery
Any underground gas - sketch on plan	None noted
Any underground communications lines - sketch on plan	None noted
Any underground power lines - sketch on plan	None noted
Water	
Quality of surface water	Providence Valley Rivulet - slightly cloudy and yellow in appearance; some algae growing on bottom of rivulet
Presence and type of groundwater bores on the site and adjacent landholdings	None noted
Sheens on water surfaces	None noted
Condition of GW bore headworks	N/A
Measurement of GW (water table and/or piezometric) levels	N/A
Contamination	
Disturbed, coloured or stained soil	Fill material present on site, includes brick fragments, broken concrete; could therefore include some ACM
Bare soil patches	Yes, on gravel / fill carpark area
Disturbed or distressed vegetation	None appear distressed, though most consists of grass and weeds - stinging nettles present in SW corner
Odours	indicating high organic matter in soil
Presence and condition of any underground storage tank (USTs) and associated infrastructure	Strong non-descript odour near rivulet culvert
Presence or absence of bonded asbestos-containing materials (bonded ACM) on the ground surface	None noted, other than a possible wastewater interceptor installed at the rear of the new brewery premises
Presence and condition of chemical containers, holding tanks, bunds etc.	None noted
Any evidence of on-site spillage of dangerous goods and/or off-site migration	None noted but car parking could lead to leaking or spilling of fuels, oils, coolants, etc.
Presence of pits containing buried waste	None noted; fill composition is unknown
Presence of fill materials, including building demolition rubble, mixed wastes, soils of unknown origins, etc.	Much of the site consists of fill brought in to level the site, including concrete and red brick fragments (historical bricks?) and bluemetal gravel; also small piles of concrete, sand and gravel were noted; Surface visibility was poor in some areas due to overgrown grass and weeds; lots of litter present
Other	
Presence of stockpiles, fill, containment areas, sumps, drains and waste disposal areas - operational and closed	Dumped concrete in southwest corner, sand pile in east and gravel in the northwest. Could be that other dumping has occurred such as oils and fuels, other wastes etc. Unsealed surface
Debris or waste disposal	Litter throughout site area
Underground structures that may be associated with sub-surface construction	Sewer lines joining to main sewer, grease traps or trade waste from brewery? stormwater line in the east
Condition of materials storage and handling facilities and any solid or liquid waste disposal areas	Discussed above
Neighbouring Uses	
Any evidence of contamination from neighbouring properties	Wastes from culinary king - pallets, oil
Are neighbouring uses potentially contaminating	Food premises would create rubbish and waste oil, leakage from sewer lines
Were historical neighbouring uses potentially contaminating	Refer to ESA report




Photographs

Appendix F

pitt&sherry

Photograph	Comment
	Site visit – 5 October 2021 Providence Valley Rivulet looking west
	Site visit – 5 October 2021 Providence Valley Rivulet looking east
	Site visit – 5 October 2021 Centre of Site looking east




Photograph	Comment
	Site visit – 5 October 2021 Centre of Site looking west
	Site visit – 5 October 2021 Staining on ground
	Site visit – 5 October 2021 Shed to be demolished

Photograph	Comment
	Site visit – 5 October 2021 Shed to be demolished
	Site visit – 5 October 2021 Parking area to the north-west of the Site

Photograph	Comment
	Site sampling – 12 October 2021 TP01 location
	Site sampling – 12 October 2021 TP01 profile
	Site sampling – 12 October 2021 TP02 location

Photograph	Comment
	Site sampling – 12 October 2021 TP02 Profile
	Site sampling – 12 October 2021 TP03 Location
	Site sampling – 12 October 2021 TP03 Profile

Photograph	Comment
	Site sampling – 12 October 2021 TP04 Location
	Site sampling – 12 October 2021 TP04 Profile
	Site sampling – 12 October 2021 TP05 Location

Photograph	Comment
	Site sampling – 12 October 2021 TP05 Profile
	Site sampling – 12 October 2021 TP06 Location
	Site sampling – 12 October 2021 TP06 Profile



Water Quality Meter Report

Appendix G

pitt&sherry

Location Properties

Location Name = Device Location

Report Properties

Start Time = 2021-10-05 09:52:03

Time Offset = 11:00:00

Duration = 00:01:34

Readings = 48

Instrument Properties

Device Model = SmarTROLL MP

Device SN = 612851

Instrument Properties

Device Model = PowerPack

Device SN = 613628

Date Time	MDU Concentration (mg/L) (830444)	Actual Conductivity (µS/cm) (612851)	pH (pH) (19858)	ORP (mV) (19858)	Temperature (°C) (612851)	Specific Conductivity (µS/cm) (612851)	RDO Saturation (%Sat) (830444)	Total Dissolved Solids (ppt) (612851)	Pressure (psi) (613778)	Temperature (°C) (613628)	Latitude (°)	Longitude (°)
10/5/21 9:52:03.000	10.57522	806.8987	7.502374	363.5287	12.39217	1062.84	101.5845	0.6908457	-0.03784044	13.92868	-42.87351687	147.3166812
10/5/21 9:52:05.000	10.6027	806.1003	7.518581	366.9309	12.36007	1062.646	101.7762	0.69072	-0.06084437	13.92899	-42.87351687	147.3166812
10/5/21 9:52:07.000	10.60557	805.8528	7.519975	367.1651	12.3569	1062.405	101.7964	0.6905634	-0.06084796	13.92952	-42.87351687	147.3166812
10/5/21 9:52:09.000	10.60844	805.6053	7.521369	367.3992	12.35373	1062.164	101.8166	0.6904069	-0.06085154	13.93004	-42.87351687	147.3166812
10/5/21 9:52:11.000	10.61131	805.3577	7.522764	367.6334	12.35056	1061.924	101.8368	0.6902503	-0.06085514	13.93056	-42.87351687	147.3166812
10/5/21 9:52:13.000	10.51394	814.6661	7.56944	370.6039	12.30872	1075.332	100.815	0.6989658	-0.06087878	13.93	-42.87351687	147.3166812
10/5/21 9:52:15.000	10.51005	815.0708	7.571941	370.8116	12.30609	1075.937	100.7721	0.699359	-0.0609342	13.93	-42.87351687	147.3166812
10/5/21 9:52:17.000	10.50616	815.4756	7.574442	371.0193	12.30346	1076.542	100.7292	0.6997521	-0.06098963	13.93	-42.87351687	147.3166812
10/5/21 9:52:19.000	10.48322	335.0899	7.617987	373.9517	12.2819	442.5199	100.2575	0.2876379	-0.05985857	13.93	-42.87351687	147.3166812
10/5/21 9:52:21.000	10.48033	312.8412	7.620934	374.1483	12.28004	413.1784	100.2162	0.268566	-0.05980441	13.93	-42.87351687	147.3166812
10/5/21 9:52:23.000	10.47743	290.5924	7.623879	374.3448	12.27819	383.8369	100.1749	0.249494	-0.05975026	13.93	-42.87351687	147.3166812
10/5/21 9:52:25.000	10.47454	268.3437	7.626826	374.5414	12.27633	354.4954	100.1336	0.230422	-0.0596961	13.93	-42.87351687	147.3166812
10/5/21 9:52:27.000	10.40681	759.0386	7.659586	377.6124	12.2529	1003.36	99.63834	0.6521843	-0.06034669	13.94745	-42.87351687	147.3166812
10/5/21 9:52:29.000	10.40318	772.0004	7.661988	377.814	12.25136	1020.525	99.60561	0.6633415	-0.06035453	13.94825	-42.87351687	147.3166812
10/5/21 9:52:31.000	10.39956	784.9622	7.664389	378.0157	12.24982	1037.69	99.57289	0.6744986	-0.06036236	13.94905	-42.87351687	147.3166812
10/5/21 9:52:33.000	10.37033	795.8553	7.680776	381.3328	12.23682	1052.434	99.26511	0.6840824	-0.05459437	13.95776	-42.87351687	147.3166812
10/5/21 9:52:35.000	10.36764	805.5269	7.682191	381.5472	12.23575	1065.24	99.24087	0.6924061	-0.05433869	13.95849	-42.87351687	147.3166812
10/5/21 9:52:37.000	10.36495	815.1985	7.683608	381.7616	12.23468	1078.046	99.21664	0.7007298	-0.054083	13.95923	-42.87351687	147.3166812
10/5/21 9:52:39.000	10.36226	824.8701	7.685023	381.9761	12.23361	1090.852	99.1924	0.7090536	-0.05382732	13.95996	-42.87351687	147.3166812
10/5/21 9:52:41.000	10.34554	815.9836	7.699106	384.0415	12.24993	1078.667	99.06842	0.7011339	-0.05968707	13.95969	-42.87351687	147.3166812
10/5/21 9:52:43.000	10.34418	815.9795	7.700082	384.2012	12.25039	1078.65	99.05647	0.7011223	-0.05983524	13.95986	-42.87351687	147.3166812
10/5/21 9:52:45.000	10.34281	815.9754	7.701059	384.3609	12.25084	1078.632	99.04453	0.7011107	-0.05998341	13.96002	-42.87351687	147.3166812
10/5/21 9:52:47.000	10.33653	815.3959	7.714289	386.8575	12.23876	1078.195	98.91079	0.7008265	-0.0603491	13.96	-42.87351687	147.3166812
10/5/21 9:52:49.000	10.3359	815.3663	7.715199	387.0178	12.23845	1078.164	98.90186	0.7008067	-0.06046912	13.96	-42.87351687	147.3166812
10/5/21 9:52:51.000	10.33528	815.3365	7.716108	387.1781	12.23813	1078.134	98.89292	0.7007868	-0.06058913	13.96	-42.87351687	147.3166812
10/5/21 9:52:53.000	10.33465	815.3069	7.717018	387.3384	12.23781	1078.103	98.88399	0.700767	-0.06070914	13.96	-42.87351687	147.3166812
10/5/21 9:52:55.000	10.34837	815.5869	7.724359	390.6345	12.2179	1079.016	99.01524	0.7013603	-0.05263419	13.97761	-42.87351687	147.3166812
10/5/21 9:52:57.000	10.34887	815.5875	7.724987	390.8424	12.2167	1079.049	99.01849	0.701382	-0.0522632	13.97844	-42.87351687	147.3166812
10/5/21 9:52:59.000	10.34938	815.5881	7.725615	391.0504	12.21551	1079.083	99.02174	0.7014037	-0.0518922	13.97926	-42.87351687	147.3166812
10/5/21 9:53:01.000	10.34753	815.5018	7.730158	392.7597	12.21244	1079.052	98.99985	0.7013839	-0.06010699	13.97929	-42.87351687	147.3166812
10/5/21 9:53:03.000	10.34771	815.5029	7.730525	392.9052	12.21189	1079.068	99.00132	0.7013945	-0.06031595	13.97964	-42.87351687	147.3166812
10/5/21 9:53:05.000	10.34789	815.504	7.730893	393.0507	12.21135	1079.085	99.00279	0.701405	-0.06052492	13.98	-42.87351687	147.3166812
10/5/21 9:53:07.000	10.34807	815.5051	7.73126	393.1963	12.21081	1079.101	99.00426	0.7014157	-0.06073388	13.98035	-42.87351687	147.3166812
10/5/21 9:53:09.000	10.34613	815.446	7.734566	395.435	12.21092	1079.02	98.98558	0.7013628	-0.07166709	13.98885	-42.87351687	147.3166812
10/5/21 9:53:11.000	10.34601	815.4417	7.734818	395.5772	12.21085	1079.016	98.98436	0.7013604	-0.07233262	13.98927	-42.87351687	147.3166812
10/5/21 9:53:13.000	10.3459	815.4374	7.73507	395.7194	12.21077	1079.012	98.98315	0.701358	-0.07299816	13.9897	-42.87351687	147.3166812
10/5/21 9:53:15.000	10.34928	815.6202	7.737535	397.9715	12.21217	1079.216	99.02084	0.7014905	-0.05724985	13.98971	-42.87351687	147.3166812
10/5/21 9:53:17.000	10.3494	815.6278	7.737721	398.1248	12.21223	1079.225	99.02231	0.701496	-0.05672167	13.9899	-42.87351687	147.3166812
10/5/21 9:53:19.000	10.34953	815.6354	7.737907	398.2781	12.21229	1079.233	99.02377	0.7015014	-0.05619348	13.99008	-42.87351687	147.3166812

Date Time	KUO Concentration (mg/L) (830444)	Actual Conductivity (µS/cm) (612851)	pH (pH) (19858)	ORP (mV) (19858)	Temperature (°C) (612851)	Specific Conductivity (µS/cm) (612851)	RDO Saturation (%Sat) (830444)	Total Dissolved Solids (ppt) (612851)	Pressure (psi) (613778)	Temperature (°C) (613628)	Latitude (°)	Longitude (°)
10/5/21 9:53:21.000	10.34966	815.643	7.738093	398.4314	12.21235	1079.241	99.02523	0.7015069	-0.0556653	13.99026	-42.87351687	147.3166812
10/5/21 9:53:23.000	10.35181	815.6628	7.740142	400.7478	12.21113	1079.301	99.03418	0.7015455	-0.0693097	14.00758	-42.87351687	147.3166812
10/5/21 9:53:25.000	10.35198	815.6674	7.740291	400.9032	12.2111	1079.307	99.03534	0.7015499	-0.06962574	14.00839	-42.87351687	147.3166812
10/5/21 9:53:27.000	10.35215	815.6719	7.74044	401.0587	12.21107	1079.314	99.0365	0.7015544	-0.06994179	14.00919	-42.87351687	147.3166812
10/5/21 9:53:29.000	10.35485	815.6946	7.74226	403.2411	12.21046	1079.361	99.06433	0.7015847	-0.06177796	14.00935	-42.87351687	147.3166812
10/5/21 9:53:31.000	10.35502	815.6962	7.742387	403.3895	12.21041	1079.365	99.0658	0.701587	-0.06165685	14.00969	-42.87351687	147.3166812
10/5/21 9:53:33.000	10.35519	815.6977	7.742515	403.5379	12.21036	1079.368	99.06728	0.7015892	-0.06153573	14.01004	-42.87351687	147.3166812
10/5/21 9:53:35.000	10.35536	815.6992	7.742642	403.6863	12.21031	1079.371	99.06876	0.7015914	-0.06141462	14.01038	-42.87352512	147.3167151
10/5/21 9:53:37.000	10.35389	815.7443	7.744218	405.5718	12.20473	1079.583	99.04247	0.7017292	-0.07734862	14.01	-42.87352512	147.3167151



Surface Water Sampling Field Sheet

Appendix H

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SURFACE WATER SAMPLING FIELD DATA SHEET

Site I.D	321-323A Elizabeth street
Date	5/10/2021
Completed by	Jess Holan
Client	Hobart City Council
Weather	
Equip. used	Long-handled sampler (2.3 m)

[illegible]



Equipment Calibration Reports

Appendix I

pitt&sherry



Calibration Certificate

AirMet Scientific P/L

7-11 Ceylon Street
Nunawading
VIC 3131, Australia
Tel: 03 8878 3300
Fax: 03 8878 3344

This document certifies that the instrument detailed has been calibrated to the parameters

Certificate Print Date: 14-Sep-2021

Call ID / Order No: 251519

Calibration Date: 07-Sep-2021

Job No / Pack No: S2515190001

Next Calibration Due: 7-Mar-2022

Customer: Pitt & Sherry-ID 307362**Serial No:** 592-902419**Description:** MiniRAE3000 Monitor - PID 10.6eV lamp 1/2, R

Calibration Summary

Frequency: Semi-Annual **Temp:** 22°C **As Found:** Out of Tolerance **Result:** Pass
Humidity: 45% **Certificate:** S2515190001

<u>Desc</u>	<u>As Found</u>		<u>As Left (Cal Status)</u>	
	<u>Actual</u>	<u>Result</u>	<u>Actual</u>	<u>Result</u>
100ppm Isobutylene	131.7	Fail	100.8	Pass
1000ppm Isobutylene	1131.4	Fail	993.8	Pass

Standard Used				
<u>Equip ID</u>	<u>Description</u>	<u>Valid Until</u>	<u>Cert</u>	
ME671	1000PPM Isobutylene in Air Balance	01/12/2022	234281	
ME843	100ppm Isobutylene in Air	04/03/2026	400296364	

Completed By: Kodi Tecklenburg**Signed:**

Calibration Report

Instrument	SmarTROLL MP
Serial Number	612851
Created	5/10/2021

Sensor	RDO
Serial Number	830444
Last Calibrated	5/10/2021

Calibration Details

Slope	0.9919606
Offset	0.00 mg/L

Calibration point 100%

Concentration	9.78 mg/L
Temperature	15.79 °C
Barometric Pressure	992.26 mbar

Sensor	Conductivity
Serial Number	612851
Last Calibrated	5/10/2021

Calibration Details

Cell Constant	0.999
Reference Temperature	25.00 °C
TDS Conversion Factor (ppm)	0.65

Sensor	Level
Serial Number	613778
Last Calibrated	Factory Defaults

Sensor	pH
Serial Number	19858
Last Calibrated	5/10/2021

Calibration Details

Total Calibration Points	2
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Calibration Point 1

pH of Buffer	4.00 pH
pH mV	107.7 mV
Temperature	16.19 °C

Calibration Point 2

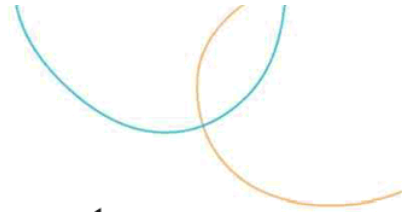
pH of Buffer	7.02 pH
pH mV	-72.9 mV
Temperature	16.15 °C

Slope and Offset 1

Slope	-59.8 mV/pH
Offset	-71.7 mV

Sensor	ORP
Serial Number	19858
Last Calibrated	5/10/2021

<i>Calibration Details</i>	
ORP Solution	ZoBell's
Offset	58.8 mV
Temperature	16.61 °C



Soil Sampling Field Sheet

Appendix J

pitt&sherry

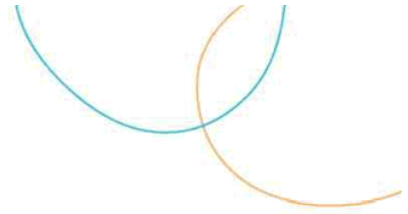
SOIL SAMPLING FIELD DATA SHEET

Project number:	P-19-0421.008
Project name:	Lefroy street car park

Site I.D	321-323A Elizabeth Street
Date	12/10/2021
Completed by	Jessica Holan
Client	Hobart City Council
Weather	Fine

Sample ID	Date	Time	Coordinates	Depth (m)	Material type	Moisture (D, M, W)	Texture (C, M, F)	PID (ppm)	Odour	Contamination concerns	Analytes
TP01-1	12/10/2021	7:30	525882 5253169	0-0.2	red gravel with BDR - red bricks and plastic	Dry	Coarse	0	No	Fuel spill and sewer, wastes from restaurants, oil spills	Hydrocarbons, 8 metals, phenols, PAH, Microbiological
TP01-2	12/10/2021	7:30	525882 5253169	0.2-0.5	Silty clay and loam	Dry	Fine	0	No	Fuel spill and sewer, wastes from restaurants, oil spills	Hydrocarbons, 8 metals, phenols, PAH, Microbiological, NEPM soil characteristics
TP01-3	12/10/2021	7:30	525882 5253169	0.5-1.2	clay	Moist	Fine	0	No	Fuel spill and sewer, wastes from restaurants, oil spills	Hydrocarbons, 8 metals, phenols, PAH, Microbiological
TP01-4	12/10/2021	7:30	525882 5253169	1.2-1.6	sandy clay	Dry	Fine	0	No	Fuel spill and sewer, wastes from restaurants, oil spills	Hydrocarbons, 8 metals, phenols, PAH, Microbiological
TP06-1	12/10/2021	9:00	525898 5253191	0-0.3	Silty clay and loam	Moist	Medium	0	No	Fuel spill and sewer, wastes from restaurants, oil spills	Hydrocarbons, 8 metals, phenols, PAH, Microbiological, NEPM
triplicate of TP06-1 HERE										Fuel spill and sewer, wastes from restaurants, oil spills	Hydrocarbons, 8 metals, phenols, PAH, Microbiological
TP06-2	12/10/2021	9:00	525898 5253191	0.3-1.2	hard clay	Moist	Coarse	0	No	Fuel spill and sewer, wastes from restaurants, oil spills	Hydrocarbons, 8 metals, phenols, PAH,
TP06-3	12/10/2021	9:00	525898 5253191	1.2-1.6	sandy grey clay	Dry	Medium	0	No	Fuel spill and sewer, wastes from restaurants, oil spills	Hydrocarbons, 8 metals, phenols, PAH,
TP02-1	12/10/2021	10:00	525879 5253177	0.05-0.3	Silty clay and loam mixed with some blue metal, broken glass and plastic	Dry-Moist		1.3	No	Fuel spill and sewer, wastes from restaurants, oil spills	Hydrocarbons, 8 metals, phenols, PAH,
TP02-2	12/10/2021	10:00	525879 5253177	0.3-1.4	orange brown hard clay	Dry-Moist		0	No	Fuel spill and sewer, wastes from restaurants, oil spills	Hydrocarbons, 8 metals, phenols, PAH,
TP02-3	12/10/2021	10:00	525879 5253177	1.4-1.6	sandy clay and weathered rocks	Dry-Moist	Medium	0	No	Fuel spill and sewer, wastes from restaurants, oil spills	Hydrocarbons, 8 metals, phenols, PAH,
TP03-1	12/10/2021	10:45	525893 5253173	0-0.2	black organic sandy clay with grass on top	Dry-Moist	Fine	0	No	Fuel spill and sewer, wastes from restaurants, oil spills	Hydrocarbons, 8 metals, phenols, PAH,
TP03-2	12/10/2021	10:45	525893 5253173	0.2-1.3	orange crumbly clay	Moist	Fine	0	No	Fuel spill and sewer, wastes from restaurants, oil spills	Hydrocarbons, 8 metals, phenols, PAH,
TP03-3	12/10/2021	10:45	525893 5253173	1.3-1.6	Grey brown sandy clay	Dry-Moist	Fine	0	No	Fuel spill and sewer, wastes from restaurants, oil spills	Hydrocarbons, 8 metals, phenols, PAH,
TP04-1	12/10/2021	11:25	525891 5253181	0-0.1	Blue-grey fine gravel with blue metal and loam	Dry	Coarse	0	Loamy	Fuel spill and sewer, wastes from restaurants, oil spills	Hydrocarbons, 8 metals, phenols, PAH,

Sample ID	Date	Time	Coordinates	Depth (m)	Material type	Moisture (D, M, W)	Texture (C, M, F)	PID (ppm)	Odour	Contamination concerns	Analytes
TP04-2	12/10/2021	11:25	525891 5253181	0.1-0.4	Black sandy clay with coal, oyster shells, ceramics, waste from home or restaurant?	Dry	Coarse	0	No	Fuel spill and sewer, wastes from restaurants, oil spills	Hydrocarbons, 8 metals, phenols, PAH.
TP04-3	12/10/2021	11:25	525891 5253181	0.4-1.0	Orange grey sandy clay	Dry-Moist	Coarse	0	No	Fuel spill and sewer, wastes from restaurants, oil spills	Hydrocarbons, 8 metals, phenols, PAH.
TP05-1	12/10/2021	12:30	525905 5253186	0-0.1	Blue grey gravel with blue metal	Moist	Medium/Fine	0	No	Fuel spill and sewer, wastes from restaurants, oil spills	Hydrocarbons, 8 metals, phenols, PAH.
TP05-2	12/10/2021	12:30	525905 5253186	0.1-0.4	Black organic clay, small pieces of bricks, coal	Dry	Fine	0	No	Fuel spill and sewer, wastes from restaurants, oil spills	Hydrocarbons, 8 metals, phenols, PAH.



Test Pit Logs

Appendix K

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Environmental Log Excavation

Pit Number

TP01

Project Number:

Client:	Hobart City Council	Date Commenced:	12/10/2021
Project Name:	321-323A Elizabeth street	Date Completed:	12/10/2021
Excavation Location:	South west corner	Date Backfilled:	
Easting:	525882 mE	Northing:	5253169 mN
Zone:	55	Datum:	GDA95
Operator:	Seaton Waterfield	Equipment Type:	4.5tonne komatsu pc45mr
		Logged By:	J. Holan
		Date:	12/10/2021
		Target depth (m):	1.6
		Length (m):	2
		(Actual) total depth (m):	1.6
		Width (m):	0.6

Depth (m)	Sample Collection	Graphic Log	Dominant Material	Material Description (fill, natural, reworked, colour, staining, odour, BDR, potential asbestos)	Moisture Content	Odour	PID Reading (ppm)	Water
	TP01-1		FILL	Light brown compacted soil and gravel	D	No	0	
	TP01-2		OH	Topsoil. Silty Clay, dark brown, organic	D	No	0	
-0.5								
	TP01-3		CL	Brown grey clay merging into orange grey	D-M	No	0	
-1.0								
	TP01-4		SC	Clayey sand - light brown	D-M	No	0	
-1.5								

<p>Odour</p> <p>Y - Yes N - No S - Slight</p> <p>Moisture Content</p> <p>Granular</p> <p>D - Dry M - Moist W - Wet</p> <p>Water</p> <p>✓ - Level (Date) Δ - Inflow</p> <p>Material Description</p> <p>BDR - Building Demolition Rubble</p>	<p align="center">Location Image</p>  <p align="center">Excavation Detail</p>  <p align="center">*The profile logs are generalised only and are not intended to meet geotechnical standards</p>
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Environmental Log Excavation

Pit Number
TP02

Project Number:

Client:	Hobart City Council	Date Commenced:	12/10/2021
Project Name:	321-323A Elizabeth street	Date Completed:	12/10/2021
Excavation Location:	North west corner	Date Backfilled:	
Easting:	5258 9 mE	Northing:	52531 mN
Zone:	55	Datum:	GDA95
Operator:	Seaton Waterfield	Equipment Type:	4.5tonne komatsu pc45mr
		Logged By:	J. Holan
		Date:	12/10/2021
		Target depth (m):	1.6
		Length (m):	2
		(Actual) total depth (m):	1.6
		Width (m):	0.6

Depth (m)	Sample Collection	Graphic Log	Dominant Material	Material Description (fill, natural, reworked, colour, staining, odour, BDR, potential asbestos)	Moisture Content	Odour	PID Reading (ppm)	Water
			FILL	Thin layer of gravel and blue metal		No		
	TP02-1		LO	Black organic soil mixed with some blue metal, broken glass and plastic	D-M	No	1.3	
-0.5								
	TP02-2		CL	Orange brown hard clay	D-M	No	0	
-1.0								
-1.5	TP02-3		SC	Sandy clay and weathered rocks	D-M	No	0	

<p>Odour</p> <p>Y - Yes N - No S - Slight</p> <p>Moisture Content</p> <p>Granular</p> <p>D - Dry M - Moist W - Wet</p> <p>Water</p> <p>✓ - Level (Date) Δ - Inflow</p> <p>Material Description</p> <p>BDR - Building Demolition Rubble</p>	<p align="center">Location Image</p>  <p align="center">Excavation Detail</p>  <p align="center">*The profile logs are generalised only and are not intended to meet geotechnical standards</p>
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Environmental Log Excavation

Pit Number
TP03

Project Number:

Client:	Hobart City Council	Date Commenced:	12/10/2021
Project Name:	321-323A Elizabeth street	Date Completed:	12/10/2021
Excavation Location:	Centre south	Date Backfilled:	
Easting:	525893 mE	Northing:	52531 3 mN
Zone:	55	Datum:	GDA95
Operator:	Seaton Waterfield	Equipment Type:	4.5tonne komatsu pc45mr
		Logged By:	J. Holan
		Date:	12/10/2021
		Target depth (m):	1.6
		Length (m):	2
		(Actual) total depth (m):	1.6
		Width (m):	0.6

Depth (m)	Sample Collection	Graphic Log	Dominant Material	Material Description (fill, natural, reworked, colour, staining, odour, BDR, potential asbestos)	Moisture Content	Odour	PID Reading (ppm)	Water
	TP03-1		SC	Black organic sandy clay with grass on top	Dry-Moist	No	0	
-0.5								
	TP03-2		CL	Orange crumbly clay	Moist	No	0	
-1.0								
	TP03-3		SC	Grey brown sandy clay	Dry-Moist	No	0	
-1.5								

<p>Odour</p> <p>Y - Yes N - No S - Slight</p> <p>Moisture Content Granular</p> <p>D - Dry M - Moist W - Wet</p> <p>Water</p> <p>Δ - Level (Date) ▽ - Inflow</p> <p>Material Description</p> <p>BDR - Building Demolition Rubble</p>	<p align="center">Location Image</p> <p align="center">Excavation Detail</p> <p align="center">*The profile logs are generalised only and are not intended to meet geotechnical standards</p>
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Environmental Log Excavation

Pit Number
TP04

Project Number:

Client:	Hobart City Council	Date Commenced:	12/10/2021
Project Name:	321-323A Elizabeth street	Date Completed:	12/10/2021
Excavation Location:	Centre north	Date Backfilled:	
Easting:	525891 mE	Northing:	5253181 mN
Zone:	55	Datum:	GDA95
Operator:	Seaton Waterfield	Equipment Type:	4.5tonne komatsu pc45mr
		Logged By:	J. Holan
		Date:	12/10/2021
		Target depth (m):	1.6
		Length (m):	2.5
		(Actual) total depth (m):	1.0
		Width (m):	0.6

Depth (m)	Sample Collection	Graphic Log	Dominant Material	Material Description (fill, natural, reworked, colour, staining, odour, BDR, potential asbestos)	Moisture Content	Odour	PID Reading (ppm)	Water
	TP04-1		FILL	Blue-grey fine gravel with blue metal and loam	Dry	Loamy	0	
	TP04-2		SC	Black sandy clay with coal, oyster shells, ceramics, waste from home or restaurant	Dry	No	0	
0.5	TP04-3		CL	Orange grey sandy clay	Dry-Moist	No	0	

<p>Odour</p> <p>Y - Yes N - No S - Slight</p> <p>Moisture Content</p> <p>Granular</p> <p>D - Dry M - Moist W - Wet</p> <p>Water</p> <p>✓ - Level (Date) Δ - Inflow</p> <p>Material Description</p> <p>BDR - Building Demolition Rubble</p>	<p align="center">Location Image</p> 	<p align="center">Excavation Detail</p> 
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*The profile logs are generalised only and are not intended to meet geotechnical standards



Environmental Log Excavation

Pit Number
TP05

Project Number:

Client:	Hobart City Council	Date Commenced:	12/10/2021
Project Name:	321-323A Elizabeth street	Date Completed:	12/10/2021
Excavation Location:	South east corner	Date Backfilled:	
Easting:	525905 mE	Northing:	5253186 mN
Zone:	55	Datum:	GDA95
Operator:	Seaton Waterfield	Equipment Type:	4.5tonne komatsu pc45mr
		Logged By:	J. Holan
		Date:	12/10/2021
		Target depth (m):	1.6
		Length (m):	2
		(Actual) total depth (m):	1.5
		Width (m):	0.6

Depth (m)	Sample Collection	Graphic Log	Dominant Material	Material Description (fill, natural, reworked, colour, staining, odour, BDR, potential asbestos)	Moisture Content	Odour	PID Reading (ppm)	Water
	TP05-1		FILL	Blue grey gravel with blue metal	Moist	No	0	
	TP05-2		CL	Black organic clay, small pieces of bricks, coal	Dry	No	0	
-0.5			CL	Brown - orange clay - hard	Dry-Moist	No		
	TP05-3		CL	Light orange clay, crumbly	Dry	No	0	
-1.0								
	TP05-4		SC	Sandy light brown, grey clay with weathered rocks	Dry	No	0	

<p>Odour</p> <p>Y - Yes N - No S - Slight</p> <p>Moisture Content</p> <p>Granular</p> <p>D - Dry M - Moist W - Wet</p> <p>Water</p> <p>✓ - Level (Date) X - Inflow</p> <p>Material Description</p> <p>BDR - Building Demolition Rubble</p>	<p align="center">Location Image</p>  <p align="center">Excavation Detail</p>  <p align="center">*The profile logs are generalised only and are not intended to meet geotechnical standards</p>
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Environmental Log Excavation

Pit Number
TP06

Project Number:

Client:	Hobart City Council	Date Commenced:	12/10/2021
Project Name:	321-323A Elizabeth street	Date Completed:	12/10/2021
Excavation Location:	South east corner	Date Backfilled:	
Easting:	525898 mE	Northing:	5253191 mN
Zone:	55	Datum:	GDA95
Operator:	Seaton Waterfield	Equipment Type:	4.5tonne komatsu pc45mr
		Logged By:	J. Holan
		Date:	12/10/2021
		Target depth (m):	1.6
		(Actual) total depth (m):	1.6
		Length (m):	2
		Width (m):	0.6

Depth (m)	Sample Collection	Graphic Log	Dominant Material	Material Description (fill, natural, reworked, colour, staining, odour, BDR, potential asbestos)	Moisture Content	Odour	PID Reading (ppm)	Water
	TP06-1		OH	Sandy organic black clay mixed wit blue metal and broken glass and ceramics	M	No	0	
-0.5								
	TP06-2		CL	Orange brown hard clay	M	No	0	
-1.0								
	TP06-3		SC	Sandy clay and weathered rocks	D	No	0	
-1.5								


<p>Odour</p> <p>Y - Yes N - No S - Slight</p> <p>Moisture Content</p> <p>Granular</p> <p>D - Dry M - Moist W - Wet</p> <p>Water</p> <p>Δ - Level (Date) V - Inflow</p> <p>Material Description</p> <p>BDR - Building Demolition Rubble</p>	<p align="center">Location Image</p> <p align="center">Excavation Detail</p> <p align="center">*The profile logs are generalised only and are not intended to meet geotechnical standards</p>
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Laboratory Chain of Custody Forms

Appendix L

pitt&sherry


CHAIN OF CUSTODY
COC#: 28634 ALS Laboratory: EM Melbourne

RELINQUISHED BY:
DATE TIME:

RECEIVED BY:
DATE TIME:

RELINQUISHED BY:
DATE TIME:

RECEIVED BY:
DATE TIME:

CLIENT: PITSHE - Pitt & Sherry (Operations) Pty Ltd
PROJECT: 321-323A Elizabeth Street P.29.0421
SITE: Elizabeth street
ORDER NO:
PROJECT MANAGER: Jessica Holan
PRIMARY SAMPLER: Jessica Holan
EMAIL REPORTS TO: jholan@pittsh.com.au
EMAIL INVOICES TO: cclark@pittsh.com.au


TURNAROUND REQUIREMENTS : 5 Days
Biohazard info:

LABORATORY USE ONLY (Circle)
Custody Seal intact? Yes No N/A
Free ice / frozen ice bricks present upon receipt? Yes No N/A
Random Sample Temperature on Receipt: C
Other comments:

CONTACT PH: 0418 690 804 SAMPLER MOBILE: 0418 690 804
QUOTE NO: ME-769-21 / EM2021PITSHE0020


SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	SOILS SOIL	WATERS WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
001	TP02-1_0.05-0.30		12/10/2021 10:18 AM	Soil	ALS: 2 Non ALS: 0	No	Partial 3/6			
002	TP02-2_0.30-1.40		12/10/2021 10:19 AM	Soil	ALS: 2 Non ALS: 0	No	Partial 3/6			
003	TP02-3_1.40-1.60		12/10/2021 10:20 AM	Soil	ALS: 2 Non ALS: 0	No	Partial 3/6			
004	Triplicate 1		12/10/2021 10:21 AM	Soil	ALS: 1 Non ALS: 0	No	Partial 2/6			
005	TRiplicate 2	Please transfer to eurofins	12/10/2021 10:23 AM	Soil	ALS: 1 Non ALS: 0	No	Partial 2/6		Please transfer to eurofins	Please transfer to eurofins
006	TP06-1		12/10/2021 10:26 AM	Soil	ALS: 1 Non ALS: 1	No	Partial 3/6			Please test bag for NEPM soil characteristics
007	TP06-2		12/10/2021 10:27 AM	Soil	ALS: 1 Non ALS: 0	No	Partial 2/6			
008	TP06-3		12/10/2021 10:27 AM	Soil	ALS: 1 Non ALS: 0	No	Partial 2/6			
009	TP01-1		12/10/2021 10:32 AM	Soil	ALS: 1 Non ALS: 0	No	Partial 2/6			

Environmental Division
Melbourne
Work Order Reference
EM2120163



Telephone : + 61-3-9549 9600

FREIGHT
- 13/10/21 -
Received: *Albert M*
Carrier: *-TAS*
C/note:
Temp: 10.6°C Seal: ☒ N
Ice / Icebricks / NA
Melted



CHAIN OF CUSTODY		RELINQUISHED BY:		RECEIVED BY:		RELINQUISHED BY:		RECEIVED BY:	
ALS COC#: 28634 ALS Laboratory: EM Melbourne		DATE TIME:		DATE TIME:		DATE TIME:		DATE TIME:	
CLIENT: PITSHE - Pitt & Sherry (Operations) Pty Ltd		TURNAROUND REQUIREMENTS : 5 Days		LABORATORY USE ONLY (Circle)					
PROJECT: 321-323A Elizabeth Street P.29.0421				Custody Seal intact? Yes No N/A					
SITE: Elizabeth street		Biohazard info:		Free ice / frozen ice bricks present upon receipt? Yes No N/A					
ORDER NO:				Random Sample Temperature on Receipt: °C					
PROJECT MANAGER: Jessica Holan		CONTACT PH: 0418 690 804		SAMPLER MOBILE: 0418 690 804		Other comments:			
PRIMARY SAMPLER: Jessica Holan		QUOTE NO: ME-769-21		/ EM2021PITSHE0020					
EMAIL REPORTS TO: jholan@pittsh.com.au									
EMAIL INVOICES TO: cclark@pittsh.com.au									

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	SOILS SOIL	WATERS WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
0109	TP01-2		12/10/2021 10:33 AM	Soil	ALS: 2 Non ALS: 0	No	Partial 3/6			
0110	TP01-3		12/10/2021 10:34 AM	Soil	ALS: 2 Non ALS: 1	No	Partial 4/6			Please test plastic bag for NEPM soil characteristics
0111	TP01-4		12/10/2021 10:36 AM	Soil	ALS: 2 Non ALS: 0	No	Partial 3/6			
0112	TP03-1_0.00-0.20		12/10/2021 10:49 AM	Soil	ALS: 1 Non ALS: 0	No	Partial 2/6			
0113	TP03-2		12/10/2021 10:50 AM	Soil	ALS: 1 Non ALS: 0	No	Partial 2/6			
0114	TP03-3_1.40-1.60		12/10/2021 10:51 AM	Soil	ALS: 1 Non ALS: 0	No	Partial 2/6			
0115	TP04-1_0.00-0.10		12/10/2021 11:06 AM	Soil	ALS: 1 Non ALS: 0	No	Partial 2/6			
0116	TP04-2_0.10-0.40		12/10/2021 11:08 AM	Soil	ALS: 1 Non ALS: 0	No	Partial 2/6			
0117	TP04-3_0.40-1.00		12/10/2021 11:09 AM	Soil	ALS: 1 Non ALS: 0	No	Partial 2/6			

3 of 6


CHAIN OF CUSTODY		RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:																																																																						
ALS COC#: 28634 ALS Laboratory: EM Melbourne		DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:																																																																						
CLIENT: PITSHE - Pitt & Sherry (Operations) Pty Ltd PROJECT: 321-323A Elizabeth Street P.29.0421 SITE: Elizabeth street ORDER NO: PROJECT MANAGER: Jessica Holan PRIMARY SAMPLER: Jessica Holan EMAIL REPORTS TO: jholan@pittsh.com.au EMAIL INVOICES TO: cclark@pittsh.com.au		TURNAROUND REQUIREMENTS : 5 Days Biohazard info:		LABORATORY USE ONLY (Circle) Custody Seal intact? Yes No N/A Free ice / frozen ice bricks present upon receipt? Yes No N/A Random Sample Temperature on Receipt: °C Other comments:																																																																							
<table border="1"> <thead> <tr> <th>SAMPLE</th> <th>SAMPLE NAME</th> <th>PARTIAL ANALYSIS GROUP NAME</th> <th>MATRIX</th> <th>SELECTED ANALYSIS NAME</th> </tr> </thead> <tbody> <tr> <td>001</td> <td>TP02-1_0.05-0.30</td> <td>SOILS SOIL</td> <td>Soil</td> <td>- S-26 8 metals/TRH/BTEXN/PAH ✓ - EP075-TAS Benzo(a)pyrene - Waste Classification (TAS requirements) ✓ - MM804 Thermotolerant Coliforms & E.coli by MPN ✓</td> </tr> <tr> <td>002</td> <td>TP02-2_0.30-1.40</td> <td>SOILS SOIL</td> <td>Soil</td> <td>- S-26 8 metals/TRH/BTEXN/PAH - EP075-TAS Benzo(a)pyrene - Waste Classification (TAS requirements) - MM804 Thermotolerant Coliforms & E.coli by MPN</td> </tr> <tr> <td>003</td> <td>TP02-3_1.40-1.60</td> <td>SOILS SOIL</td> <td>Soil</td> <td>- S-26 8 metals/TRH/BTEXN/PAH - EP075-TAS Benzo(a)pyrene - Waste Classification (TAS requirements) - MM804 Thermotolerant Coliforms & E.coli by MPN</td> </tr> <tr> <td>004</td> <td>Triplicate 1</td> <td>SOILS SOIL</td> <td>Soil</td> <td>- S-26 8 metals/TRH/BTEXN/PAH - 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EP075-TAS Benzo(a)pyrene - Waste Classification (TAS requirements) ✓ - MM804 Thermotolerant Coliforms & E.coli by MPN ✓	002	TP02-2_0.30-1.40	SOILS SOIL	Soil	- S-26 8 metals/TRH/BTEXN/PAH - EP075-TAS Benzo(a)pyrene - Waste Classification (TAS requirements) - MM804 Thermotolerant Coliforms & E.coli by MPN	003	TP02-3_1.40-1.60	SOILS SOIL	Soil	- S-26 8 metals/TRH/BTEXN/PAH - EP075-TAS Benzo(a)pyrene - Waste Classification (TAS requirements) - MM804 Thermotolerant Coliforms & E.coli by MPN	004	Triplicate 1	SOILS SOIL	Soil	- S-26 8 metals/TRH/BTEXN/PAH - EP075-TAS Benzo(a)pyrene - Waste Classification (TAS requirements)	005	Triplicate 2	SOILS SOIL <i>evaporating</i>	Soil	- S-26 8 metals/TRH/BTEXN/PAH - EP075-TAS Benzo(a)pyrene - Waste Classification (TAS requirements)	006 5	TP06-1	SOILS SOIL	Soil	- S-26 8 metals/TRH/BTEXN/PAH - EP075-TAS Benzo(a)pyrene - Waste Classification (TAS requirements) - P-22 (Meib) Soil Characterisation Package	007 C	TP06-2	SOILS SOIL	Soil	- S-26 8 metals/TRH/BTEXN/PAH - 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Waste Classification (TAS requirements)
SAMPLE	SAMPLE NAME	PARTIAL ANALYSIS GROUP NAME	MATRIX	SELECTED ANALYSIS NAME																																																																							
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003	TP02-3_1.40-1.60	SOILS SOIL	Soil	- S-26 8 metals/TRH/BTEXN/PAH - EP075-TAS Benzo(a)pyrene - Waste Classification (TAS requirements) - MM804 Thermotolerant Coliforms & E.coli by MPN																																																																							
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012 (1)	TP01-4	SOILS SOIL	Soil	- S-26 8 metals/TRH/BTEXN/PAH - EP075-TAS Benzo(a)pyrene - Waste Classification (TAS requirements) - MM804 Thermotolerant Coliforms & E.coli by MPN																																																																							
013 (2)	TP03-1_0.00-0.20	SOILS SOIL	Soil	- S-26 8 metals/TRH/BTEXN/PAH - EP075-TAS Benzo(a)pyrene - Waste Classification (TAS requirements)																																																																							

Tuesday, October 12, 2021

7:37:29 PM



4 of 6

CHAIN OF CUSTODY		RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
ALS COC#: 28634 ALS Laboratory: EM Melbourne		DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:
CLIENT: PITSHE - Pitt & Sherry (Operations) Pty Ltd		TURNAROUND REQUIREMENTS : 5 Days		LABORATORY USE ONLY (Circle)	
PROJECT: 321-323A Elizabeth Street P.29.0421					
SITE: Elizabeth street		Biohazard info:		Custody Seal intact? Yes No N/A	
ORDER NO:				Free ice / frozen ice bricks present upon receipt? Yes No N/A	
PROJECT MANAGER: Jessica Holan		CONTACT PH: 0418 690 804		Random Sample Temperature on Receipt: °C	
PRIMARY SAMPLER: Jessica Holan		SAMPLER MOBILE: 0418 690 804		Other comments:	
EMAIL REPORTS TO: jholan@pittsh.com.au		QUOTE NO: ME-769-21			
EMAIL INVOICES TO: cclark@pittsh.com.au		/ EM2021PITSHE0020			
044 13	TP03-2	SOILS SOIL	Soil	- S-26 8 metals/TRH/BTEXN/PAH - EP075-TAS Benzo(a)pyrene - Waste Classification (TAS requirements)	
015 14	TP03-3_1.40-1.60	SOILS SOIL	Soil	- S-26 8 metals/TRH/BTEXN/PAH - EP075-TAS Benzo(a)pyrene - Waste Classification (TAS requirements)	
046 15	TP04-1_0.00-0.10	SOILS SOIL	Soil	- S-26 8 metals/TRH/BTEXN/PAH - EP075-TAS Benzo(a)pyrene - Waste Classification (TAS requirements)	
047 16	TP04-2_0.10-0.40	SOILS SOIL	Soil	- S-26 8 metals/TRH/BTEXN/PAH - EP075-TAS Benzo(a)pyrene - Waste Classification (TAS requirements)	
048 17	TP04-3_0.40-1.00	SOILS SOIL	Soil	- S-26 8 metals/TRH/BTEXN/PAH - EP075-TAS Benzo(a)pyrene - Waste Classification (TAS requirements)	
049 18	TP05-1_0.00-0.10	SOILS SOIL	Soil	- S-26 8 metals/TRH/BTEXN/PAH - EP075-TAS Benzo(a)pyrene - Waste Classification (TAS requirements)	
020 19	TP05-2_0.40-0.70	SOILS SOIL	Soil	- S-26 8 metals/TRH/BTEXN/PAH - EP075-TAS Benzo(a)pyrene - Waste Classification (TAS requirements)	
024 20	TP05-3_0.70-1.00	SOILS SOIL	Soil	- S-26 8 metals/TRH/BTEXN/PAH - EP075-TAS Benzo(a)pyrene - Waste Classification (TAS requirements)	
027 21	TP05-4_1.00-1.50	SOILS SOIL	Soil	- S-26 8 metals/TRH/BTEXN/PAH - EP075-TAS Benzo(a)pyrene - Waste Classification (TAS requirements)	
029 22	Trip blank	WATERS WATER	Water	- W-18 TRH(C6 - C9)/BTEXN	

 CHAIN OF CUSTODY COC#: 28634 ALS Laboratory: EM Melbourne		RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
		DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:
CLIENT: PITSHE - Pitt & Sherry (Operations) Pty Ltd PROJECT: 321-323A Elizabeth Street P.29.0421 SITE: Elizabeth street ORDER NO: PROJECT MANAGER: Jessica Holan PRIMARY SAMPLER: Jessica Holan EMAIL REPORTS TO: jholan@pittsh.com.au EMAIL INVOICES TO: cclark@pittsh.com.au		TURNAROUND REQUIREMENTS : 5 Days Biohazard info:		LABORATORY USE ONLY (Circle) Custody Seal intact? Yes No N/A Free ice / frozen ice bricks present upon receipt? Yes No N/A Random Sample Temperature on Receipt: °C Other comments:	
CONTACT PH: 0418 690 804	SAMPLER MOBILE: 0418 690 804				
QUOTE NO: ME-769-21	/ EM2021PITSHE0020				

SAMPLE	SAMPLE NAME	BOTTLE NAME	VOLUME	BARCODE	TYPE	FILTERED	REASON
001	TP02-1_0.05-0.30	Sterile Plastic Jar ✓	250 mL	00230519004941	Black	No	
001	TP02-1_0.05-0.30	Soil Glass Jar - Unpreserved ✓	250 mL	00260121013648	Orange	No	
002	TP02-2_0.30-1.40	Soil Glass Jar - Unpreserved ✓	250 mL	00260121013674	Orange	No	
002	TP02-2_0.30-1.40	Sterile Plastic Jar ✓	250 mL	00230519004988	Black	No	
003	TP02-3_1.40-1.60	Soil Glass Jar - Unpreserved ✓	250 mL	00260121013520	Orange	No	
003	TP02-3_1.40-1.60	Sterile Plastic Jar ✓	250 mL	00230519002484	Black	No	
004	Triplicate 1	Soil Glass Jar - Unpreserved ✓	250 mL	00260121106869	Orange	No	
005	TRiplicate 2	Soil Glass Jar - Unpreserved ✓ + BAG	250 mL	00260121013729	Orange	No	
006	TP06-1	Soil Glass Jar - Unpreserved ✓	250 mL	00260121013720	Orange	No	
007	TP06-2	Soil Glass Jar - Unpreserved ✓	250 mL	00261020099597	Orange	No	
008	TP06-3	Soil Glass Jar - Unpreserved ✓	250 mL	00260121013744	Orange	No	
009	TP01-1	Soil Glass Jar - Unpreserved ✓	250 mL	00261020099600	Orange	No	
010	TP01-2	Soil Glass Jar - Unpreserved ✓	250 mL	00261020099599	Orange	No	
010	TP01-2	Sterile Plastic Jar ✓ + BAG	250 mL	00230519004974	Black	No	
011	TP01-3	Sterile Plastic Jar ✓	250 mL	00230519005004	Black	No	
011	TP01-3	Soil Glass Jar - Unpreserved ✓	250 mL	00260121106938	Orange	No	
012	TP01-4	Sterile Plastic Jar ✓	250 mL	00230519004996	Black	No	
012	TP01-4	Soil Glass Jar - Unpreserved ✓	250 mL	00260121106759	Orange	No	
013	TP03-1_0.00-0.20	Soil Glass Jar - Unpreserved ✓	250 mL	00260121013735	Orange	No	
014	TP03-2	Soil Glass Jar - Unpreserved ✓	250 mL	00261020099574	Orange	No	
015	TP03-3_1.40-1.60	Soil Glass Jar - Unpreserved ✓	250 mL	00260121013728	Orange	No	
016	TP04-1_0.00-0.10	Soil Glass Jar - Unpreserved ✓	250 mL	00260121013512	Orange	No	
017	TP04-2_0.10-0.40	Soil Glass Jar - Unpreserved ✓	250 mL	00260121013523	Orange	No	
018	TP04-3_0.40-1.00	Soil Glass Jar - Unpreserved ✓	250 mL	00260121013708	Orange	No	
019	TP05-1_0.00-0.10	Soil Glass Jar - Unpreserved ✓	250 mL	00260121013678	Orange	No	
020	TP05-2_0.40-0.70	Soil Glass Jar - Unpreserved ✓	250 mL	00260321071549	Orange	No	

CHAIN OF CUSTODY ALS COC#: 28634 ALS Laboratory: EM Melbourne		RELINQUISHED BY:		RECEIVED BY:		RELINQUISHED BY:		RECEIVED BY:	
CLIENT: PITSHE - Pitt & Sherry (Operations) Pty Ltd		DATE TIME:		DATE TIME:		DATE TIME:		DATE TIME:	
PROJECT: 321-323A Elizabeth Street P.29.0421		TURNAROUND REQUIREMENTS : 5 Days Biohazard info:		LABORATORY USE ONLY (Circle)					
SITE: Elizabeth street				Custody Seal intact? Yes No N/A					
ORDER NO:				Free ice / frozen ice bricks present upon receipt? Yes No N/A					
PROJECT MANAGER: Jessica Holan		CONTACT PH: 0418 690 804		SAMPLER MOBILE: 0418 690 804		Random Sample Temperature on Receipt: °C			
PRIMARY SAMPLER: Jessica Holan		QUOTE NO: ME-769-21		/ EM2021PITSHE0020		Other comments:			
EMAIL REPORTS TO: jholan@pittsh.com.au									
EMAIL INVOICES TO: cclark@pittsh.com.au									
021	TP05-3_0.70-1.00	Soil Glass Jar - Unpreserved	✓	250 mL	00260121013654	Orange	No		
022	TP05-4_1.00-1.50	Soil Glass Jar - Unpreserved	✓	250 mL	00260121013485	Orange	No		
023	Trip blank	Amber VOC Vial - Sulfuric Acid	X2 ✓	40 mL	00160621002679	Purple	No		
Total Bottle Count: ALS: 29, Non ALS: 2									

 CHAIN OF CUSTODY ALS Laboratory please tick →		QADELAIDE 21 Burke Road Pooraka SA 5095 Ph: 08 8359 0890 E: adelaide@alsglobal.com QBRISBANE 32 Shand Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com QGLADSTONE 46 Callimondah Drive Clinton QLD 4680 Ph: 07 7471 5600 E: gladstone@alsglobal.com		QMACKAY 76 Harbour Road Mackay QLD 4740 Ph: 07 4944 0177 E: mackay@alsglobal.com QMELBOURNE 2-4 Westall Road Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsglobal.com QMUDGEE 27 Sydney Road Mudgee NSW 2850 Ph: 02 6372 6735 E: mudgee.mel@alsglobal.com		QNEWCASTLE 5 Ross Gum Road Warabrook NSW 2304 Ph: 02 4968 9433 E: samples.newcastle@alsglobal.com QNOWRA 4/13 Casey Place North Nowra NSW 2541 Ph: 024423 2063 E: nowra@alsglobal.com QPERTH 10 Hed Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com		QSYDNEY 277-280 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 6555 E: samples.sydney@alsglobal.com QTOWNSVILLE 14-16 Desma Court Bohle QLD 4818 Ph: 07 4756 0600 E: townsville.environmental@alsglobal.com QWOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: wollongong@alsglobal.com	
CLIENT: Pitt & Sherry		TURNAROUND REQUIREMENTS: <input checked="" type="checkbox"/> Standard TAT (List due date):				FOR LABORATORY USE ONLY (Circle)			
OFFICE:		(Standard TAT may be longer for some tests e.g. Ultra Trace Organics) <input type="checkbox"/> Non Standard or urgent TAT (List due date):				Custody			
PROJECT: P.19.0421.008		ALS QUOTE NO.: EN/222/20		COC SEQUENCE NUMBER (Circle)		Free Line			
ORDER NUMBER:				COC: 1 2 3 4 5 6 7		Random			
PROJECT MANAGER: Carly Clark		CONTACT PH: 0490942344		OF: 1 2 3 4 5 6 7		On Receipt			
SAMPLER: Jess Holan		SAMPLER MOBILE: 0490 942 346		RELINQUISHED BY: Jess Holan		RECEIVED BY:			
COC emailed to ALS? YES		EDD FORMAT (or default):		DATE/TIME: 4/10/21		DATE/TIME:			
Email Reports to (will default to PM if no other addresses are listed): cclark@pittsh.com.au				DATE/TIME:		DATE/TIME:			
Email Invoice to (will default to PM if no other addresses are listed): cclark@pittsh.com.au				DATE/TIME:		DATE/TIME:			
COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:									
ALS USE	SAMPLE IDENTIFICATION MATRIX: SOLID(S)/WATER (W)			CONTAINER INFORMATION			ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).		
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE codes below)	(refer to)	TOTAL CONTAINERS	Additional Information		
1	SW1	4/10/21 10:05am	water			4	Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc. Environmental Division Melbourne Work Order Reference EM2119702  Telephone : + 61-3-8549 9600		
						Received: <i>Albert - 6/10/21 - 10:20</i> C/note: <i>884376</i> Temp: <i>27</i> °C Seal: <i>YDN</i> (ice) Icebricks / NA			
						FREIGHT			
						TOTAL			

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic
 V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass;
 Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

CHAIN OF CUSTODY RECORD											
Company		Pitt and Sherry		Project No		P.19.0421		Project Manager		Carly Clark	
Address		199 Macquarie Street Hobart		Project Name		321-323A Elizabeth Street		EDD Format		ES99L, EQ91S etc	
Contact Name		Jessica Holan		Email for Invoice		Cclark@pittsh.com.au		Email for Results		Cclark@pittsh.com.au	
Phone No		0490 942 346		Containers		Change container type & size if necessary		Required Turnaround Time (TAT)		Default will be 5 days if not ticked	
Special Directions				500mL Plastic		250mL Plastic		60mL Plastic		100mL Amber Glass	
Purchase Order		P.19.0421		40mL VOA Vial		500mL PFAS Bottle		Jar (Glass or HDPE)		Other (Asbestos AS4884, WA Guidelines)	
Quote ID No				<input type="checkbox"/> Overnight (reporting by 9am) ♦ <input type="checkbox"/> Same day ♦ <input type="checkbox"/> 1 day ♦ <input type="checkbox"/> 2 days ♦ <input checked="" type="checkbox"/> 3 <input checked="" type="checkbox"/> 5 days (Standard) Other()							
Matrix		Solid (S) Water (W)		Sample Comments		Dangerous Goods Hazard Warning					
No	Client Sample ID	Sampled Date/Time	Matrix	UHS Low level BaP	TRH/STEXNP/U-phenols	8 Metals					
11	Tiplicate 2	12/10/21	S	X	X	X					
12											
13											
14											
15											
16											
17											
18											
19											
20											
Total Counts				1	1	1					
Method of Shipment		<input checked="" type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Time	
Laboratory Use Only		Received By		SYD BNE MEL PER ADL NTL DRW		Signature		Date		Time	
		Received By		SYD BNE MEL PER ADL NTL DRW		Signature		Date		Time	
										Report No	

Eurofins Environment Testing Australia Pty Ltd

Submission of samples to the laboratory will be deemed to acceptance of Eurofins Environment Testing Standard Terms and Conditions unless agreed otherwise. A copy is available on request.

10/14/2021

Mail - #AU_CAU001_EnviroSampleVic - Outlook

COC for samples arriving within the next few days

Jess Holan <JHolan@pittsh.com.au>

Thu 14/10/2021 10:12 AM

To: Michael Morrison <MichaelMorrison@eurofins.com>; #AU_CAU001_EnviroSampleVic
<EnviroSampleVic@eurofins.com>

EXTERNAL EMAIL*

Hi Michael,

Attached are some COCs for two separate projects. The samples should be coming over the next few days.

Thanks, Jess

pitt&sherry

|

Jessica Holan

Environmental Scientist

BMarSc(Hons) PhD

Direct +61 3 6210 1463 | Mobile +61490 942 346 | jholan@pittsh.com.au


Note: I work Monday-Thursday

Hobart Office — Level 1, Surrey House, 199 Macquarie Street

PO Box 94 Hobart Tasmania 7001 | Phone +61 3 6210 1400

pittsh.com.au

* WARNING - EXTERNAL: This email originated from outside of Eurofins. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

CHAIN OF CUSTODY							RELINQUISHED BY:		RECEIVED BY:		RELINQUISHED BY:		RECEIVED BY:	
 COC#: 28634 ALS Laboratory: EM Melbourne							DATE TIME: <i>13/10</i>		DATE TIME:		DATE TIME:		DATE TIME: <i>(5)</i>	
CLIENT: PITSHE - Pitt & Sherry (Operations) Pty Ltd PROJECT: 321-323A Elizabeth Street P.29.0421 SITE: Elizabeth street ORDER NO: PROJECT MANAGER: Jessica Holan PRIMARY SAMPLER: Jessica Holan EMAIL REPORTS TO: jholan@pittsh.com.au EMAIL INVOICES TO: cclark@pittsh.com.au							TURNAROUND REQUIREMENTS : 5 Days Biohazard info:		LABORATORY USE ONLY (Circle) Custody Seal intact? Yes No N/A Free ice / frozen ice bricks present upon receipt? Yes No N/A Random Sample Temperature on Receipt: °C Other comments:					
CONTACT PH: 0418 690 804 SAMPLER MOBILE: 0418 690 804 QUOTE NO: ME-769-21 / EM2021PITSHE0020														
SAMPLE DETAILS							ANALYSIS REQUIRED							
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	SOILS SOIL	WATERS WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION				
001	TP02-1_0.05-0.30		12/10/2021 10:18 AM	Soil	ALS: 2 Non ALS: 0	No	Partial 3/6							
002	TP02-2_0.30-1.40		12/10/2021 10:19 AM	Soil	ALS: 2 Non ALS: 0	No	Partial 3/6							
003	TP02-3_1.40-1.60		12/10/2021 10:20 AM	Soil	ALS: 2 Non ALS: 0	No	Partial 3/6							
004	Triplicate 1		12/10/2021 10:21 AM	Soil	ALS: 1 Non ALS: 0	No	Partial 2/6							
005	Triplicate 2	Please transfer to eurofins	12/10/2021 10:23 AM	Soil	ALS: 1 Non ALS: 0	No	Partial 2/6		Please transfer to eurofins	Please transfer to eurofins				
006	TP06-1		12/10/2021 10:26 AM	Soil	ALS: 1 Non ALS: 1	No	Partial 3/6			Please test bag for NEPM soil characteristics				
007	TP06-2		12/10/2021 10:27 AM	Soil	ALS: 1 Non ALS: 0	No	Partial 2/6							
008	TP06-3		12/10/2021 10:27 AM	Soil	ALS: 1 Non ALS: 0	No	Partial 2/6							
009	TP01-1		12/10/2021 10:32 AM	Soil	ALS: 1 Non ALS: 0	No	Partial 2/6							


23

CT 14/10/21 - 9am
 ICE
 2-1
 10-5
 2-6
 Courier


FREIGHT

- 13/10/21 - 10.10

Received: *Advent M*
 C/note: *10.6°C* Seal: *ON*
 Ice / Icebricks *NA*
Melted



Carrier: *-TASFAST*

CHAIN OF CUSTODY		RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
 COC#: 28634 <i>ALS Laboratory: EM Melbourne</i>		RELINQUISHED BY: <i>JW of AS</i> DATE TIME: <i>13/10</i>	RECEIVED BY: DATE TIME:	RELINQUISHED BY: DATE TIME:	RECEIVED BY: <i>5</i> DATE TIME:
CLIENT: PITSHE - Pitt & Sherry (Operations) Pty Ltd PROJECT: 321-323A Elizabeth Street P.29.0421 SITE: Elizabeth street ORDER NO: PROJECT MANAGER: Jessica Holan PRIMARY SAMPLER: Jessica Holan EMAIL REPORTS TO: jholan@pittsh.com.au EMAIL INVOICES TO: cclark@pittsh.com.au		TURNAROUND REQUIREMENTS : 5 Days Biohazard info:		LABORATORY USE ONLY (Circle) Custody Seal intact? Yes No N/A Free ice / frozen ice bricks present upon receipt? Yes No N/A Random Sample Temperature on Receipt: °C Other comments:	
CONTACT PH: 0418 690 804 SAMPLER MOBILE: 0418 690 804 QUOTE NO: ME-769-21 / EM2021PITSHE0020					

SAMPLE	SAMPLE NAME	PARTIAL ANALYSIS GROUP NAME	MATRIX	SELECTED ANALYSIS NAME
001	TP02-1_0.05-0.30	SOILS SOIL	Soil	- S-26 8 metals/TRH/BTEXN/PAH - EP075-TAS Benzo(a)pyrene - Waste Classification (TAS requirements) - MM804 Thermotolerant Coliforms & E.coli by MPN
002	TP02-2_0.30-1.40	SOILS SOIL	Soil	- S-26 8 metals/TRH/BTEXN/PAH - EP075-TAS Benzo(a)pyrene - Waste Classification (TAS requirements) - MM804 Thermotolerant Coliforms & E.coli by MPN
003	TP02-3_1.40-1.60	SOILS SOIL	Soil	- S-26 8 metals/TRH/BTEXN/PAH - EP075-TAS Benzo(a)pyrene - Waste Classification (TAS requirements) - MM804 Thermotolerant Coliforms & E.coli by MPN
004	Triplicate	SOILS SOIL	Soil	- S-26 8 metals/TRH/BTEXN/PAH - EP075-TAS Benzo(a)pyrene - Waste Classification (TAS requirements)
005	Triplicate 2	SOILS SOIL	Soil	- S-26 8 metals/TRH/BTEXN/PAH - EP075-TAS Benzo(a)pyrene - Waste Classification (TAS requirements)
006	TP06-1	SOILS SOIL	Soil	- S-26 8 metals/TRH/BTEXN/PAH - EP075-TAS Benzo(a)pyrene - Waste Classification (TAS requirements) - P-22 (Melb) Soil Characterisation Package
007	TP06-2	SOILS SOIL	Soil	- S-26 8 metals/TRH/BTEXN/PAH - EP075-TAS Benzo(a)pyrene - Waste Classification (TAS requirements)
008	TP06-3	SOILS SOIL	Soil	- S-26 8 metals/TRH/BTEXN/PAH - EP075-TAS Benzo(a)pyrene - Waste Classification (TAS requirements)
009	TP01-1	SOILS SOIL	Soil	- S-26 8 metals/TRH/BTEXN/PAH - EP075-TAS Benzo(a)pyrene - Waste Classification (TAS requirements)
010	TP01-2	SOILS SOIL	Soil	- S-26 8 metals/TRH/BTEXN/PAH - EP075-TAS Benzo(a)pyrene - Waste Classification (TAS requirements) - MM804 Thermotolerant Coliforms & E.coli by MPN
011	TP01-3	SOILS SOIL	Soil	- S-26 8 metals/TRH/BTEXN/PAH - EP075-TAS Benzo(a)pyrene - Waste Classification (TAS requirements) - P-22 (Melb) Soil Characterisation Package - MM804 Thermotolerant Coliforms & E.coli by MPN
012	TP01-4	SOILS SOIL	Soil	- S-26 8 metals/TRH/BTEXN/PAH - EP075-TAS Benzo(a)pyrene - Waste Classification (TAS requirements) - MM804 Thermotolerant Coliforms & E.coli by MPN
013	TP03-1_3.30-3.20	SOILS SOIL	Soil	- S-26 8 metals/TRH/BTEXN/PAH - EP075-TAS Benzo(a)pyrene - Waste Classification (TAS requirements)



Laboratory Sample Receipt Notifications

Appendix M

pitt&sherry



Environmental

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : EM2119702

Client : Pitt & Sherry (Operations) Pty Ltd
 Contact : CARLY CLARK
 Address : PO BOX 94 199 MACQUARIE ST
 HOBART TAS, AUSTRALIA 7001

Laboratory : Environmental Division Melbourne
 Contact : Gregory Gommers
 Address : 4 Westall Rd Springvale VIC Australia
 3171

E-mail : cclark@pittsh.com.au
 Telephone : 03 9674 4163
 Facsimile : ----

E-mail : gregory.gommers@alsglobal.com
 Telephone : +61-3-8549 9600
 Facsimile : +61-3-8549 9626

Project : P.19.0421.008
 Order number : ----
 C-O-C number : ----
 Site : ----
 Sampler : JH

Page : 1 of 2
 Quote number : EM2017PITSHE0005 (EN/222)
 QC Level : NEPM 2013 B3 & ALS QC Standard

Dates

Date Samples Received : 06-Oct-2021 10:20
 Client Requested Due Date : 13-Oct-2021

Issue Date : 06-Oct-2021
 Scheduled Reporting Date : 13-Oct-2021

Delivery Details

Mode of Delivery : Carrier
 No. of coolers/boxes : 1
 Receipt Detail :

Security Seal : Intact.
 Temperature : 2.7°C - Ice present
 No. of samples received / analysed : 1 / 1

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- Please direct any queries related to sample condition / numbering / breakages to Client Services.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- Analytical work for this work order will be conducted at ALS Springvale.
- Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Issue Date : 06-Oct-2021
Page : 2 of 2
Work Order : EM2119702 Amendment 0
Client : Pitt & Sherry (Operations) Pty Ltd



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- No sample container / preservation non-compliance exists.

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component.

Matrix: WATER

Laboratory sample ID	Sampling date / time	Sample ID	Water Tribute
EM2119702-001	04-Oct-2021 10:05	SW1	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ALL ACCOUNTS

- A4 - AU Tax Invoice (INV)

Email accounts@pittsh.com.au

CARLY CLARK

- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- A4 - AU Tax Invoice (INV)
- Chain of Custody (CoC) (COC)
- EDI Format - ENMRG (ENMRG)
- EDI Format - ESDAT (ESDAT)
- Purchase Order Request Letter (PO Request)

[illegible]



Environmental

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : EM2120163

Client : Pitt & Sherry (Operations) Pty Ltd
 Contact : Jessica Holan
 Address :

Laboratory : Environmental Division Melbourne
 Contact : Gregory Gommers
 Address : 4 Westall Rd Springvale VIC Australia 3171

E-mail : jholan@pittsh.com.au
 Telephone : 03 6210 1463
 Facsimile : ----

E-mail : gregory.gommers@alsglobal.com
 Telephone : +61-3-8549 9600
 Facsimile : +61-3-8549 9626

Project : 321-323A Elizabeth Street P.29.0421
 Order number : ----
 C-O-C number : 28634
 Site : ----
 Sampler : JH

Page : 1 of 3
 Quote number : EM2021PITSHE0020 (ME-769-21)
 QC Level : NEPM 2013 B3 & ALS QC Standard

Dates

Date Samples Received : 13-Oct-2021 10:10
 Client Requested Due Date : 20-Oct-2021

Issue Date : 19-Oct-2021
 Scheduled Reporting Date : 20-Oct-2021

Delivery Details

Mode of Delivery : Carrier
 No. of coolers/boxes : 1
 Receipt Detail :

Security Seal : Intact.
 Temperature : 10.6°C - Ice present
 No. of samples received / analysed : 22 / 22

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Issue Date : 19-Oct-2021
 Page : 2 of 3
 Work Order : EM2120163 Amendment 0
 Client : Pitt & Sherry (Operations) Pty Ltd



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- No sample container / preservation non-compliance exists.

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: SOIL

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - EP075-TAS Benzodipylene - Waste Classification (TAS)	SOIL - MM869 Coliforms, Thermotolerant Coliforms & E.coli by	SOIL - P-22 (Melb) Soil Characterisation Package	SOIL - S-28 8 metals/TRHBTX/MPAH
EM2120163-001	12-Oct-2021 00:00	TP02-1	✓	✓	✓	✓	✓
EM2120163-002	12-Oct-2021 00:00	TP02-2	✓	✓	✓	✓	✓
EM2120163-003	12-Oct-2021 00:00	TP02-3	✓	✓	✓	✓	✓
EM2120163-004	12-Oct-2021 00:00	Triplicate 1	✓	✓	✓	✓	✓
EM2120163-005	12-Oct-2021 00:00	TP06-1	✓	✓	✓	✓	✓
EM2120163-006	12-Oct-2021 00:00	TP06-2	✓	✓	✓	✓	✓
EM2120163-007	12-Oct-2021 00:00	TP06-3	✓	✓	✓	✓	✓
EM2120163-008	12-Oct-2021 00:00	TP01-1	✓	✓	✓	✓	✓
EM2120163-009	12-Oct-2021 00:00	TP01-2	✓	✓	✓	✓	✓
EM2120163-010	12-Oct-2021 00:00	TP01-3	✓	✓	✓	✓	✓
EM2120163-011	12-Oct-2021 00:00	TP01-4	✓	✓	✓	✓	✓
EM2120163-012	12-Oct-2021 00:00	TP03-3_0.00-0.20	✓	✓	✓	✓	✓
EM2120163-013	12-Oct-2021 00:00	TP03-2	✓	✓	✓	✓	✓
EM2120163-014	12-Oct-2021 00:00	TP03-3_1.40-1.60	✓	✓	✓	✓	✓
EM2120163-015	12-Oct-2021 00:00	TP04-2-1_0.0-0.10	✓	✓	✓	✓	✓
EM2120163-016	12-Oct-2021 00:00	TP04-2_0.10-0.40	✓	✓	✓	✓	✓
EM2120163-017	12-Oct-2021 00:00	TP04-3_0.40-1.0	✓	✓	✓	✓	✓
EM2120163-018	12-Oct-2021 00:00	TP05-1-0.00-0.10	✓	✓	✓	✓	✓
EM2120163-019	12-Oct-2021 00:00	TP05-2-0.40-0.70	✓	✓	✓	✓	✓
EM2120163-020	12-Oct-2021 00:00	TP05-3-0.70-1.00	✓	✓	✓	✓	✓
EM2120163-021	12-Oct-2021 00:00	TP05-4-1.00-1.50	✓	✓	✓	✓	✓



Issue Date : 19-Oct-2021
Page : 3 of 3
Work Order : EM2120163 Amendment 0
Client : Pitt & Sherry (Operations) Pty Ltd

Matrix: WATER

Laboratory sample ID	Sampling date / time	Sample ID	Water IR/C6
EM2120163-022	13-Oct-2021 00:00	Trip balnk	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ALL ACCOUNTS

- A4 - AU Tax Invoice (INV)

Email accounts@pittsh.com.au

CARLY CLARK

- A4 - AU Tax Invoice (INV)

Email cclark@pittsh.com.au

Jessica Holan

- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- A4 - AU Tax Invoice (INV)
- Attachment - Report (SUBCO)
- Chain of Custody (CoC) (COC)
- EDI Format - ESDAT (ESDAT)
- EDI Format - XTab (XTAB)

[illegible]



Environment Testing

www.eurofins.com.au

EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261 Site # 1254

Sydney
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Lane Cove West NSW 2066
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NATA # 1261 Site # 18217

Brisbane
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Murarrie QLD 4172
Phone : +61 7 3602 4600
NATA # 1261 Site # 20794

Newcastle
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Mayfield East NSW 2304
PO Box 60 Wickham 2263
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

Eurofins ARL Pty Ltd

ABN: 91 05 0159 898

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NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited

NZBN: 9429046024954

Auckland
35 O'Rourke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Sample Receipt Advice

Company name: Pitt & Sherry (Operations) Pty Ltd
Contact name: Carly Clark
Project name: 321-323A ELIZABET STREET
Project ID: P.19.0421
Turnaround time: 5 Day
Date/Time received: Oct 14, 2021 10:12 AM
Eurofins reference: 832237

Sample Information

- ☐ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ☐ All samples have been received as described on the above COC.
- ☐ COC has been completed correctly.
- ☐ Attempt to chill was evident.
- ☐ Appropriately preserved sample containers have been used.
- ☐ All samples were received in good condition.
- ☐ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ☐ Appropriate sample containers have been used.
- ☐ Sample containers for volatile analysis received with zero headspace.
- ☐ Split sample sent to requested external lab.
- ☐ Some samples have been subcontracted.
- ☒ **N/A** Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Michael Morrison on phone : 03 8564 5933 or by email: MichaelMorrison@eurofins.com

Results will be delivered electronically via email to Carly Clark - CClark@pittsh.com.au.

Note: A copy of these results will also be delivered to the general Pitt & Sherry (Operations) Pty Ltd email address.

Global Leader - Results you can trust



Summary of Analytical Results

Appendix N

pitt&sherry

2019-2020		2020-2021	2021-2022	2022-2023	2023-2024	2024-2025	2025-2026	2026-2027	2027-2028	2028-2029	2029-2030	2030-2031	2031-2032	2032-2033	2033-2034	2034-2035	2035-2036	2036-2037	2037-2038	2038-2039	2039-2040	2040-2041	2041-2042	2042-2043	2043-2044	2044-2045	2045-2046	2046-2047	2047-2048	2048-2049	2049-2050	2050-2051	2051-2052	2052-2053	2053-2054	2054-2055	2055-2056	2056-2057	2057-2058	2058-2059	2059-2060	2060-2061	2061-2062	2062-2063	2063-2064	2064-2065	2065-2066	2066-2067	2067-2068	2068-2069	2069-2070	2070-2071	2071-2072	2072-2073	2073-2074	2074-2075	2075-2076	2076-2077	2077-2078	2078-2079	2079-2080	2080-2081	2081-2082	2082-2083	2083-2084	2084-2085	2085-2086	2086-2087	2087-2088	2088-2089	2089-2090	2090-2091	2091-2092	2092-2093	2093-2094	2094-2095	2095-2096	2096-2097	2097-2098	2098-2099	2099-2100	2100-2101	2101-2102	2102-2103	2103-2104	2104-2105	2105-2106	2106-2107	2107-2108	2108-2109	2109-2110	2110-2111	2111-2112	2112-2113	2113-2114	2114-2115	2115-2116	2116-2117	2117-2118	2118-2119	2119-2120	2120-2121	2121-2122	2122-2123	2123-2124	2124-2125	2125-2126	2126-2127	2127-2128	2128-2129	2129-2130	2130-2131	2131-2132	2132-2133	2133-2134	2134-2135	2135-2136	2136-2137	2137-2138	2138-2139	2139-2140	2140-2141	2141-2142	2142-2143	2143-2144	2144-2145	2145-2146	2146-2147	2147-2148	2148-2149	2149-2150	2150-2151	2151-2152	2152-2153	2153-2154	2154-2155	2155-2156	2156-2157	2157-2158	2158-2159	2159-2160	2160-2161	2161-2162	2162-2163	2163-2164	2164-2165	2165-2166	2166-2167	2167-2168	2168-2169	2169-2170	2170-2171	2171-2172	2172-2173	2173-2174	2174-2175	2175-2176	2176-2177	2177-2178	2178-2179	2179-2180	2180-2181	2181-2182	2182-2183	2183-2184	2184-2185	2185-2186	2186-2187	2187-2188	2188-2189	2189-2190	2190-2191	2191-2192	2192-2193	2193-2194	2194-2195	2195-2196	2196-2197	2197-2198	2198-2199	2199-2200	2200-2201	2201-2202	2202-2203	2203-2204	2204-2205	2205-2206	2206-2207	2207-2208	2208-2209	2209-2210	2210-2211	2211-2212	2212-2213	2213-2214	2214-2215	2215-2216	2216-2217	2217-2218	2218-2219	2219-2220	2220-2221	2221-2222	2222-2223	2223-2224	2224-2225	2225-2226	2226-2227	2227-2228	2228-2229	2229-2230	2230-2231	2231-2232	2232-2233	2233-2234	2234-2235	2235-2236	2236-2237	2237-2238	2238-2239	2239-2240	2240-2241	2241-2242	2242-2243	2243-2244	2244-2245	2245-2246	2246-2247	2247-2248	2248-2249	2249-2250	2250-2251	2251-2252	2252-2253	2253-2254	2254-2255	2255-2256	2256-2257	2257-2258	2258-2259	2259-2260	2260-2261	2261-2262	2262-2263	2263-2264	2264-2265	2265-2266	2266-2267	2267-2268	2268-2269	2269-2270	2270-2271	2271-2272	2272-2273	2273-2274	2274-2275	2275-2276	2276-2277	2277-2278	2278-2279	2279-2280	2280-2281	2281-2282	2282-2283	2283-2284	2284-2285	2285-2286	2286-2287	2287-2288	2288-2289	2289-2290	2290-2291
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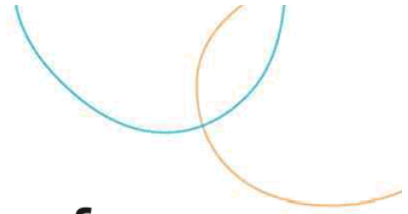
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Laboratory Certificates of Analysis



Appendix O

pitt&sherry



CERTIFICATE OF ANALYSIS

Work Order	: EM2119702	Page	: 1 of 5
Client	: Pitt & Sherry (Operations) Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: CARLY CLARK	Contact	: Gregory Gommers
Address	: PO BOX 94 199 MACQUARIE ST HOBART TAS, AUSTRALIA 7001	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: 03 9674 4163	Telephone	: +61-3-8549 9600
Project	: P.19.0421.008	Date Samples Received	: 06-Oct-2021 10:20
Order number	: ----	Date Analysis Commenced	: 07-Oct-2021
C-O-C number	: ----	Issue Date	: 08-Oct-2021 17:31
Sampler	: JH		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 1		
No. of samples analysed	: 1		



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC

Page : 2 of 5
Work Order : EM2119702
Client : Pitt & Sherry (Operations) Pty Ltd
Project : P.19.0421.008



General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1,2,3-cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.

Page : 3 of 5
Work Order : EM2119702
Client : Pitt & Sherry (Operations) Pty Ltd
Project : P.19.0421.008



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	SW1	----	----	----	----
Sampling date / time					04-Oct-2021 10:05	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2119702-001	-----	-----	-----	-----	-----
Result				----	----	----	----	----	----
EG020F: Dissolved Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L	<0.001	----	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	----	----	----	----	----
Copper	7440-50-8	0.001	mg/L	0.006	----	----	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	0.003	----	----	----	----	----
Zinc	7440-66-6	0.005	mg/L	0.054	----	----	----	----	----
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L	<1.0	----	----	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	----	----	----	----	----
Acenaphthene	83-32-9	1.0	µg/L	<1.0	----	----	----	----	----
Fluorene	86-73-7	1.0	µg/L	<1.0	----	----	----	----	----
Phenanthrene	85-01-8	1.0	µg/L	<1.0	----	----	----	----	----
Anthracene	120-12-7	1.0	µg/L	<1.0	----	----	----	----	----
Fluoranthene	206-44-0	1.0	µg/L	<1.0	----	----	----	----	----
Pyrene	129-00-0	1.0	µg/L	<1.0	----	----	----	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	----	----	----	----	----
Chrysene	218-01-9	1.0	µg/L	<1.0	----	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	<1.0	----	----	----	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	----	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	----	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	----	----	----	----	----
Dibenz(a,h)anthracene	53-70-3	1.0	µg/L	<1.0	----	----	----	----	----
Benzo(g,h,i)perylene	191-24-2	1.0	µg/L	<1.0	----	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	----	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	----	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L	<20	----	----	----	----	----
C10 - C14 Fraction	----	50	µg/L	<50	----	----	----	----	----
C15 - C28 Fraction	----	100	µg/L	<100	----	----	----	----	----
C29 - C36 Fraction	----	50	µg/L	<50	----	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	----	----	----	----	----

Page : 4 of 5
Work Order : EM2119702
Client : Pitt & Sherry (Operations) Pty Ltd
Project : P.19.0421.008



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	SW1	----	----	----	----
Sampling date / time					04-Oct-2021 10:05	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2119702-001	-----	-----	-----	-----
				Result	---	---	---	---	---
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	----	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	----	----	----	----
>C10 - C16 Fraction	----	100	µg/L		<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	----	----	----	----
Toluene	108-88-3	2	µg/L		<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	----	----	----	----
^ Total Xylenes	----	2	µg/L		<2	----	----	----	----
^ Sum of BTEX	----	1	µg/L		<1	----	----	----	----
Naphthalene	91-20-3	5	µg/L		<5	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		16.5	----	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%		45.8	----	----	----	----
2,4,6-Tribromophenol	118-79-6	1.0	%		47.0	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		60.6	----	----	----	----
Anthracene-d10	1719-06-8	1.0	%		60.0	----	----	----	----
4-Terphenyl-d14	1718-51-0	1.0	%		56.0	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	2	%		99.3	----	----	----	----
Toluene-D8	2037-26-5	2	%		99.0	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		109	----	----	----	----

Page : 5 of 5
Work Order : EM2119702
Client : Pitt & Sherry (Operations) Pty Ltd
Project : P.19.0421.008



Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	51
2-Chlorophenol-D4	93951-73-6	30	114
2,4,6-Tribromophenol	118-79-6	26	133
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	35	127
Anthracene-d10	1719-06-8	44	122
4-Terphenyl-d14	1718-51-0	44	124
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129



CERTIFICATE OF ANALYSIS

Work Order : **EM2120163**
Client : **Pitt & Sherry (Operations) Pty Ltd**
Contact : Jessica Holan
Address :
Telephone : 03 6210 1463
Project : 321-323A Elizabeth Street P.29.0421
Order number : ----
C-O-C number : 28634
Sampler : JH
Site : ----
Quote number : ME-769-21
No. of samples received : 22
No. of samples analysed : 22

Page : 1 of 19
Laboratory : Environmental Division Melbourne
Contact : Gregory Gommers
Address : 4 Westall Rd Springvale VIC Australia 3171
Telephone : +61-3-8549 9600
Date Samples Received : 13-Oct-2021 10:10
Date Analysis Commenced : 13-Oct-2021
Issue Date : 20-Oct-2021 17:17



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Aleksandar Vujkovic	Laboratory Technician	Newcastle - Inorganics, Mayfield West, NSW
Dilani Fernando	Laboratory Coordinator	Melbourne Inorganics, Springvale, VIC
Samantha Smith	Assistant Laboratory Manager	WRG Subcontracting, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC



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Work Order : EM2120163
Client : Pitt & Sherry (Operations) Pty Ltd
Project : 321-323A Elizabeth Street P.29.0421

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EA150H: Soil particle density results fell outside the scope of AS1289.3.6.3 for sample EM2120163-010. Results should be scrutinised accordingly.
- ALS is not NATA accredited for the analysis of Exchangeable Cations on Alkaline Soils when performed under ALS Method ED006.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1,2,3-cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- MM868 (Coliforms & E. coli in Soils by MPN using Aquachrom ECC) - Analysis is conducted by ALS Scoresby NATA accreditation no. 992, site no. 989.
- EP071: EM212062_008 Poor matrix spike recovery due to matrix effects.
- ED007 and ED008: When Exchangeable Al is reported from these methods, it should be noted that Rayment & Lyons (2011) suggests Exchange Acidity by 1M KCl - Method 15G1 (ED005) is a more suitable method for the determination of exchange acidity (H+ + Al3+).

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Work Order : EM2120163
Client : Pitt & Sherry (Operations) Pty Ltd
Project : 321-323A Elizabeth Street P.29.0421

Analytical Results

Sub-Matrix: SOIL
(Matrix: SOIL)

Sample ID

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP02-1	TP02-2	TP02-3	Triplicate 1	TP06-1
Sampling date / time				12-Oct-2021 00:00	12-Oct-2021 00:00	12-Oct-2021 00:00	12-Oct-2021 00:00	12-Oct-2021 00:00
Compound	CAS Number	LOR	Unit	EM2120163-001	EM2120163-002	EM2120163-003	EM2120163-004	EM2120163-005
				Result	Result	Result	Result	Result
EA001: pH in soil using 0.01M CaCl extract								
pH (CaCl2)	----	0.1	pH Unit	----	----	----	----	7.2
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	19.6	19.1	16.6	15.2	15.8
EA150: Soil Classification based on Particle Size								
Clay (<2 µm)	----	1	%	----	----	----	----	23
EA152: Soil Particle Density								
Soil Particle Density (Clay/Silt/Sand)	----	0.01	g/cm3	----	----	----	----	2.57
ED006: Exchangeable Cations on Alkaline Soils								
ø Exchangeable Calcium	----	0.2	meq/100g	----	----	----	----	16.6
ø Exchangeable Magnesium	----	0.2	meq/100g	----	----	----	----	2.1
ø Exchangeable Potassium	----	0.2	meq/100g	----	----	----	----	1.2
ø Exchangeable Sodium	----	0.2	meq/100g	----	----	----	----	0.3
ø Cation Exchange Capacity	----	0.2	meq/100g	----	----	----	----	20.2
ø Exchangeable Calcium Percent	----	0.2	%	----	----	----	----	82.3
ø Exchangeable Magnesium Percent	----	0.2	%	----	----	----	----	10.4
ø Exchangeable Potassium Percent	----	0.2	%	----	----	----	----	5.8
ø Exchangeable Sodium Percent	----	0.2	%	----	----	----	----	1.5
ø Calcium/Magnesium Ratio	----	0.2	-	----	----	----	----	7.9
ø Magnesium/Potassium Ratio	----	0.2	-	----	----	----	----	1.8
EG005(ED093)T: Total Metals by ICP-AES								
Iron	7439-89-6	0.005	%	----	----	----	----	2.10
Arsenic	7440-38-2	5	mg/kg	8	<5	12	<5	<5
Cadmium	7440-43-9	1	mg/kg	2	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	22	14	10	12	12
Copper	7440-50-8	5	mg/kg	121	15	10	61	56
Lead	7439-92-1	5	mg/kg	718	12	36	157	173
Nickel	7440-02-0	2	mg/kg	17	24	48	19	17
Zinc	7440-66-6	5	mg/kg	1060	32	84	203	210
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	0.5	<0.1	<0.1	0.6	0.8
EP004: Organic Matter								
Organic Matter	----	0.5	%	----	----	----	----	4.6
Total Organic Carbon	----	0.5	%	----	----	----	----	2.7
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								

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Work Order : EM2120163
Client : Pitt & Sherry (Operations) Pty Ltd
Project : 321-323A Elizabeth Street P.29.0421



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP02-1	TP02-2	TP02-3	Triplicate 1	TP06-1
Sampling date / time					12-Oct-2021 00:00	12-Oct-2021 00:00	12-Oct-2021 00:00	12-Oct-2021 00:00	12-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EM2120163-001	EM2120163-002	EM2120163-003	EM2120163-004	EM2120163-005
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		0.8	<0.5	<0.5	1.4	1.4
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		2.2	<0.5	<0.5	3.1	3.2
Pyrene	129-00-0	0.5	mg/kg		2.4	<0.5	<0.5	3.3	3.4
Benzo(a)anthracene	56-55-3	0.5	mg/kg		1.3	<0.5	<0.5	1.7	1.6
Chrysene	218-01-9	0.5	mg/kg		1.4	<0.5	<0.5	1.9	1.7
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		1.1	<0.5	<0.5	1.2	1.3
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		1.5	<0.5	<0.5	1.7	1.4
Benzo(a)pyrene	50-32-8	0.5	mg/kg		1.8	<0.5	<0.5	2.0	1.8
Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg		1.0	<0.5	<0.5	1.0	0.9
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg		1.2	<0.5	<0.5	1.2	1.1
[^] Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		14.7	<0.5	<0.5	18.5	17.8
[^] Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		2.3	<0.5	<0.5	2.6	2.3
[^] Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		2.6	0.6	0.6	2.8	2.6
[^] Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		2.8	1.2	1.2	3.1	2.8
EP075B: Polynuclear Aromatic Hydrocarbons									
Benzo(a)pyrene	50-32-8	0.05	mg/kg		1.68	<0.05	<0.05	5.72	1.89
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
[^] C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
[^] C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		120	<100	<100	<100	<100

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Work Order : EM2120163
Client : Pitt & Sherry (Operations) Pty Ltd
Project : 321-323A Elizabeth Street P.29.0421



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP02-1	TP02-2	TP02-3	Triplicate 1	TP06-1
Sampling date / time					12-Oct-2021 00:00	12-Oct-2021 00:00	12-Oct-2021 00:00	12-Oct-2021 00:00	12-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EM2120163-001	EM2120163-002	EM2120163-003	EM2120163-004	EM2120163-005
					Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		120	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
MM868: Coliforms & E.coli by MPN using Aquachrom ECC									
Total Coliforms by MPN	----	10	MPN/g		50	<12	<11	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		94.4	97.5	96.7	94.8	90.3
2-Chlorophenol-D4	93951-73-6	0.5	%		89.0	91.4	91.1	89.4	85.3
2,4,6-Tribromophenol	118-79-6	0.5	%		87.0	78.0	74.8	76.4	68.9
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		92.4	92.5	92.1	93.4	88.3
Anthracene-d10	1719-06-8	0.5	%		100	123	127	104	106
4-Terphenyl-d14	1718-51-0	0.5	%		106	120	116	108	104
EP075T: Base/Neutral Extractable Surrogates									
2-Fluorobiphenyl	321-60-8	0.025	%		118	107	108	97.4	93.3
Anthracene-d10	1719-06-8	0.025	%		117	106	107	95.0	92.8
4-Terphenyl-d14	1718-51-0	0.025	%		123	110	112	101	97.1
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		94.6	106	108	95.6	97.1
Toluene-D8	2037-26-5	0.2	%		64.7	82.5	91.7	72.9	79.8
4-Bromofluorobenzene	460-00-4	0.2	%		82.2	91.5	101	83.0	86.7

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Analytical Results

Sub-Matrix: SOIL
(Matrix: SOIL)

Sample ID

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP06-2	TP06-3	TP01-1	TP01-2	TP01-3
Sampling date / time			12-Oct-2021 00:00		12-Oct-2021 00:00		12-Oct-2021 00:00	
Compound	CAS Number	LOR	Unit	EM2120163-006	EM2120163-007	EM2120163-008	EM2120163-009	EM2120163-010
			Result	Result	Result	Result	Result	
EA001: pH in soil using 0.01M CaCl extract								
pH (CaCl2)	----	0.1	pH Unit	----	----	----	----	7.5
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	21.6	20.8	8.8	19.6	22.6
EA150: Soil Classification based on Particle Size								
Clay (<2 µm)	----	1	%	----	----	----	----	60
EA152: Soil Particle Density								
Soil Particle Density (Clay/Silt/Sand)	----	0.01	g/cm3	----	----	----	----	2.93
ED006: Exchangeable Cations on Alkaline Soils								
ø Exchangeable Calcium	----	0.2	meq/100g	----	----	----	----	8.2
ø Exchangeable Magnesium	----	0.2	meq/100g	----	----	----	----	10.9
ø Exchangeable Potassium	----	0.2	meq/100g	----	----	----	----	0.8
ø Exchangeable Sodium	----	0.2	meq/100g	----	----	----	----	2.0
ø Cation Exchange Capacity	----	0.2	meq/100g	----	----	----	----	21.9
ø Exchangeable Calcium Percent	----	0.2	%	----	----	----	----	37.3
ø Exchangeable Magnesium Percent	----	0.2	%	----	----	----	----	49.8
ø Exchangeable Potassium Percent	----	0.2	%	----	----	----	----	3.5
ø Exchangeable Sodium Percent	----	0.2	%	----	----	----	----	9.4
ø Calcium/Magnesium Ratio	----	0.2	-	----	----	----	----	0.7
ø Magnesium/Potassium Ratio	----	0.2	-	----	----	----	----	14.3
EG005(ED093)T: Total Metals by ICP-AES								
Iron	7439-89-6	0.005	%	----	----	----	----	3.46
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	<5	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	16	11	4	9	12
Copper	7440-50-8	5	mg/kg	9	<5	100	48	16
Lead	7439-92-1	5	mg/kg	8	12	64	176	10
Nickel	7440-02-0	2	mg/kg	13	24	17	11	16
Zinc	7440-66-6	5	mg/kg	19	27	186	168	31
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	0.7	<0.1
EP004: Organic Matter								
Organic Matter	----	0.5	%	----	----	----	----	<0.5
Total Organic Carbon	----	0.5	%	----	----	----	----	<0.5
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								

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Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP06-2	TP06-3	TP01-1	TP01-2	TP01-3
Sampling date / time					12-Oct-2021 00:00	12-Oct-2021 00:00	12-Oct-2021 00:00	12-Oct-2021 00:00	12-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EM2120163-006	EM2120163-007	EM2120163-008	EM2120163-009	EM2120163-010
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	0.7	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	2.3	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	2.5	<0.5
Benzo(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	1.4	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	1.6	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	1.1	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	1.4	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	1.7	<0.5
Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	0.8	<0.5
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	1.0	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	14.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	2.2	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		0.6	0.6	0.6	2.4	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		1.2	1.2	1.2	2.7	1.2
EP075B: Polynuclear Aromatic Hydrocarbons									
Benzo(a)pyrene	50-32-8	0.05	mg/kg		<0.05	<0.05	0.27	2.14	<0.05
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100

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Client : Pitt & Sherry (Operations) Pty Ltd
Project : 321-323A Elizabeth Street P.29.0421



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP06-2	TP06-3	TP01-1	TP01-2	TP01-3
Sampling date / time					12-Oct-2021 00:00	12-Oct-2021 00:00	12-Oct-2021 00:00	12-Oct-2021 00:00	12-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EM2120163-006	EM2120163-007	EM2120163-008	EM2120163-009	EM2120163-010
					Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
MM868: Coliforms & E.coli by MPN using Aquachrom ECC									
Total Coliforms by MPN	----	10	MPN/g		----	----	----	12	<13
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		94.1	93.1	95.7	94.0	94.1
2-Chlorophenol-D4	93951-73-6	0.5	%		89.6	88.3	90.9	89.1	89.0
2,4,6-Tribromophenol	118-79-6	0.5	%		66.1	61.7	74.4	71.0	63.4
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		90.1	88.5	91.4	92.1	88.4
Anthracene-d10	1719-06-8	0.5	%		127	124	111	114	120
4-Terphenyl-d14	1718-51-0	0.5	%		116	116	110	110	116
EP075T: Base/Neutral Extractable Surrogates									
2-Fluorobiphenyl	321-60-8	0.025	%		91.9	97.8	105	120	109
Anthracene-d10	1719-06-8	0.025	%		89.8	94.6	102	119	106
4-Terphenyl-d14	1718-51-0	0.025	%		93.0	98.5	108	124	111
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		110	106	88.4	92.5	96.4
Toluene-D8	2037-26-5	0.2	%		92.1	83.1	70.9	74.4	73.2
4-Bromofluorobenzene	460-00-4	0.2	%		108	98.2	80.8	85.3	86.6

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Work Order : EM2120163
Client : Pitt & Sherry (Operations) Pty Ltd
Project : 321-323A Elizabeth Street P.29.0421



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP01-4	TP03-3_0.00-0.20	TP03-2	TP03-3_1.40-1.60	TP04-2-1_0.0-0.10
Sampling date / time					12-Oct-2021 00:00	12-Oct-2021 00:00	12-Oct-2021 00:00	12-Oct-2021 00:00	12-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EM2120163-011	EM2120163-012	EM2120163-013	EM2120163-014	EM2120163-015
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		20.4	18.0	19.6	15.0	6.3
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		8	<5	9	14	<5
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		10	13	20	14	22
Copper	7440-50-8	5	mg/kg		10	57	10	8	37
Lead	7439-92-1	5	mg/kg		14	240	29	11	25
Nickel	7440-02-0	2	mg/kg		39	17	35	32	64
Zinc	7440-66-6	5	mg/kg		86	255	37	62	74
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	2.2	<0.1	<0.1	<0.1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	1.1	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	2.7	<0.5	<0.5	1.0
Pyrene	129-00-0	0.5	mg/kg		<0.5	2.8	<0.5	<0.5	1.1
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	1.4	<0.5	<0.5	0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	1.6	<0.5	<0.5	0.6
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	1.2	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	1.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	1.7	<0.5	<0.5	0.5
Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg		<0.5	0.9	<0.5	<0.5	<0.5
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg		<0.5	1.1	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	16.0	<0.5	<0.5	3.7
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	2.2	<0.5	<0.5	0.6
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		0.6	2.5	0.6	0.6	0.9
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		1.2	2.7	1.2	1.2	1.2
EP075B: Polynuclear Aromatic Hydrocarbons									
Benzo(a)pyrene	50-32-8	0.05	mg/kg		<0.05	4.26	<0.05	<0.05	0.17

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Project : 321-323A Elizabeth Street P.29.0421



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP01-4	TP03-3_0.00-0.20	TP03-2	TP03-3_1.40-1.60	TP04-2-1_0.0-0.10
Sampling date / time					12-Oct-2021 00:00	12-Oct-2021 00:00	12-Oct-2021 00:00	12-Oct-2021 00:00	12-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EM2120163-011	EM2120163-012	EM2120163-013	EM2120163-014	EM2120163-015
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
MM868: Coliforms & E.coli by MPN using Aquachrom ECC									
Total Coliforms by MPN	----	10	MPN/g		<12	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		92.2	93.0	92.4	94.1	89.7
2-Chlorophenol-D4	93951-73-6	0.5	%		87.4	87.9	88.1	89.1	85.2
2,4,6-Tribromophenol	118-79-6	0.5	%		61.1	71.4	61.0	55.6	67.5
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		86.8	90.1	88.6	90.1	85.9
Anthracene-d10	1719-06-8	0.5	%		123	109	117	117	112
4-Terphenyl-d14	1718-51-0	0.5	%		115	109	113	81.7	106

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Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP01-4	TP03-3_0.00-0.20	TP03-2	TP03-3_1.40-1.60	TP04-2-1_0.0-0.10
Sampling date / time					12-Oct-2021 00:00	12-Oct-2021 00:00	12-Oct-2021 00:00	12-Oct-2021 00:00	12-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EM2120163-011	EM2120163-012	EM2120163-013	EM2120163-014	EM2120163-015
				Result	Result	Result	Result	Result	Result
EP075T: Base/Neutral Extractable Surrogates									
2-Fluorobiphenyl	321-60-8	0.025	%		97.1	100	104	102	113
Anthracene-d10	1719-06-8	0.025	%		94.6	97.4	101	99.3	109
4-Terphenyl-d14	1718-51-0	0.025	%		99.7	104	108	105	116
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		95.3	98.7	110	97.2	114
Toluene-D8	2037-26-5	0.2	%		73.9	72.6	84.8	74.8	94.6
4-Bromofluorobenzene	460-00-4	0.2	%		81.4	82.4	95.0	88.9	106

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Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP04-2_0.10-0.40	TP04-3_0.40-1.0	TP05-1-0.00-0.10	TP05-2-0.40-0.70	TP05-3-0.70-1.00
Sampling date / time					12-Oct-2021 00:00	12-Oct-2021 00:00	12-Oct-2021 00:00	12-Oct-2021 00:00	12-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EM2120163-016	EM2120163-017	EM2120163-018	EM2120163-019	EM2120163-020
				Result	Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		17.9	19.4	4.3	15.2	17.7
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg	<5	5	<5	<5	<5	5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	7	16	29	8	15	
Copper	7440-50-8	5	mg/kg	23	11	24	33	10	
Lead	7439-92-1	5	mg/kg	112	12	18	100	10	
Nickel	7440-02-0	2	mg/kg	9	17	82	11	26	
Zinc	7440-66-6	5	mg/kg	37	37	63	69	35	
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg	0.4	<0.1	<0.1	0.9	<0.1	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	
Benzo(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	
Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	0.6	0.6	0.6	0.6	0.6	
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	1.2	1.2	1.2	
EP075B: Polynuclear Aromatic Hydrocarbons									
Benzo(a)pyrene	50-32-8	0.05	mg/kg	0.06	<0.05	0.38	0.40	<0.05	

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Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP04-2_0.10-0.40	TP04-3_0.40-1.0	TP05-1-0.00-0.10	TP05-2-0.40-0.70	TP05-3-0.70-1.00
Sampling date / time					12-Oct-2021 00:00	12-Oct-2021 00:00	12-Oct-2021 00:00	12-Oct-2021 00:00	12-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EM2120163-016	EM2120163-017	EM2120163-018	EM2120163-019	EM2120163-020
				Result	Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1	<1
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%	93.1	93.7	92.6	90.2	94.2	
2-Chlorophenol-D4	93951-73-6	0.5	%	88.3	89.0	88.0	86.2	89.6	
2,4,6-Tribromophenol	118-79-6	0.5	%	64.2	62.5	61.6	65.6	56.6	
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%	88.7	88.5	90.5	87.0	90.5	
Anthracene-d10	1719-06-8	0.5	%	108	128	111	109	125	
4-Terphenyl-d14	1718-51-0	0.5	%	110	113	110	107	121	
EP075T: Base/Neutral Extractable Surrogates									
2-Fluorobiphenyl	321-60-8	0.025	%	112	87.1	91.7	87.9	97.5	

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Work Order : EM2120163
Client : Pitt & Sherry (Operations) Pty Ltd
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Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP04-2_0.10-0.40	TP04-3_0.40-1.0	TP05-1-0.00-0.10	TP05-2-0.40-0.70	TP05-3-0.70-1.00
Sampling date / time					12-Oct-2021 00:00	12-Oct-2021 00:00	12-Oct-2021 00:00	12-Oct-2021 00:00	12-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EM2120163-016	EM2120163-017	EM2120163-018	EM2120163-019	EM2120163-020
				Result	Result	Result	Result	Result	Result
EP075T: Base/Neutral Extractable Surrogates - Continued									
Anthracene-d10	1719-06-8	0.025	%		108	84.5	89.0	85.1	95.4
4-Terphenyl-d14	1718-51-0	0.025	%		115	89.6	94.1	90.0	102
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		105	97.6	111	84.8	106
Toluene-D8	2037-26-5	0.2	%		79.4	68.9	83.1	64.3	78.5
4-Bromofluorobenzene	460-00-4	0.2	%		93.4	80.5	96.0	74.0	91.9

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Work Order : EM2120163
Client : Pitt & Sherry (Operations) Pty Ltd
Project : 321-323A Elizabeth Street P.29.0421



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Sample ID		TP05-4-1.00-1.50	----	----	----	----
		Sampling date / time		12-Oct-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2120163-021	-----	-----	-----	-----
Result				---	---	---	---	---
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	13.4	----	----	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	11	----	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg	11	----	----	----	----
Copper	7440-50-8	5	mg/kg	5	----	----	----	----
Lead	7439-92-1	5	mg/kg	14	----	----	----	----
Nickel	7440-02-0	2	mg/kg	36	----	----	----	----
Zinc	7440-66-6	5	mg/kg	54	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	----	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	----	----	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	----	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	----	----	----	----
Indeno(1,2,3,cd)pyrene	193-39-5	0.5	mg/kg	<0.5	----	----	----	----
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	----	----	----	----
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	0.6	----	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	----	----	----	----
EP075B: Polynuclear Aromatic Hydrocarbons								
Benzo(a)pyrene	50-32-8	0.05	mg/kg	<0.05	----	----	----	----

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Work Order : EM2120163
Client : Pitt & Sherry (Operations) Pty Ltd
Project : 321-323A Elizabeth Street P.29.0421



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Sample ID		TP05-4-1.00-1.50	----	----	----	----
		Sampling date / time		12-Oct-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2120163-021	-----	-----	-----	-----
Result				---	---	---	---	---
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	----	----	----	----
C10 - C14 Fraction	----	50	mg/kg	<50	----	----	----	----
C15 - C28 Fraction	----	100	mg/kg	<100	----	----	----	----
C29 - C36 Fraction	----	100	mg/kg	<100	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	----	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	----	----	----	----
>C10 - C16 Fraction	----	50	mg/kg	<50	----	----	----	----
>C16 - C34 Fraction	----	100	mg/kg	<100	----	----	----	----
>C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	----	----	----	----
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	----	----	----	----
Toluene	108-88-3	0.5	mg/kg	<0.5	----	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	----	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	----	----	----	----
^ Sum of BTEX	----	0.2	mg/kg	<0.2	----	----	----	----
^ Total Xylenes	----	0.5	mg/kg	<0.5	----	----	----	----
Naphthalene	91-20-3	1	mg/kg	<1	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	92.0	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%	89.2	----	----	----	----
2,4,6-Tribromophenol	118-79-6	0.5	%	103	----	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	94.4	----	----	----	----
Anthracene-d10	1719-06-8	0.5	%	113	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%	99.0	----	----	----	----
EP075T: Base/Neutral Extractable Surrogates								
2-Fluorobiphenyl	321-60-8	0.025	%	108	----	----	----	----

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Work Order : EM2120163
Client : Pitt & Sherry (Operations) Pty Ltd
Project : 321-323A Elizabeth Street P.29.0421



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP05-4-1.00-1.50	----	----	----	----
				Sampling date / time	12-Oct-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2120163-021	-----	-----	-----	-----	-----
				Result	---	---	---	---	---
EP075T: Base/Neutral Extractable Surrogates - Continued									
Anthracene-d10	1719-06-8	0.025	%	112	----	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.025	%	106	----	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%	64.8	----	----	----	----	----
Toluene-D8	2037-26-5	0.2	%	85.4	----	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%	99.4	----	----	----	----	----

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 Work Order : EM2120163
 Client : Pitt & Sherry (Operations) Pty Ltd
 Project : 321-323A Elizabeth Street P.29.0421



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	Trip balnk	----	----	----	----
Sampling date / time					13-Oct-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2120163-022	-----	-----	-----	-----
				Result	---	---	---	---	---
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	----	----	----	----
[^] C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	----	----	----	----
Toluene	108-88-3	2	µg/L		<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	----	----	----	----
[^] Total Xylenes	----	2	µg/L		<2	----	----	----	----
[^] Sum of BTEX	----	1	µg/L		<1	----	----	----	----
Naphthalene	91-20-3	5	µg/L		<5	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	2	%		103	----	----	----	----
Toluene-D8	2037-26-5	2	%		101	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		104	----	----	----	----



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 Work Order : EM2120163
 Client : Pitt & Sherry (Operations) Pty Ltd
 Project : 321-323A Elizabeth Street P.29.0421

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	54	125
2-Chlorophenol-D4	93951-73-6	65	123
2,4,6-Tribromophenol	118-79-6	34	122
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	61	125
Anthracene-d10	1719-06-8	62	130
4-Terphenyl-d14	1718-51-0	67	133
EP075T: Base/Neutral Extractable Surrogates			
2-Fluorobiphenyl	321-60-8	35	126
Anthracene-d10	1719-06-8	40	135
4-Terphenyl-d14	1718-51-0	42	133
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	51	125
Toluene-D8	2037-26-5	55	125
4-Bromofluorobenzene	460-00-4	56	124
Sub-Matrix: WATER			
Compound	CAS Number	Low	High
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129

Inter-Laboratory Testing

Analysis conducted by ALS Newcastle, NATA accreditation no. 825, site no. 1656 (Chemistry) 9854 (Biology).

(SOIL) EA150: Soil Classification based on Particle Size

(SOIL) EA152: Soil Particle Density



Environment Testing

Certificate of Analysis

Pitt & Sherry (Operations) Pty Ltd
4th Floor, 113 Cimitiere Street
Launceston
Tasmania 7250



NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition
Arrangement for the mutual recognition of the
equivalence of testing, medical testing, calibration,
inspection, proficiency testing scheme providers and
reference materials producers reports and certificates.

Attention: Carly Clark

Report 832237-S
Project name 321-323A ELIZABETH STREET
Project ID P.19.0421
Received Date Oct 14, 2021

Client Sample ID			TRIPLICATE 2
Sample Matrix			Soil
Eurofins Sample No.			M21-Oc30339
Date Sampled			Oct 12, 2021
Test/Reference	LOR	Unit	
BTEX			
Benzene	0.1	mg/kg	< 0.1
Toluene	0.1	mg/kg	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2
o-Xylene	0.1	mg/kg	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3
4-Bromofluorobenzene (surr.)	1	%	75
Total Recoverable Hydrocarbons			
TRH C6-C9	20	mg/kg	< 20
TRH C10-C14	20	mg/kg	< 20
TRH C15-C28	50	mg/kg	< 50
TRH C29-C36	50	mg/kg	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50
Naphthalene ^{N02}	0.5	mg/kg	< 0.5
TRH C6-C10	20	mg/kg	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20
TRH >C10-C16	50	mg/kg	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50
TRH >C16-C34	100	mg/kg	< 100
TRH >C34-C40	100	mg/kg	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100
Benzo(a)pyrene	0.005	mg/kg	1.3
% Moisture	1	%	17
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	1.9
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	2.2
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	2.4
Acenaphthene	0.5	mg/kg	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5
Anthracene	0.5	mg/kg	< 0.5
Benz(a)anthracene	0.5	mg/kg	0.7
Benzo(a)pyrene	0.5	mg/kg	1.6
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	0.7
Benzo(g,h,i)perylene	0.5	mg/kg	0.9



Environment Testing

Client Sample ID			TRIPLICATE 2
Sample Matrix			Soil
Eurofins Sample No.			M21-Oc30339
Date Sampled			Oct 12, 2021
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Benzo(k)fluoranthene	0.5	mg/kg	0.7
Chrysene	0.5	mg/kg	0.8
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5
Fluoranthene	0.5	mg/kg	1.7
Fluorene	0.5	mg/kg	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	0.8
Naphthalene	0.5	mg/kg	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5
Pyrene	0.5	mg/kg	1.7
Total PAH*	0.5	mg/kg	9.6
2-Fluorobiphenyl (surr.)	1	%	79
p-Terphenyl-d14 (surr.)	1	%	84
Phenols (Halogenated)			
2-Chlorophenol	0.5	mg/kg	< 0.5
2,4-Dichlorophenol	0.5	mg/kg	< 0.5
2,4,5-Trichlorophenol	1	mg/kg	< 1
2,4,6-Trichlorophenol	1	mg/kg	< 1
2,6-Dichlorophenol	0.5	mg/kg	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1
Pentachlorophenol	1	mg/kg	< 1
Tetrachlorophenols - Total	10	mg/kg	< 10
Total Halogenated Phenol*	1	mg/kg	< 1
Phenols (non-Halogenated)			
2-Cyclohexyl-4,6-dinitrophenol	20	mg/kg	< 20
2-Methyl-4,6-dinitrophenol	5	mg/kg	< 5
2-Nitrophenol	1.0	mg/kg	< 1
2,4-Dimethylphenol	0.5	mg/kg	< 0.5
2,4-Dinitrophenol	5	mg/kg	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4
Total cresols*	0.5	mg/kg	< 0.5
4-Nitrophenol	5	mg/kg	< 5
Dinoseb	20	mg/kg	< 20
Phenol	0.5	mg/kg	< 0.5
Phenol-d6 (surr.)	1	%	79
Total Non-Halogenated Phenol*	20	mg/kg	< 20
Heavy Metals			
Arsenic	2	mg/kg	4.1
Cadmium	0.4	mg/kg	< 0.4
Chromium	5	mg/kg	15
Copper	5	mg/kg	65
Lead	5	mg/kg	190
Mercury	0.1	mg/kg	0.9
Nickel	5	mg/kg	17
Zinc	5	mg/kg	230



Environment Testing

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
BTEX and Naphthalene			
BTEX	Melbourne	Oct 15, 2021	14 Days
- Method: LTM-ORG-2010 TRH C8-C40			
Total Recoverable Hydrocarbons	Melbourne	Oct 15, 2021	14 Days
- Method: LTM-ORG-2010 TRH C8-C40			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Oct 15, 2021	14 Days
- Method: LTM-ORG-2010 TRH C8-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Oct 15, 2021	14 Days
- Method: LTM-ORG-2010 TRH C8-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Oct 15, 2021	14 Days
- Method: LTM-ORG-2010 TRH C8-C40			
Benzo(a)pyrene	Melbourne	Oct 15, 2021	0 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water (trace)			
Polycyclic Aromatic Hydrocarbons	Melbourne	Oct 15, 2021	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Metals M8	Melbourne	Oct 15, 2021	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Melbourne	Oct 14, 2021	14 Days
- Method: LTM-GEN-7080 Moisture			
Phenols (Speciated)			
Phenols (Halogenated)	Melbourne	Oct 15, 2021	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (non-Halogenated)	Melbourne	Oct 15, 2021	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			



Environment Testing

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Company Name: Pitt & Sherry (Operations) Pty Ltd
Address: 4th Floor, 113 Cimitiere Street
Launceston
Tasmania 7250

Project Name: 321-323A ELIZABET STREET
Project ID: P.19.0421

Order No.: P.19.0421
Report #: 832237
Phone: 03 6323 1900
Fax: 03 6334 4651

Received: Oct 14, 2021 10:12 AM
Due: Oct 21, 2021
Priority: 5 Day
Contact Name: Carly Clark

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						Benz(a)pyrene	Polycyclic Aromatic Hydrocarbons	Metals M8	Phenols (Speciated)	BTEX and Naphthalene	Moisture Set	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217												
Brisbane Laboratory - NATA # 1261 Site # 20794												
Mayfield Laboratory - NATA # 1261 Site # 25079												
Perth Laboratory - NATA # 2377 Site # 2370												
External Laboratory												
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID							
1	TRIPLICATE 2	Oct 12, 2021		Soil	M21-Oc30339	X	X	X	X	X	X	X
Test Counts						1	1	1	1	1	1	1



Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	mg/L: milligrams per litre	ug/L: micrograms per litre
ppm: Parts per million	ppb: Parts per billion	%: Percentage
org/100mL: Organisms per 100 millilitres	NTU: Nephelometric Turbidity Units	MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs..

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.



Environment Testing

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Benzo(a)pyrene	mg/kg	< 0.005			0.005	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g,h,i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a,h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/kg	< 0.5			0.5	Pass	
2,4-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
2,4,5-Trichlorophenol	mg/kg	< 1			1	Pass	
2,4,6-Trichlorophenol	mg/kg	< 1			1	Pass	
2,6-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
4-Chloro-3-methylphenol	mg/kg	< 1			1	Pass	
Pentachlorophenol	mg/kg	< 1			1	Pass	
Tetrachlorophenols - Total	mg/kg	< 10			10	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4,6-dinitrophenol	mg/kg	< 20			20	Pass	



Environment Testing

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2-Methyl-4,6-dinitrophenol	mg/kg	< 5			5	Pass	
2-Nitrophenol	mg/kg	< 1			1.0	Pass	
2,4-Dimethylphenol	mg/kg	< 0.5			0.5	Pass	
2,4-Dinitrophenol	mg/kg	< 5			5	Pass	
2-Methylphenol (o-Cresol)	mg/kg	< 0.2			0.2	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/kg	< 0.4			0.4	Pass	
4-Nitrophenol	mg/kg	< 5			5	Pass	
Dinoseb	mg/kg	< 20			20	Pass	
Phenol	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	112			70-130	Pass	
Toluene	%	119			70-130	Pass	
Ethylbenzene	%	122			70-130	Pass	
m&p-Xylenes	%	121			70-130	Pass	
Xylenes - Total*	%	121			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	103			70-130	Pass	
TRH C10-C14	%	114			70-130	Pass	
Naphthalene	%	125			70-130	Pass	
TRH C6-C10	%	93			70-130	Pass	
TRH >C10-C16	%	111			70-130	Pass	
LCS - % Recovery							
Benzo(a)pyrene	%	92			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	79			70-130	Pass	
Acenaphthylene	%	104			70-130	Pass	
Anthracene	%	86			70-130	Pass	
Benz(a)anthracene	%	70			70-130	Pass	
Benzo(a)pyrene	%	113			70-130	Pass	
Benzo(b&j)fluoranthene	%	103			70-130	Pass	
Benzo(g,h,i)perylene	%	99			70-130	Pass	
Benzo(k)fluoranthene	%	116			70-130	Pass	
Chrysene	%	92			70-130	Pass	
Dibenz(a,h)anthracene	%	103			70-130	Pass	
Fluoranthene	%	91			70-130	Pass	
Fluorene	%	76			70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	94			70-130	Pass	
Naphthalene	%	81			70-130	Pass	
Phenanthrene	%	104			70-130	Pass	
Pyrene	%	96			70-130	Pass	
LCS - % Recovery							



Environment Testing

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Phenols (Halogenated)										
2-Chlorophenol				%	68			25-140	Pass	
2,4-Dichlorophenol				%	59			25-140	Pass	
2,4,5-Trichlorophenol				%	34			25-140	Pass	
2,4,6-Trichlorophenol				%	34			25-140	Pass	
2,6-Dichlorophenol				%	62			25-140	Pass	
4-Chloro-3-methylphenol				%	57			25-140	Pass	
Pentachlorophenol				%	31			25-140	Pass	
Tetrachlorophenols - Total				%	73			25-140	Pass	
LCS - % Recovery										
Phenols (non-Halogenated)										
2-Methyl-4,6-dinitrophenol				%	59			25-140	Pass	
2-Nitrophenol				%	50			25-140	Pass	
2,4-Dimethylphenol				%	60			25-140	Pass	
2,4-Dinitrophenol				%	66			25-140	Pass	
2-Methylphenol (o-Cresol)				%	65			25-140	Pass	
3&4-Methylphenol (m&p-Cresol)				%	71			25-140	Pass	
4-Nitrophenol				%	42			25-140	Pass	
Dinoseb				%	41			25-140	Pass	
Phenol				%	71			25-140	Pass	
LCS - % Recovery										
Heavy Metals										
Arsenic				%	102			80-120	Pass	
Cadmium				%	105			80-120	Pass	
Chromium				%	111			80-120	Pass	
Copper				%	114			80-120	Pass	
Lead				%	112			80-120	Pass	
Mercury				%	108			80-120	Pass	
Nickel				%	105			80-120	Pass	
Zinc				%	102			80-120	Pass	
Test		Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery										
BTEX					Result 1					
Benzene	M21-Oc30533	NCP	%	78				70-130	Pass	
Toluene	M21-Oc30533	NCP	%	83				70-130	Pass	
Ethylbenzene	M21-Oc30533	NCP	%	74				70-130	Pass	
m&p-Xylenes	M21-Oc30533	NCP	%	75				70-130	Pass	
o-Xylene	M21-Oc30533	NCP	%	80				70-130	Pass	
Xylenes - Total*	M21-Oc30533	NCP	%	76				70-130	Pass	
Spike - % Recovery										
Total Recoverable Hydrocarbons					Result 1					
TRH C6-C9	M21-Oc30533	NCP	%	80				70-130	Pass	
TRH C10-C14	M21-Oc31087	NCP	%	127				70-130	Pass	
Naphthalene	M21-Oc30533	NCP	%	119				70-130	Pass	
TRH C6-C10	M21-Oc30533	NCP	%	77				70-130	Pass	
TRH >C10-C16	M21-Oc31087	NCP	%	124				70-130	Pass	
Spike - % Recovery										
Polycyclic Aromatic Hydrocarbons					Result 1					
Acenaphthene	M21-Oc29776	NCP	%	77				70-130	Pass	
Acenaphthylene	M21-Oc29776	NCP	%	76				70-130	Pass	
Anthracene	M21-Oc29776	NCP	%	88				70-130	Pass	
Benz(a)anthracene	M21-Oc29776	NCP	%	83				70-130	Pass	
Benzo(a)pyrene	M21-Oc29776	NCP	%	105				70-130	Pass	
Benzo(b&j)fluoranthene	M21-Oc29776	NCP	%	72				70-130	Pass	



Environment Testing

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(g,h,i)perylene	M21-Oc29776	NCP	%	85			70-130	Pass	
Benzo(k)fluoranthene	M21-Oc29776	NCP	%	96			70-130	Pass	
Chrysene	M21-Oc29776	NCP	%	82			70-130	Pass	
Dibenz(a,h)anthracene	M21-Oc29776	NCP	%	86			70-130	Pass	
Fluoranthene	M21-Oc29776	NCP	%	95			70-130	Pass	
Fluorene	M21-Oc29776	NCP	%	75			70-130	Pass	
Indeno(1,2,3-cd)pyrene	M21-Oc29776	NCP	%	87			70-130	Pass	
Naphthalene	M21-Oc29776	NCP	%	78			70-130	Pass	
Phenanthrene	M21-Oc29776	NCP	%	84			70-130	Pass	
Pyrene	M21-Oc29776	NCP	%	93			70-130	Pass	
Spike - % Recovery									
Phenols (Halogenated)				Result 1					
2-Chlorophenol	M21-Oc14548	NCP	%	72			30-130	Pass	
2,4-Dichlorophenol	M21-Oc14548	NCP	%	60			30-130	Pass	
2,4,5-Trichlorophenol	M21-Oc14548	NCP	%	57			30-130	Pass	
2,4,6-Trichlorophenol	M21-Oc14548	NCP	%	57			30-130	Pass	
2,6-Dichlorophenol	M21-Oc14548	NCP	%	65			30-130	Pass	
4-Chloro-3-methylphenol	M21-Oc14548	NCP	%	67			30-130	Pass	
Pentachlorophenol	M21-Oc14548	NCP	%	37			30-130	Pass	
Tetrachlorophenols - Total	M21-Oc14548	NCP	%	48			30-130	Pass	
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2-Cyclohexyl-4,6-dinitrophenol	M21-Oc10730	NCP	%	66			30-130	Pass	
2-Methyl-4,6-dinitrophenol	M21-Oc10730	NCP	%	37			30-130	Pass	
2-Nitrophenol	M21-Oc14548	NCP	%	51			30-130	Pass	
2,4-Dimethylphenol	M21-Oc14548	NCP	%	73			30-130	Pass	
2-Methylphenol (o-Cresol)	M21-Oc14548	NCP	%	69			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	M21-Oc14548	NCP	%	75			30-130	Pass	
4-Nitrophenol	M21-Oc14548	NCP	%	66			30-130	Pass	
Dinoseb	M21-Oc14548	NCP	%	37			30-130	Pass	
Phenol	M21-Oc14548	NCP	%	72			30-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M21-Oc29839	NCP	%	89			75-125	Pass	
Cadmium	M21-Oc29839	NCP	%	103			75-125	Pass	
Chromium	M21-Oc29839	NCP	%	89			75-125	Pass	
Copper	M21-Oc29839	NCP	%	93			75-125	Pass	
Lead	M21-Oc29839	NCP	%	124			75-125	Pass	
Mercury	M21-Oc29839	NCP	%	106			75-125	Pass	
Nickel	M21-Oc29774	NCP	%	103			75-125	Pass	
Zinc	M21-Oc29839	NCP	%	87			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	M21-Oc34072	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	M21-Oc34072	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	M21-Oc34072	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	M21-Oc34072	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	M21-Oc34072	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	M21-Oc34072	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	



Environment Testing

Duplicate								
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD		
TRH C6-C9	M21-Oc34072	NCP	mg/kg	< 20	< 20	<1	30%	Pass
TRH C10-C14	M21-Oc30532	NCP	mg/kg	< 20	< 20	<1	30%	Pass
TRH C15-C28	M21-Oc30532	NCP	mg/kg	190	230	20	30%	Pass
TRH C29-C36	M21-Oc30532	NCP	mg/kg	73	68	8.0	30%	Pass
Naphthalene	M21-Oc34072	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	M21-Oc34072	NCP	mg/kg	< 20	< 20	<1	30%	Pass
TRH >C10-C16	M21-Oc30532	NCP	mg/kg	< 50	59	26	30%	Pass
TRH >C16-C34	M21-Oc30532	NCP	mg/kg	200	230	11	30%	Pass
TRH >C34-C40	M21-Oc30532	NCP	mg/kg	< 100	< 100	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
% Moisture	S21-Oc30133	NCP	%	23	23	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	M21-Oc30532	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	M21-Oc30532	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	M21-Oc30532	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	M21-Oc30532	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)pyrene	M21-Oc30532	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	M21-Oc30532	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g,h,i)perylene	M21-Oc30532	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	M21-Oc30532	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	M21-Oc30532	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a,h)anthracene	M21-Oc30532	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	M21-Oc30532	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	M21-Oc30532	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	M21-Oc30532	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	M21-Oc30532	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	M21-Oc30532	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	M21-Oc30532	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Phenols (Halogenated)				Result 1	Result 2	RPD		
2-Chlorophenol	B21-Oc16523	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dichlorophenol	B21-Oc16523	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4,5-Trichlorophenol	B21-Oc16523	NCP	mg/kg	< 1	< 1	<1	30%	Pass
2,4,6-Trichlorophenol	B21-Oc16523	NCP	mg/kg	< 1	< 1	<1	30%	Pass
2,6-Dichlorophenol	B21-Oc16523	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
4-Chloro-3-methylphenol	B21-Oc16523	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Pentachlorophenol	B21-Oc16523	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Tetrachlorophenols - Total	B21-Oc16523	NCP	mg/kg	< 10	< 10	<1	30%	Pass
Duplicate								
Phenols (non-Halogenated)				Result 1	Result 2	RPD		
2-Cyclohexyl-4,6-dinitrophenol	B21-Oc16523	NCP	mg/kg	< 20	< 20	<1	30%	Pass
2-Methyl-4,6-dinitrophenol	B21-Oc16523	NCP	mg/kg	< 5	< 5	<1	30%	Pass
2-Nitrophenol	B21-Oc16523	NCP	mg/kg	< 1	< 1	<1	30%	Pass
2,4-Dimethylphenol	B21-Oc16523	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2,4-Dinitrophenol	B21-Oc16523	NCP	mg/kg	< 5	< 5	<1	30%	Pass
2-Methylphenol (o-Cresol)	B21-Oc16523	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
3&4-Methylphenol (m&p-Cresol)	B21-Oc16523	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
4-Nitrophenol	B21-Oc16523	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Dinoseb	B21-Oc16523	NCP	mg/kg	< 20	< 20	<1	30%	Pass
Phenol	B21-Oc16523	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass



Environment Testing

Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	M21-Oc30339	CP	mg/kg	4.1	3.1	25	30%	Pass
Cadmium	M21-Oc30339	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	M21-Oc30339	CP	mg/kg	15	14	7.0	30%	Pass
Copper	M21-Oc30339	CP	mg/kg	65	60	8.0	30%	Pass
Lead	M21-Oc30339	CP	mg/kg	190	200	4.0	30%	Pass
Mercury	M21-Oc30339	CP	mg/kg	0.9	0.8	10	30%	Pass
Nickel	M21-Oc30339	CP	mg/kg	17	17	2.0	30%	Pass
Zinc	M21-Oc30339	CP	mg/kg	230	210	9.0	30%	Pass



Environment Testing

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C18" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QA/QC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised by:

Michael Morrison	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)
Vivian Wang	Senior Analyst-Volatile (VIC)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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ALS Laboratory Quality Control Reports

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Appendix P

pitt&sherry



QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EM2119702	Page	: 1 of 4
Client	: Pitt & Sherry (Operations) Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: CARLY CLARK	Telephone	: +61-3-8549 9600
Project	: P.19.0421.008	Date Samples Received	: 06-Oct-2021
Site	: ----	Issue Date	: 08-Oct-2021
Sampler	: JH	No. of samples received	: 1
Order number	: ----	No. of samples analysed	: 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- NO Method Blank value outliers occur.
- NO Duplicate outliers occur.
- NO Laboratory Control outliers occur.
- NO Matrix Spike outliers occur.
- For all regular sample matrices, NO surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- NO Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



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Work Order : EM2119702
Client : Pitt & Sherry (Operations) Pty Ltd
Project : P.19.0421.008

Outliers : Frequency of Quality Control Samples

Matrix: WATER

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	3	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	3	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: WATER

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Filtered; Lab-acidified (EG020A-F) SW1	04-Oct-2021	----	----	----	07-Oct-2021	02-Apr-2022	✓
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Filtered; Lab-acidified (EG035F) SW1	04-Oct-2021	----	----	----	07-Oct-2021	01-Nov-2021	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM)) SW1	04-Oct-2021	07-Oct-2021	11-Oct-2021	✓	07-Oct-2021	16-Nov-2021	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071) SW1	04-Oct-2021	07-Oct-2021	11-Oct-2021	✓	07-Oct-2021	16-Nov-2021	✓
Amber VOC Vial - Sulfuric Acid (EP080) SW1	04-Oct-2021	07-Oct-2021	18-Oct-2021	✓	07-Oct-2021	18-Oct-2021	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071) SW1	04-Oct-2021	07-Oct-2021	11-Oct-2021	✓	07-Oct-2021	16-Nov-2021	✓
Amber VOC Vial - Sulfuric Acid (EP080) SW1	04-Oct-2021	07-Oct-2021	18-Oct-2021	✓	07-Oct-2021	18-Oct-2021	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080) SW1	04-Oct-2021	07-Oct-2021	18-Oct-2021	✓	07-Oct-2021	18-Oct-2021	✓

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 Work Order : EM2119702
 Client : Pitt & Sherry (Operations) Pty Ltd
 Project : P.19.0421.008



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Dissolved Mercury by FIMS	EG035F	2	17	11.76	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	16	12.50	10.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	3	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	17	11.76	10.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	17	11.76	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Dissolved Mercury by FIMS	EG035F	1	17	5.88	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	16	6.25	5.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	3	33.33	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	17	5.88	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	17	5.88	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Dissolved Mercury by FIMS	EG035F	1	17	5.88	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	16	6.25	5.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	3	33.33	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	17	5.88	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	17	5.88	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Dissolved Mercury by FIMS	EG035F	1	17	5.88	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	16	6.25	5.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	3	0.00	5.00	✖	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	17	5.88	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	17	5.88	5.00	✔	NEPM 2013 B3 & ALS QC Standard

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 Work Order : EM2119702
 Client : Pitt & Sherry (Operations) Pty Ltd
 Project : P.19.0421.008



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015 The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Preparation Methods	Method	Matrix	Method Descriptions
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.



QUALITY CONTROL REPORT

Work Order	: EM2119702	Page	: 1 of 6
Client	: Pitt & Sherry (Operations) Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: CARLY CLARK	Contact	: Gregory Gommers
Address	: PO BOX 94 199 MACQUARIE ST HOBART TAS, AUSTRALIA 7001	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: 03 9674 4163	Telephone	: +61-3-8549 9600
Project	: P.19.0421.008	Date Samples Received	: 06-Oct-2021
Order number	: ----	Date Analysis Commenced	: 07-Oct-2021
C-O-C number	: ----	Issue Date	: 08-Oct-2021
Sampler	: JH		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 1		
No. of samples analysed	: 1		



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC

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 Work Order : EM2119702
 Client : Pitt & Sherry (Operations) Pty Ltd
 Project : P.19.0421.008



General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020F: Dissolved Metals by ICP-MS (QC Lot: 3942953)									
EM2119691-002	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.007	0.007	0.0	No Limit
EM2119624-002	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.002	0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.006	0.006	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.014	0.014	0.0	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 3942951)									
EM2119624-001	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EM2119691-001	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3941825)									
EM2119624-004	Anonymous	EP071: C15 - C28 Fraction	----	100	µg/L	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	µg/L	<50	<50	0.0	No Limit
		EP071: C29 - C36 Fraction	----	50	µg/L	<50	<50	0.0	No Limit
EM2119624-001	Anonymous	EP071: C15 - C28 Fraction	----	100	µg/L	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	µg/L	<50	<50	0.0	No Limit
		EP071: C29 - C36 Fraction	----	50	µg/L	<50	<50	0.0	No Limit



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 Work Order : EM2119702
 Client : Pitt & Sherry (Operations) Pty Ltd
 Project : P.19.0421.008

Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3942310)									
EM2119602-010	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EM2119617-002	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3941825)									
EM2119624-004	Anonymous	EP071: >C10 - C16 Fraction	----	100	µg/L	<100	<100	0.0	No Limit
		EP071: >C16 - C34 Fraction	----	100	µg/L	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	µg/L	<100	<100	0.0	No Limit
EM2119624-001	Anonymous	EP071: >C10 - C16 Fraction	----	100	µg/L	<100	<100	0.0	No Limit
		EP071: >C16 - C34 Fraction	----	100	µg/L	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	µg/L	<100	<100	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3942310)									
EM2119602-010	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EM2119617-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP080: BTEXN (QC Lot: 3942310)									
EM2119602-010	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.0	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
EM2119617-002	Anonymous	EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
		EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.0	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit

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 Work Order : EM2119702
 Client : Pitt & Sherry (Operations) Pty Ltd
 Project : P.19.0421.008



Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

Sub-Matrix: WATER				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EG020F: Dissolved Metals by ICP-MS (QCLot: 3942953)								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	99.8	89.0	111
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	97.5	83.5	111
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	93.2	83.2	109
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	96.8	83.1	107
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	96.2	84.6	108
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	100	84.3	110
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	100.0	86.3	112
EG035F: Dissolved Mercury by FIMS (QCLot: 3942951)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	87.2	71.6	116
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3941827)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	76.2	42.8	114
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	87.3	48.6	119
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	85.3	47.0	117
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	83.9	49.5	119
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	91.0	49.4	121
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	92.7	48.4	122
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	93.8	50.3	124
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	93.9	50.0	126
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	91.4	49.4	127
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	97.0	48.7	126
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	1	µg/L	<1.0	5 µg/L	120	54.5	134
	205-82-3							
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	99.3	56.1	134
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	104	55.6	135
EP075(SIM): Indeno(1,2,3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	93.0	54.4	126
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	95.6	54.5	126
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	96.3	54.4	126
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3941825)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	4670 µg/L	83.5	44.2	140
EP071: C15 - C28 Fraction	----	100	µg/L	<100	15800 µg/L	96.3	46.9	127
EP071: C29 - C36 Fraction	----	50	µg/L	<50	8180 µg/L	92.4	47.4	128
EP071: C10 - C36 Fraction (sum)	----	----	µg/L	----	28650 µg/L	93.0	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3942310)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	84.9	66.2	134

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Work Order : EM2119702
Client : Pitt & Sherry (Operations) Pty Ltd
Project : P.19.0421.008



Sub-Matrix: WATER

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%)	
							Low	High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3941825)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	6100 µg/L	89.2	43.0	127
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	21200 µg/L	93.2	48.6	129
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	1620 µg/L	98.4	42.2	133
EP071: >C10 - C40 Fraction (sum)	----	----	µg/L	----	28920 µg/L	92.8	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3942310)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	83.6	66.2	132
EP080: BTEXN (QCLot: 3942310)								
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	81.5	68.8	127
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	88.2	72.9	129
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	85.2	71.7	130
EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	40 µg/L	87.0	72.3	136
	106-42-3							
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	90.0	75.9	134
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	98.9	68.3	131

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: WATER

Sub-Matrix: WATER				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
				Concentration	MS	Low	High
Laboratory sample ID	Sample ID	Method: Compound	CAS Number				
EG020F: Dissolved Metals by ICP-MS (QCLot: 3942953)							
EM2119624-002	Anonymous	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	103	76.6	124
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	101	74.6	118
		EG020A-F: Chromium	7440-47-3	0.2 mg/L	101	71.0	135
		EG020A-F: Copper	7440-50-8	0.2 mg/L	100	76.0	130
		EG020A-F: Lead	7439-92-1	0.2 mg/L	96.4	75.0	133
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	101	73.0	131
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	99.9	75.0	131
EG035F: Dissolved Mercury by FIMS (QCLot: 3942951)							
EM2119624-002	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	72.8	70.0	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3941825)							
EM2119624-004	Anonymous	EP071: C10 - C14 Fraction	----	4670 µg/L	96.7	41.2	149
		EP071: C15 - C28 Fraction	----	15800 µg/L	102	41.8	131
		EP071: C29 - C36 Fraction	----	8180 µg/L	98.1	43.5	130
		EP071: C10 - C36 Fraction (sum)	----	28650 µg/L	100	70.0	130

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 Work Order : EM2119702
 Client : Pitt & Sherry (Operations) Pty Ltd
 Project : P.19.0421.008



Sub-Matrix: WATER

Sub-Matrix: WATER				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3942310)							
EM2119602-010	Anonymous	EP080: C6 - C9 Fraction	----	280 µg/L	86.3	33.9	126
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3941825)							
EM2119624-004	Anonymous	EP071: >C10 - C16 Fraction	----	6100 µg/L	100	38.4	133
		EP071: >C16 - C34 Fraction	----	21200 µg/L	98.6	43.1	132
		EP071: >C34 - C40 Fraction	----	1620 µg/L	105	38.4	135
		EP071: >C10 - C40 Fraction (sum)	----	28920 µg/L	99.4	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3942310)							
EM2119602-010	Anonymous	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	80.6	34.0	122
EP080: BTEXN (QCLot: 3942310)							
EM2119602-010	Anonymous	EP080: Benzene	71-43-2	20 µg/L	97.7	56.3	133
		EP080: Toluene	108-88-3	20 µg/L	102	60.4	132



QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EM2120163	Page	: 1 of 11
Client	: Pitt & Sherry (Operations) Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: Jessica Holan	Telephone	: +61-3-8549 9600
Project	: 321-323A Elizabeth Street P.29.0421	Date Samples Received	: 13-Oct-2021
Site	: ----	Issue Date	: 20-Oct-2021
Sampler	: JH	No. of samples received	: 22
Order number	: ----	No. of samples analysed	: 22

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- NO Method Blank value outliers occur.
- NO Duplicate outliers occur.
- NO Laboratory Control outliers occur.
- Matrix Spike outliers exist - please see following pages for full details.
- For all regular sample matrices, NO surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- NO Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- NO Quality Control Sample Frequency Outliers exist.



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Work Order : EM2120163
Client : Pitt & Sherry (Operations) Pty Ltd
Project : 321-323A Elizabeth Street P.29.0421

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: SOIL

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EP080/071: Total Petroleum Hydrocarbons	EM2120262--008	Anonymous	C10 - C14 Fraction	----	49.8 %	71.2-125%	Recovery less than lower data quality objective
EP080/071: Total Recoverable Hydrocarbons - NEPM 2	EM2120262--008	Anonymous	>C10 - C16 Fraction	----	51.5 %	72.2-128%	Recovery less than lower data quality objective

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: SOIL

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA001: pH in soil using 0.01M CaCl extract								
Soil Glass Jar - Unpreserved (EA001)								
TP06-1,	TP01-3	12-Oct-2021	19-Oct-2021	19-Oct-2021	✓	19-Oct-2021	19-Oct-2021	✓
EA055: Moisture Content (Dried @ 105-110°C)								
Soil Glass Jar - Unpreserved (EA055)								
TP02-1, TP02-3, TP06-1, TP06-3, TP01-2, TP01-4, TP03-2, TP04-2-1_0.0-0.10, TP04-3_0.40-1.0, TP05-2-0.40-0.70, TP05-4-1.00-1.50	TP02-2, Triplicate 1, TP06-2, TP01-1, TP01-3, TP03-3_0.00-0.20, TP03-3_1.40-1.60, TP04-2_0.10-0.40, TP05-1-0.00-0.10, TP05-3-0.70-1.00,	12-Oct-2021	----	----	----	18-Oct-2021	26-Oct-2021	✓
EA150: Soil Classification based on Particle Size								
Snap Lock Bag (EA150H)								
TP06-1,	TP01-3	12-Oct-2021	----	----	----	19-Oct-2021	10-Apr-2022	✓
EA152: Soil Particle Density								
Snap Lock Bag (EA152)								
TP06-1,	TP01-3	12-Oct-2021	----	----	----	19-Oct-2021	10-Apr-2022	✓



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 Client : Pitt & Sherry (Operations) Pty Ltd
 Project : 321-323A Elizabeth Street P.29.0421

Matrix: SOIL

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
ED006: Exchangeable Cations on Alkaline Soils							
Soil Glass Jar - Unpreserved (ED006) TP06-1, TP01-3	12-Oct-2021	18-Oct-2021	09-Nov-2021	✓	20-Oct-2021	09-Nov-2021	✓
ED007: Exchangeable Cations							
Soil Glass Jar - Unpreserved (ED007) TP06-1, TP01-3	12-Oct-2021	18-Oct-2021	09-Nov-2021	✓	20-Oct-2021	09-Nov-2021	✓
ED008: Exchangeable Cations							
Soil Glass Jar - Unpreserved (ED008) TP06-1, TP01-3	12-Oct-2021	18-Oct-2021	09-Nov-2021	✓	20-Oct-2021	09-Nov-2021	✓
EG005(ED093)T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T) TP02-1, TP02-3, TP06-1, TP06-3, TP01-2, TP01-4, TP03-2, TP04-2-1_0.0-0.10, TP04-3_0.40-1.0, TP05-2-0.40-0.70, TP05-4-1.00-1.50	12-Oct-2021	16-Oct-2021	10-Apr-2022	✓	18-Oct-2021	10-Apr-2022	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T) TP02-1, TP02-3, TP06-1, TP06-3, TP01-2, TP01-4, TP03-2, TP04-2-1_0.0-0.10, TP04-3_0.40-1.0, TP05-2-0.40-0.70, TP05-4-1.00-1.50	12-Oct-2021	16-Oct-2021	09-Nov-2021	✓	16-Oct-2021	09-Nov-2021	✓
EP004: Organic Matter							
Soil Glass Jar - Unpreserved (EP004) TP06-1, TP01-3	12-Oct-2021	18-Oct-2021	09-Nov-2021	✓	18-Oct-2021	09-Nov-2021	✓



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 Work Order : EM2120163
 Client : Pitt & Sherry (Operations) Pty Ltd
 Project : 321-323A Elizabeth Street P.29.0421

Matrix: SOIL

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis			
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP075(SIM))								
TP02-1, TP02-3, TP06-1, TP06-3, TP01-2, TP01-4, TP03-2, TP04-2-1_0.0-0.10, TP04-3_0.40-1.0, TP05-2-0.40-0.70,	TP02-2, Triplicate 1, TP06-2, TP01-1, TP01-3, TP03-3_0.00-0.20, TP03-3_1.40-1.60, TP04-2_0.10-0.40, TP05-1-0.00-0.10, TP05-3-0.70-1.00	12-Oct-2021	16-Oct-2021	26-Oct-2021	✓	16-Oct-2021	25-Nov-2021	✓
Soil Glass Jar - Unpreserved (EP075(SIM))								
TP05-4-1.00-1.50		12-Oct-2021	18-Oct-2021	26-Oct-2021	✓	19-Oct-2021	27-Nov-2021	✓
EP075B: Polynuclear Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP075-TAS)								
TP02-1, TP02-3, TP06-1, TP06-3, TP01-2, TP01-4, TP03-2, TP04-2-1_0.0-0.10, TP04-3_0.40-1.0, TP05-2-0.40-0.70, TP05-4-1.00-1.50	TP02-2, Triplicate 1, TP06-2, TP01-1, TP01-3, TP03-3_0.00-0.20, TP03-3_1.40-1.60, TP04-2_0.10-0.40, TP05-1-0.00-0.10, TP05-3-0.70-1.00	12-Oct-2021	18-Oct-2021	26-Oct-2021	✓	18-Oct-2021	27-Nov-2021	✓

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 Work Order : EM2120163
 Client : Pitt & Sherry (Operations) Pty Ltd
 Project : 321-323A Elizabeth Street P.29.0421



Matrix: SOIL

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080) TP05-4-1.00-1.50	12-Oct-2021	15-Oct-2021	26-Oct-2021	✓	15-Oct-2021	26-Oct-2021	✓
Soil Glass Jar - Unpreserved (EP080) TP02-1, TP02-3, TP06-1, TP06-3, TP01-2, TP01-4, TP03-2, TP04-2-1_0.0-0.10, TP04-3_0.40-1.0, TP05-2-0.40-0.70, TP02-2, Triplicate 1, TP06-2, TP01-1, TP01-3, TP03-3_0.00-0.20, TP03-3_1.40-1.60, TP04-2_0.10-0.40, TP05-1-0.00-0.10, TP05-3-0.70-1.00	12-Oct-2021	15-Oct-2021	26-Oct-2021	✓	16-Oct-2021	26-Oct-2021	✓
Soil Glass Jar - Unpreserved (EP071) TP02-1, TP02-3, TP06-1, TP06-3, TP01-2, TP01-4, TP03-2, TP04-2-1_0.0-0.10, TP04-3_0.40-1.0, TP05-2-0.40-0.70, TP02-2, Triplicate 1, TP06-2, TP01-1, TP01-3, TP03-3_0.00-0.20, TP03-3_1.40-1.60, TP04-2_0.10-0.40, TP05-1-0.00-0.10, TP05-3-0.70-1.00	12-Oct-2021	16-Oct-2021	26-Oct-2021	✓	16-Oct-2021	25-Nov-2021	✓
Soil Glass Jar - Unpreserved (EP071) TP05-4-1.00-1.50	12-Oct-2021	18-Oct-2021	26-Oct-2021	✓	19-Oct-2021	27-Nov-2021	✓



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 Work Order : EM2120163
 Client : Pitt & Sherry (Operations) Pty Ltd
 Project : 321-323A Elizabeth Street P.29.0421

Matrix: SOIL

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP080) TP05-4-1.00-1.50	12-Oct-2021	15-Oct-2021	26-Oct-2021	✓	15-Oct-2021	26-Oct-2021	✓
Soil Glass Jar - Unpreserved (EP080) TP02-1, TP02-3, TP06-1, TP06-3, TP01-2, TP01-4, TP03-2, TP04-2-1_0.0-0.10, TP04-3_0.40-1.0, TP05-2-0.40-0.70, TP02-2, Triplicate 1, TP06-2, TP01-1, TP01-3, TP03-3_0.00-0.20, TP03-3_1.40-1.60, TP04-2_0.10-0.40, TP05-1-0.00-0.10, TP05-3-0.70-1.00	12-Oct-2021	15-Oct-2021	26-Oct-2021	✓	16-Oct-2021	26-Oct-2021	✓
Soil Glass Jar - Unpreserved (EP071) TP02-1, TP02-3, TP06-1, TP06-3, TP01-2, TP01-4, TP03-2, TP04-2-1_0.0-0.10, TP04-3_0.40-1.0, TP05-2-0.40-0.70, TP02-2, Triplicate 1, TP06-2, TP01-1, TP01-3, TP03-3_0.00-0.20, TP03-3_1.40-1.60, TP04-2_0.10-0.40, TP05-1-0.00-0.10, TP05-3-0.70-1.00	12-Oct-2021	16-Oct-2021	26-Oct-2021	✓	16-Oct-2021	25-Nov-2021	✓
Soil Glass Jar - Unpreserved (EP071) TP05-4-1.00-1.50	12-Oct-2021	18-Oct-2021	26-Oct-2021	✓	19-Oct-2021	27-Nov-2021	✓
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080) TP05-4-1.00-1.50	12-Oct-2021	15-Oct-2021	26-Oct-2021	✓	15-Oct-2021	26-Oct-2021	✓
Soil Glass Jar - Unpreserved (EP080) TP02-1, TP02-3, TP06-1, TP06-3, TP01-2, TP01-4, TP03-2, TP04-2-1_0.0-0.10, TP04-3_0.40-1.0, TP05-2-0.40-0.70, TP02-2, Triplicate 1, TP06-2, TP01-1, TP01-3, TP03-3_0.00-0.20, TP03-3_1.40-1.60, TP04-2_0.10-0.40, TP05-1-0.00-0.10, TP05-3-0.70-1.00	12-Oct-2021	15-Oct-2021	26-Oct-2021	✓	16-Oct-2021	26-Oct-2021	✓



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Work Order : EM2120163
Client : Pitt & Sherry (Operations) Pty Ltd
Project : 321-323A Elizabeth Street P.29.0421

Matrix: SOIL

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
MM868: Coliforms & E.coli by MPN using Aquachrom ECC							
Sterile Plastic Jar (MM868)							
TP02-1, TP02-3, TP01-3,	TP02-2, TP01-2, TP01-4	12-Oct-2021	----	----	14-Oct-2021	16-Oct-2021	✔

Matrix: WATER

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Petroleum Hydrocarbons							
Amber VOC Vial - Sulfuric Acid (EP080) Trip balnk	13-Oct-2021	13-Oct-2021	27-Oct-2021	✓	13-Oct-2021	27-Oct-2021	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber VOC Vial - Sulfuric Acid (EP080) Trip balnk	13-Oct-2021	13-Oct-2021	27-Oct-2021	✓	13-Oct-2021	27-Oct-2021	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080) Trip balnk	13-Oct-2021	13-Oct-2021	27-Oct-2021	✓	13-Oct-2021	27-Oct-2021	✓

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 Work Order : EM2120163
 Client : Pitt & Sherry (Operations) Pty Ltd
 Project : 321-323A Elizabeth Street P.29.0421



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Benzo(a)pyrene- Waste Classification (TAS requirements)	EP075-TAS	3	21	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Exchangeable Cations on Alkaline Soils	ED006	1	2	50.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Moisture Content	EA055	4	40	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Organic Matter	EP004	2	12	16.67	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	4	37	10.81	10.00	✓	NEPM 2013 B3 & ALS QC Standard
pH in soil using a 0.01M CaCl2 extract	EA001	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	4	39	10.26	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	4	39	10.26	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	4	39	10.26	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	4	35	11.43	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Benzo(a)pyrene- Waste Classification (TAS requirements)	EP075-TAS	2	21	9.52	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Exchangeable Cations on Alkaline Soils	ED006	1	2	50.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Organic Matter	EP004	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	2	37	5.41	5.00	✓	NEPM 2013 B3 & ALS QC Standard
pH in soil using a 0.01M CaCl2 extract	EA001	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	39	5.13	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	39	5.13	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	39	5.13	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	35	5.71	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Benzo(a)pyrene- Waste Classification (TAS requirements)	EP075-TAS	2	21	9.52	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Exchangeable Cations on Alkaline Soils	ED006	1	2	50.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Organic Matter	EP004	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	2	37	5.41	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	39	5.13	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	39	5.13	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	39	5.13	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	35	5.71	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Organic Matter	EP004	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	2	37	5.41	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	39	5.13	5.00	✓	NEPM 2013 B3 & ALS QC Standard



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 Client : Pitt & Sherry (Operations) Pty Ltd
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Matrix: SOIL

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Matrix Spikes (MS) - Continued							
Total Metals by ICP-AES	EG005T	2	39	5.13	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	39	5.13	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	35	5.71	5.00	✔	NEPM 2013 B3 & ALS QC Standard

Matrix: WATER

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
TRH Volatiles/BTEX	EP080	2	18	11.11	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
TRH Volatiles/BTEX	EP080	1	18	5.56	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
TRH Volatiles/BTEX	EP080	1	18	5.56	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
TRH Volatiles/BTEX	EP080	1	18	5.56	5.00	✔	NEPM 2013 B3 & ALS QC Standard

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Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH in soil using a 0.01M CaCl ₂ extract	EA001	SOIL	In house: Referenced to Rayment and Lyons 4B3 (mod.) or 4B4 (mod.) 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM Schedule B(3).
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Particle Size Analysis by Hydrometer	EA150H	SOIL	Particle Size Analysis by Hydrometer according to AS1289.3.6.3
Soil Particle Density	EA152	SOIL	Soil Particle Density by AS 1289.3.5.1: Methods of testing soils for engineering purposes - Soil classification tests - Determination of the soil particle density of a soil - Standard method
Exchangeable Cations on Alkaline Soils	* ED006	SOIL	In house: Referenced to Soil Survey Test Method C5. Soluble salts are removed from the sample prior to analysis. Cations are exchanged from the sample by contact with alcoholic ammonium chloride at pH 8.5. They are then quantitated in the final solution by ICPAES and reported as meq/100g of original soil.
Exchangeable Cations	ED007	SOIL	In house: Referenced to Rayment & Lyons Method 15A1. Cations are exchanged from the sample by contact with Ammonium Chloride. They are then quantitated in the final solution by ICPAES and reported as meq/100g of original soil. This method is compliant with NEPM Schedule B(3).
Exchangeable Cations with pre-treatment	ED008	SOIL	In house: Referenced to Rayment & Lyons Method 15A2. Soluble salts are removed from the sample prior to analysis. Cations are exchanged from the sample by contact with Ammonium Chloride. They are then quantitated in the final solution by ICPAES and reported as meq/100g of original soil. This method is compliant with NEPM Schedule B(3).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3).
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
Organic Matter	EP004	SOIL	In house: Referenced to AS1289.4.1.1. Dichromate oxidation method after Walkley and Black. This method is compliant with NEPM Schedule B(3).
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015 Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM Schedule B(3).
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270. Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3).
Benzo(a)pyrene- Waste Classification (TAS requirements)	EP075-TAS	SOIL	In house: Referenced to USEPA SW 846 - 8270 Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM Schedule B(3).

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Analytical Methods	Method	Matrix	Method Descriptions
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM Schedule B(3) amended.
Coliforms & E.coli in Soils by MPN using Aquachrom ECC	MM868	SOIL	Microbiological analysis subcontracted to ALS Scoresby (NATA Accredited Laboratory No. 992).
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260. Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Preparation Methods	Method	Matrix	Method Descriptions
pH in soil using a 0.01M CaCl ₂ extract	EA001-PR	SOIL	In house: Referenced to Rayment and Lyons 4B1, 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM Schedule B(3).
Exchangeable Cations Preparation Method (Alkaline Soils)	ED006PR	SOIL	In house: Referenced to Rayment and Lyons method 15C1.
Exchangeable Cations Preparation Method	ED007PR	SOIL	In house: Referenced to Rayment & Lyons method 15A1. A 1M NH ₄ Cl extraction by end over end tumbling at a ratio of 1:20. There is no pretreatment for soluble salts. Extracts can be run by ICP for cations.
1:5 solid / water leach following drying at 40°C	EN34-AD	SOIL	10 g of 40°C dried soil is mixed with 50 mL of reagent grade water and tumbled end over end for 1 hour. Water soluble salts are leached from the soil by the continuous suspension. Samples are settled and the water filtered off for analysis.
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion. 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).
Organic Matter	EP004-PR	SOIL	In house: Referenced to AS1289.4.1.1. Dichromate oxidation method after Walkley and Black. This method is compliant with NEPM Schedule B(3).
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na ₂ SO ₄ and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.
Tumbler Extraction of Solids - VIC EPA Screen	ORG17-EM	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na ₂ SO ₄ and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.



QUALITY CONTROL REPORT

Work Order	: EM2120163	Page	: 1 of 14
Client	: Pitt & Sherry (Operations) Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: Jessica Holan	Contact	: Gregory Gommers
Address	:	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: 03 6210 1463	Telephone	: +61-3-8549 9600
Project	: 321-323A Elizabeth Street P.29.0421	Date Samples Received	: 13-Oct-2021
Order number	: ---	Date Analysis Commenced	: 13-Oct-2021
C-O-C number	: 28634	Issue Date	: 20-Oct-2021
Sampler	: JH		
Site	: ---		
Quote number	: ME-769-21		
No. of samples received	: 22		
No. of samples analysed	: 22		



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Aleksandar Vujkovic	Laboratory Technician	Newcastle - Inorganics, Mayfield West, NSW
Dilani Fernando	Laboratory Coordinator	Melbourne Inorganics, Springvale, VIC
Samantha Smith	Assistant Laboratory Manager	WRG Subcontracting, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC



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General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: SOIL

Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 3957986)									
EM2120163-001	TP02-1	EG005T: Cadmium	7440-43-9	1	mg/kg	2	2	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	22	22	0.0	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	17	17	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	8	5	38.8	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	121	117	3.3	0% - 20%
		EG005T: Lead	7439-92-1	5	mg/kg	718	610	16.2	0% - 20%
		EG005T: Zinc	7440-66-6	5	mg/kg	1060	928	13.4	0% - 20%
		EG005T: Iron	7439-89-6	50	mg/kg	35600	33400	6.5	0% - 20%
EM2120163-010	TP01-3	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	12	12	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	16	20	21.2	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	16	17	9.5	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	10	11	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	31	36	16.0	No Limit
		EG005T: Iron	7439-89-6	50	mg/kg	3.46 %	33400	3.7	0% - 20%
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 3957988)									
EM2120163-021	TP05-4-1.00-1.50	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	11	12	9.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	36	35	3.2	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	11	9	24.3	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	5	7	20.5	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	14	16	10.1	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	54	63	14.7	0% - 50%



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Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 3957988) - continued									
EM2120163-021	TP05-4-1.00-1.50	EG005T: Iron	7439-89-6	50	mg/kg	34800	37800	8.1	0% - 20%
EM2120264-009	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	42	38	8.6	0% - 20%
		EG005T: Nickel	7440-02-0	2	mg/kg	34	34	0.0	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	8	8	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	22	21	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	40	37	8.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	101	89	12.3	0% - 20%
		EG005T: Iron	7439-89-6	50	mg/kg	35700	35800	0.0	0% - 20%
EA001: pH in soil using 0.01M CaCl extract (QC Lot: 3960860)									
EM2120158-005	Anonymous	EA001: pH (CaCl2)	----	0.1	pH Unit	7.6	7.6	0.0	0% - 20%
EM2120224-005	Anonymous	EA001: pH (CaCl2)	----	0.1	pH Unit	8.2	8.2	0.0	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3960267)									
EM2120163-001	TP02-1	EA055: Moisture Content	----	0.1	%	19.6	19.6	0.0	0% - 50%
EM2120163-011	TP01-4	EA055: Moisture Content	----	0.1	%	20.4	19.6	4.3	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3960268)									
EM2120163-021	TP05-4-1.00-1.50	EA055: Moisture Content	----	0.1	%	13.4	14.1	5.4	0% - 50%
EM2120264-009	Anonymous	EA055: Moisture Content	----	0.1	%	13.6	13.2	2.7	0% - 50%
ED006: Exchangeable Cations on Alkaline Soils (QC Lot: 3961153)									
EM2120163-005	TP06-1	ED006: Calcium/Magnesium Ratio	----	0.1	-	7.9	7.9	0.0	0% - 20%
		ED006: Magnesium/Potassium Ratio	----	0.1	-	1.8	1.8	0.0	No Limit
		ED006: Exchangeable Calcium Percent	----	0.2	%	82.3	82.4	0.0	0% - 20%
		ED006: Exchangeable Magnesium Percent	----	0.2	%	10.4	10.4	0.0	0% - 20%
		ED006: Exchangeable Potassium Percent	----	0.2	%	5.8	5.8	0.0	0% - 20%
		ED006: Exchangeable Sodium Percent	----	0.2	%	1.5	1.4	8.7	No Limit
		ED006: Exchangeable Calcium	----	0.2	meq/100g	16.6	13.9	17.9	0% - 20%
		ED006: Exchangeable Magnesium	----	0.2	meq/100g	2.1	1.8	17.7	0% - 50%
		ED006: Exchangeable Potassium	----	0.2	meq/100g	1.2	1.0	16.9	No Limit
		ED006: Exchangeable Sodium	----	0.2	meq/100g	0.3	0.2	0.0	No Limit
		ED006: Cation Exchange Capacity	----	0.2	meq/100g	20.2	16.9	18.0	0% - 20%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3957987)									
EM2120163-001	TP02-1	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.5	0.5	0.0	No Limit
EM2120163-010	TP01-3	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3957989)									
EM2120163-021	TP05-4-1.00-1.50	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EM2120264-009	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP004: Organic Matter (QC Lot: 3958956)									
EM2119888-021	Anonymous	EP004: Organic Matter	----	0.5	%	<0.5	<0.5	0.0	No Limit
		EP004: Total Organic Carbon	----	0.5	%	<0.5	<0.5	0.0	No Limit



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Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report							
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)		
EP004: Organic Matter (QC Lot: 3958956) - continued											
EM2120225-008	Anonymous	EP004: Organic Matter	----	0.5	%	1.1	1.1	0.0	No Limit		
		EP004: Total Organic Carbon	----	0.5	%	0.6	0.6	0.0	No Limit		
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3959300)											
EM2120163-001	TP02-1	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	0.8	0.5	44.4	No Limit		
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	2.2	1.7	24.9	No Limit		
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	2.4	1.8	26.3	No Limit		
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	1.3	1.0	30.1	No Limit		
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	1.4	1.1	26.1	No Limit		
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg	1.1	0.9	24.9	No Limit		
			205-82-3								
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	1.5	1.0	36.6	No Limit		
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	1.8	1.2	34.5	No Limit		
		EP075(SIM): Indeno(1,2,3.cd)pyrene	193-39-5	0.5	mg/kg	1.0	0.7	34.1	No Limit		
		EP075(SIM): Dibenzo(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	1.2	0.9	34.6	No Limit		
		EM2120163-011	TP01-4	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
				EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
				EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): Fluorene	86-73-7			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): Phenanthrene	85-01-8			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): Anthracene	120-12-7			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): Fluoranthene	206-44-0			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): Pyrene	129-00-0			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): Benz(a)anthracene	56-55-3			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): Chrysene	218-01-9			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
	205-82-3										
EP075(SIM): Benzo(k)fluoranthene	207-08-9			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): Benzo(a)pyrene	50-32-8			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): Indeno(1,2,3.cd)pyrene	193-39-5			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): Dibenzo(a,h)anthracene	53-70-3			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): Benzo(g,h,i)perylene	191-24-2			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3960177)											
EM2120163-021	TP05-4-1.00-1.50			EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
				EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit



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Work Order : EM2120163
Client : Pitt & Sherry (Operations) Pty Ltd
Project : 321-323A Elizabeth Street P.29.0421

Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3960177) - continued									
EM2120163-021	TP05-4-1.00-1.50	EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
			205-82-3						
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1,2,3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenzo(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EM2120264-011	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
			205-82-3						
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1,2,3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): Dibenzo(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3958144)									
EM2120163-001	TP02-1	EP075-TAS: Benzo(a)pyrene	50-32-8	0.05	mg/kg	1.68	1.79	6.3	0% - 20%
EM2120163-011	TP01-4	EP075-TAS: Benzo(a)pyrene	50-32-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3960166)									
EM2120163-021	TP05-4-1.00-1.50	EP075-TAS: Benzo(a)pyrene	50-32-8	0.05	mg/kg	<0.05	0.05	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3955181)									
EM2120163-001	TP02-1	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EM2120163-011	TP01-4	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit



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 Client : Pitt & Sherry (Operations) Pty Ltd
 Project : 321-323A Elizabeth Street P.29.0421

Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3955183)									
EM2119891-005	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EM2120245-008	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3959301)									
EM2120163-001	TP02-1	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
		EP071: C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	0.0	No Limit
EM2120163-011	TP01-4	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
		EP071: C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3960178)									
EM2120163-021	TP05-4-1.00-1.50	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
		EP071: C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	0.0	No Limit
EM2120264-011	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
		EP071: C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3955181)									
EM2120163-001	TP02-1	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EM2120163-011	TP01-4	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3955183)									
EM2119891-005	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EM2120245-008	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3959301)									
EM2120163-001	TP02-1	EP071: >C16 - C34 Fraction	----	100	mg/kg	120	<100	16.7	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
		EP071: >C10 - C40 Fraction (sum)	----	50	mg/kg	120	<50	82.4	No Limit
EM2120163-011	TP01-4	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
		EP071: >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3960178)									
EM2120163-021	TP05-4-1.00-1.50	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit



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Client : Pitt & Sherry (Operations) Pty Ltd
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Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3960178) - continued									
EM2120163-021	TP05-4-1.00-1.50	EP071: >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	0.0	No Limit
EM2120264-011	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
		EP071: >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	0.0	No Limit
EP080: BTEXN (QC Lot: 3955181)									
EM2120163-001	TP02-1	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EM2120163-011	TP01-4	EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
		EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
EP080: BTEXN (QC Lot: 3955183)									
EM2119891-005	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EM2120245-008	Anonymous	EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
		EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3953750)									
EM2120171-010	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EM2120171-020	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit

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Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3953750)									
EM2120171-010	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EM2120171-020	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP080: BTEXN (QC Lot: 3953750)									
EM2120171-010	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.0	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
EM2120171-020	Anonymous	EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
		EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.0	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit

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Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: SOIL

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3957986)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	123 mg/kg	107	70.0	130
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	1.23 mg/kg	79.4	50.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	20.2 mg/kg	100	70.0	130
EG005T: Copper	7440-50-8	5	mg/kg	<5	55.9 mg/kg	98.3	70.0	130
EG005T: Iron	7439-89-6	50	mg/kg	<50	33227 mg/kg	109	70.0	130
EG005T: Lead	7439-92-1	5	mg/kg	<5	62.4 mg/kg	96.3	70.0	130
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.4 mg/kg	96.5	70.0	130
EG005T: Zinc	7440-66-6	5	mg/kg	<5	162 mg/kg	80.9	70.0	130
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3957988)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	123 mg/kg	106	70.0	130
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	1.23 mg/kg	77.7	50.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	20.2 mg/kg	99.6	70.0	130
EG005T: Copper	7440-50-8	5	mg/kg	<5	55.9 mg/kg	97.9	70.0	130
EG005T: Iron	7439-89-6	50	mg/kg	<50	33227 mg/kg	110	70.0	130
EG005T: Lead	7439-92-1	5	mg/kg	<5	62.4 mg/kg	95.7	70.0	130
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.4 mg/kg	95.6	70.0	130
EG005T: Zinc	7440-66-6	5	mg/kg	<5	162 mg/kg	80.4	70.0	130
EA001: pH in soil using 0.01M CaCl extract (QCLot: 3960860)								
EA001: pH (CaCl2)	----	----	pH Unit	----	4 pH Unit	101	98.8	101
				----	7 pH Unit	100	99.3	101
ED006: Exchangeable Cations on Alkaline Soils (QCLot: 3961153)								
ED006: Exchangeable Calcium	----	0.2	meq/100g	<0.2	33 meq/100g	81.1	66.6	101
ED006: Exchangeable Magnesium	----	0.2	meq/100g	<0.2	32 meq/100g	76.2	66.9	120
ED006: Exchangeable Potassium	----	0.2	meq/100g	<0.2	2.2 meq/100g	94.9	72.8	119
ED006: Exchangeable Sodium	----	0.2	meq/100g	<0.2	5.6 meq/100g	84.1	67.5	112
ED006: Cation Exchange Capacity	----	0.2	meq/100g	<0.2	----	----	----	----
ED006: Exchangeable Calcium Percent	----	0.2	%	<0.2	----	----	----	----
ED006: Exchangeable Magnesium Percent	----	0.2	%	<0.2	----	----	----	----
ED006: Exchangeable Potassium Percent	----	0.2	%	<0.2	----	----	----	----
ED006: Exchangeable Sodium Percent	----	0.2	%	<0.2	----	----	----	----
ED006: Calcium/Magnesium Ratio	----	0.1	-	<0.1	----	----	----	----
ED006: Magnesium/Potassium Ratio	----	0.1	-	<0.1	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3957987)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.64 mg/kg	94.5	70.0	130



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Work Order : EM2120163
Client : Pitt & Sherry (Operations) Pty Ltd
Project : 321-323A Elizabeth Street P.29.0421

Sub-Matrix: SOIL

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3957989)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.64 mg/kg	96.9	70.0	130
EP004: Organic Matter (QCLot: 3958956)								
EP004: Organic Matter	----	0.5	%	<0.5	77 %	89.0	70.0	130
EP004: Total Organic Carbon	----	0.5	%	<0.5	43.5 %	91.3	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3959300)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	3 mg/kg	102	85.7	123
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	3 mg/kg	105	81.0	123
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	3 mg/kg	108	83.6	120
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	3 mg/kg	103	81.3	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	3 mg/kg	103	79.4	123
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	3 mg/kg	113	81.7	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	3 mg/kg	110	78.3	124
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	3 mg/kg	110	79.9	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	3 mg/kg	109	76.9	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	3 mg/kg	114	80.9	130
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg	<0.5	3 mg/kg	99.2	70.0	121
	205-82-3							
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	3 mg/kg	107	80.4	130
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	3 mg/kg	113	70.2	123
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	3 mg/kg	95.2	67.9	122
EP075(SIM): Dibenzo(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	3 mg/kg	97.9	65.8	123
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	3 mg/kg	97.7	65.8	127
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3960177)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	3 mg/kg	101	85.7	123
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	3 mg/kg	97.4	81.0	123
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	3 mg/kg	97.8	83.6	120
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	3 mg/kg	98.2	81.3	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	3 mg/kg	98.4	79.4	123
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	3 mg/kg	97.0	81.7	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	3 mg/kg	97.1	78.3	124
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	3 mg/kg	98.5	79.9	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	3 mg/kg	101	76.9	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	3 mg/kg	97.6	80.9	130
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg	<0.5	3 mg/kg	98.3	70.0	121
	205-82-3							
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	3 mg/kg	103	80.4	130
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	3 mg/kg	91.6	70.2	123
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	3 mg/kg	83.1	67.9	122



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Client : Pitt & Sherry (Operations) Pty Ltd
Project : 321-323A Elizabeth Street P.29.0421

Sub-Matrix: SOIL

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3960177) - continued								
EP075(SIM): Dibenzo(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	3 mg/kg	82.2	65.8	123
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	3 mg/kg	79.2	65.8	127
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 3958144)								
EP075-TAS: Benzo(a)pyrene	50-32-8	0.05	mg/kg	<0.05	2 mg/kg	134	77.5	134
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 3960166)								
EP075-TAS: Benzo(a)pyrene	50-32-8	0.05	mg/kg	<0.05	2 mg/kg	131	77.5	134
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3955181)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	36 mg/kg	108	58.6	131
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3955183)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	36 mg/kg	102	58.6	131
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3959301)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	840 mg/kg	103	75.0	128
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	2900 mg/kg	100	82.0	123
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	1490 mg/kg	98.9	82.4	121
EP071: C10 - C36 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3960178)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	840 mg/kg	92.8	75.0	128
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	2900 mg/kg	96.6	82.0	123
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	1490 mg/kg	92.4	82.4	121
EP071: C10 - C36 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3955181)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	45 mg/kg	107	59.3	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3955183)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	45 mg/kg	96.6	59.3	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3959301)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	1110 mg/kg	99.5	77.0	130
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	3900 mg/kg	99.3	81.5	120
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	290 mg/kg	103	73.3	137
EP071: >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3960178)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	1110 mg/kg	95.6	77.0	130
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	3900 mg/kg	92.8	81.5	120
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	290 mg/kg	91.3	73.3	137
EP071: >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----
EP080: BTEXN (QCLot: 3955181)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	2 mg/kg	101	61.6	117
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	2 mg/kg	104	65.8	125

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Client : Pitt & Sherry (Operations) Pty Ltd
Project : 321-323A Elizabeth Street P.29.0421



Sub-Matrix: SOIL

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP080: BTEXN (QCLot: 3955181) - continued								
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	2 mg/kg	100	65.8	124
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	4 mg/kg	102	64.8	134
	106-42-3							
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	2 mg/kg	102	68.7	132
EP080: Naphthalene	91-20-3	1	mg/kg	<1	0.5 mg/kg	99.4	61.8	123
EP080: BTEXN (QCLot: 3955183)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	2 mg/kg	98.4	61.6	117
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	2 mg/kg	102	65.8	125
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	2 mg/kg	99.1	65.8	124
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	4 mg/kg	97.9	64.8	134
	106-42-3							
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	2 mg/kg	98.8	68.7	132
EP080: Naphthalene	91-20-3	1	mg/kg	<1	0.5 mg/kg	86.2	61.8	123

Sub-Matrix: WATER

Sub-Matrix: WATER				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3953750)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	86.6	66.2	134
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3953750)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	94.3	66.2	132
EP080: BTEXN (QCLot: 3953750)								
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	95.9	68.8	127
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	91.2	72.9	129
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	95.1	71.7	130
EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	40 µg/L	96.2	72.3	136
	106-42-3							
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	97.1	75.9	134
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	102	68.3	131

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: SOIL

Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	Spike Recovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3957986)							
EM2120163-002	TP02-2	EG005T: Arsenic	7440-38-2	50 mg/kg	100	78.0	124

Sub-Matrix: SOIL

Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method; Compound	CAS Number	Concentration	MS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3957986) - continued							
EM2120163-002	TP02-2	EG005T: Cadmium	7440-43-9	50 mg/kg	98.8	79.7	116
		EG005T: Chromium	7440-47-3	50 mg/kg	95.5	79.0	121
		EG005T: Copper	7440-50-8	250 mg/kg	101	80.0	120
		EG005T: Lead	7439-92-1	250 mg/kg	102	80.0	120
		EG005T: Nickel	7440-02-0	50 mg/kg	104	78.0	120
		EG005T: Zinc	7440-66-6	250 mg/kg	98.8	80.0	120
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3957988)							
EM2120264-002	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	101	78.0	124
		EG005T: Cadmium	7440-43-9	50 mg/kg	102	79.7	116
		EG005T: Chromium	7440-47-3	50 mg/kg	99.5	79.0	121
		EG005T: Copper	7440-50-8	250 mg/kg	106	80.0	120
		EG005T: Lead	7439-92-1	250 mg/kg	106	80.0	120
		EG005T: Nickel	7440-02-0	50 mg/kg	96.1	78.0	120
		EG005T: Zinc	7440-66-6	250 mg/kg	103	80.0	120
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3957987)							
EM2120163-002	TP02-2	EG035T: Mercury	7439-97-6	0.5 mg/kg	102	76.0	116
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3957989)							
EM2120264-002	Anonymous	EG035T: Mercury	7439-97-6	0.5 mg/kg	103	76.0	116
EP004: Organic Matter (QCLot: 3958956)							
EM2119888-029	Anonymous	EP004: Organic Matter	----	2.52179 %	75.8	70.0	120
		EP004: Total Organic Carbon	----	1.46263 %	75.8	70.0	120
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3959300)							
EM2120163-003	TP02-3	EP075(SIM): Acenaphthene	83-32-9	3 mg/kg	105	77.2	116
		EP075(SIM): Pyrene	129-00-0	3 mg/kg	121	65.5	136
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3960177)							
EM2120264-002	Anonymous	EP075(SIM): Acenaphthene	83-32-9	3 mg/kg	90.2	77.2	116
		EP075(SIM): Pyrene	129-00-0	3 mg/kg	91.1	65.5	136
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3955181)							
EM2120163-002	TP02-2	EP080: C6 - C9 Fraction	----	28 mg/kg	61.0	33.4	124
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3955183)							
EM2119891-011	Anonymous	EP080: C6 - C9 Fraction	----	28 mg/kg	90.4	33.4	124
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3959301)							
EM2120163-002	TP02-2	EP071: C10 - C14 Fraction	----	840 mg/kg	102	71.2	125
		EP071: C15 - C28 Fraction	----	2900 mg/kg	99.3	75.6	122
		EP071: C29 - C36 Fraction	----	1490 mg/kg	97.4	78.0	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3960178)							



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Client : Pitt & Sherry (Operations) Pty Ltd
Project : 321-323A Elizabeth Street P.29.0421

Sub-Matrix: SOIL

Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3960178) - continued							
EM2120262-008	Anonymous	EP071: C10 - C14 Fraction	----	840 mg/kg	# 49.8	71.2	125
		EP071: C15 - C28 Fraction	----	2900 mg/kg	88.4	75.6	122
		EP071: C29 - C36 Fraction	----	1490 mg/kg	92.2	78.0	120
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3955181)							
EM2120163-002	TP02-2	EP080: C6 - C10 Fraction	C6_C10	33 mg/kg	56.5	30.8	120
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3955183)							
EM2119891-011	Anonymous	EP080: C6 - C10 Fraction	C6_C10	33 mg/kg	85.7	30.8	120
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3959301)							
EM2120163-002	TP02-2	EP071: >C10 - C16 Fraction	----	1110 mg/kg	98.5	72.2	128
		EP071: >C16 - C34 Fraction	----	3900 mg/kg	98.0	76.5	119
		EP071: >C34 - C40 Fraction	----	290 mg/kg	103	66.8	138
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3960178)							
EM2120262-008	Anonymous	EP071: >C10 - C16 Fraction	----	1110 mg/kg	# 51.5	72.2	128
		EP071: >C16 - C34 Fraction	----	3900 mg/kg	90.2	76.5	119
		EP071: >C34 - C40 Fraction	----	290 mg/kg	93.4	66.8	138
EP080: BTEXN (QCLot: 3955181)							
EM2120163-002	TP02-2	EP080: Benzene	71-43-2	2 mg/kg	75.5	54.4	127
		EP080: Toluene	108-88-3	2 mg/kg	76.1	57.1	131
EP080: BTEXN (QCLot: 3955183)							
EM2119891-011	Anonymous	EP080: Benzene	71-43-2	2 mg/kg	98.3	54.4	127
		EP080: Toluene	108-88-3	2 mg/kg	103	57.1	131

Sub-Matrix: WATER

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3953750)							
EM2120171-001	Anonymous	EP080: C6 - C9 Fraction	----	280 µg/L	79.8	33.9	126
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3953750)							
EM2120171-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	77.9	34.0	122
EP080: BTEXN (QCLot: 3953750)							
EM2120171-001	Anonymous	EP080: Benzene	71-43-2	20 µg/L	100.0	56.3	133
		EP080: Toluene	108-88-3	20 µg/L	94.9	60.4	132

pitt&sherry



Environmental Site Assessment

321-323A and 325 Elizabeth Street, North Hobart

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Lefroy Street Car Park Extension

Noise Impact Assessment Report

Prepared for
City of Hobart

Client representative
Glenn Doyle

Date
17 December 2021

Rev00

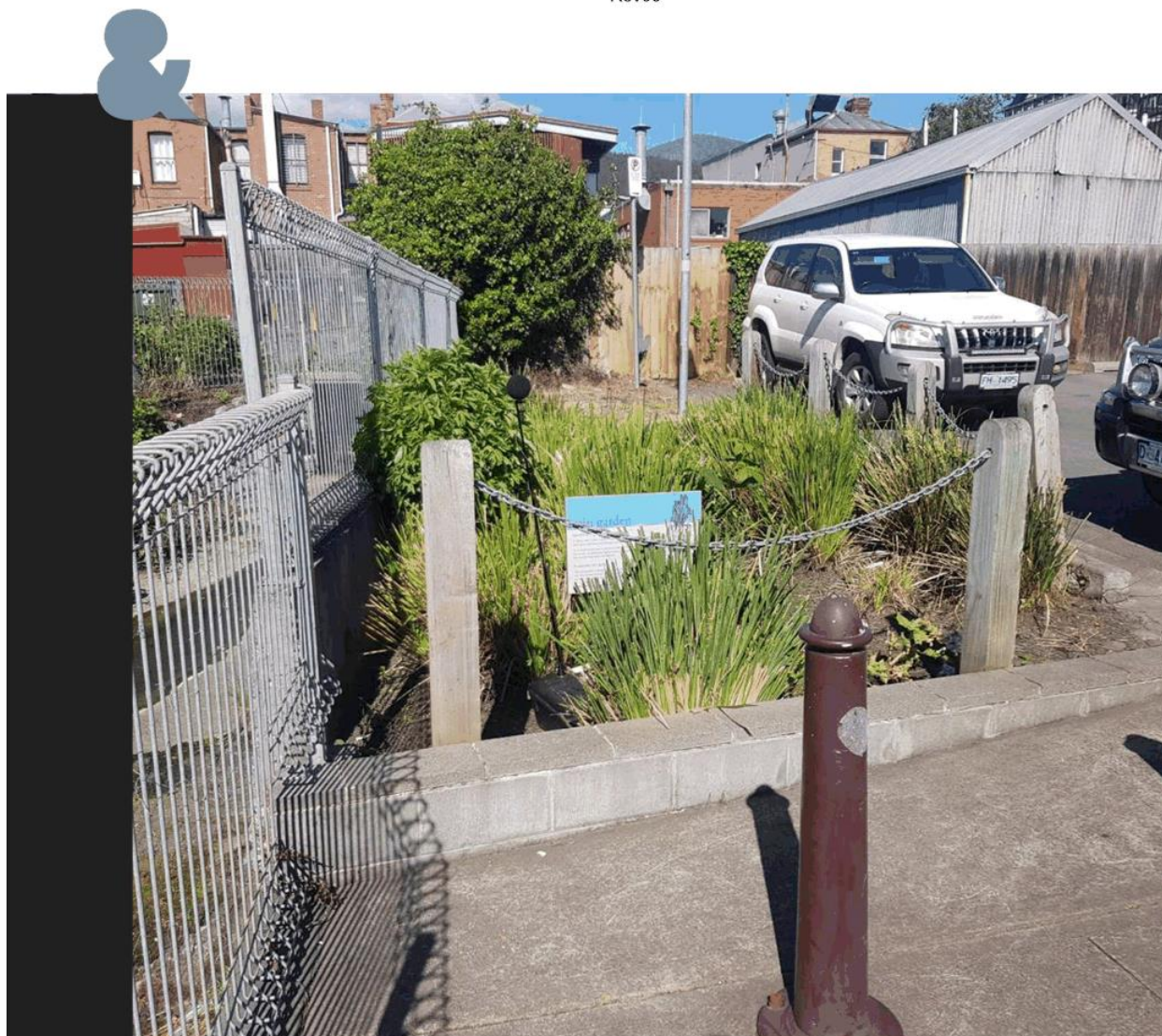


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Prepared by — Alex Seen / Douglas Ford		Date — 17 December 2021
Reviewed by — Leigh Knight		Date — 17 December 2021
Authorised by — Andy Turner		Date — 17 December 2021

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Executive Summary

This noise assessment has been prepared to support the development application for an extension to the existing 'Lefroy Street car park', located at 16A Lefroy Street, North Hobart. The car park extension is proposed to include 321A-323 and 325 Elizabeth Street, North Hobart and will include up to 32 additional spaces. The existing car park currently has 34 spaces. Access to the proposed new parking area will be via the existing car park with a new bridge structure proposed to span the Providence Rivulet.

Several two storey blocks of flats adjoin directly onto the existing car park and extension area. Ambient noise in the area is dominated by traffic noise from Argyle and Elizabeth Street as well as noise from the nearby commercial activities, especially in the evening due to the restaurants and cafes along Elizabeth Street.

A recent traffic survey indicates that vehicle movements in the existing car park peaks at around 40 vehicle movements per hour at midday. Noise logging was undertaken between the 31st of October 2021 and 3rd of November 2021 to capture the existing ambient noise environment.

A noise model was developed to predict the additional noise at the nearby residences, due to the car park extension.

The predicted noise levels were found to comply with the noise requirements of the *Hobart Interim Planning Scheme* 2015.

1. Introduction

This noise assessment has been prepared to support the development application for an extension to the existing 'Lefroy Street car park', located at 16A Lefroy Street, North Hobart. The site is situated within an *Inner Residential* zone under the *Hobart Interim Planning Scheme, 2015*, with some *General Business* and *Light Industrial* zones located nearby. The site and surrounding area is shown in Figure 1. The car park will provide up to an additional 32 parking spaces. The existing car park layout and the proposed layout is shown in Figure 3 and 3 below. Access to the proposed new parking area will be via the existing car park with a new bridge structure proposed to span the Providence Rivulet.

Several two storey blocks of flats adjoin directly onto the existing car park and extension area. These flats can be seen clearly at the top (the NE side of the car park) of Figure 2. There are a number of other residences nearby, but most other adjoining premises are retail or food service businesses, typically with private car parking areas close to the boundary with the car park.



Figure 1: Site location including planning scheme zones, existing Lefroy Street car park (Green) and proposed expansion (Red) (Base image source: theList Maps)



Figure 3: Existing Lefroy Street car park (34 parking spaces)



Figure 2: Proposed car park expansion with 32 additional spaces (pitt&sherry concept drawing RevC dated 11/11/2021)



2. Noise Assessment Criteria

The *Hobart Interim Planning Scheme 2015* specifies allowable noise levels for developments including car parks within *Inner Residential* zones, in Clause 11.3.1, *Non-Residential Use* which is reproduced below.

Hobart Interim Planning Scheme 2015, Inner Residential Zone, Clause 11.3.1 Non-Residential Use

Objective: To ensure that non-residential use does not unreasonably impact residential amenity.

Acceptable Solutions	Performance Criteria
A2	P2
Noise emissions measured at the boundary of the site must not exceed the following: (a) 55 dB(A) (LAeq) between the hours of 8.00 am to 6.00 pm; (b) 5dB(A) above the background (LA90) level or 40dB(A) (LAeq), whichever is the lower, between the hours of 6.00 pm to 8.00 am; (c) 65dB(A) (LAmax) at any time.	Noise emissions measured at the boundary of the site must not cause environmental harm.

Measurement of noise levels must be in accordance with the methods in the Tasmanian Noise Measurement Procedures Manual, issued by the Director of Environmental Management, including adjustment of noise levels for tonality and impulsiveness. Noise levels are to be averaged over a 15 minute time interval.

3. Existing Noise Environment

3.1 Existing Noise Sources

Ambient noise in the area is dominated by traffic noise from Argyle and Elizabeth Street as well as noise from nearby commercial activities, especially in the evening due to the restaurants and cafes along Elizabeth Street.

A recent traffic survey indicates that vehicle movements in the existing car park peaks at around 40 vehicle movements per hour at midday (12 pm to 1 pm), remaining relatively consistent over both weekdays and weekends. Weekday morning and afternoon peak hour (9 am to 10 am and 4 pm to 5 pm) traffic into and out of the existing car park is approximately 8 vehicle movements per hour.

3.2 Onsite Noise Monitoring

The existing noise environment at the flats adjoining the existing car park was monitored for a three day period between the 31st of October 2021 and 3rd of November 2021 using a *Ngara* noise logger, set up and operated in accordance with the Tasmanian DEPHA, *Noise Measurements Manual*, 2008. The noise logger was located at the back of existing car park, close to one of the most affected residences, adjoining the site of the new car park (refer Figure 4).

Figure 5 below, shows a plot of the L_{Aeq} , the continuous equivalent noise level, which can be thought of as an average noise level over a period of time, the L_{A90} or background noise level and the L_{Amax} , the maximum noise level recorded at 10 minute time intervals. The plot shows a daily variation typical of an inner urban setting, where noise levels rise quickly from about 5am, remain high during the day, and fall slowly from around 6pm till around midnight.

The minimum background noise levels recorded were 45dB(A) overnight and 47dB(A) during daytime hours.

Table 1 shows the aggregated noise results for the three day period. The data used to calculate these results has been filtered to remove some short periods of rain and/or strong wind.



Figure 4: Location of noise logger at Lefroy Street car park

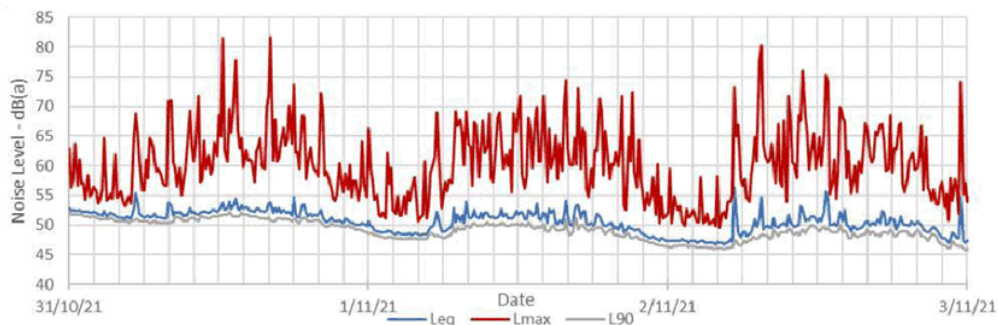


Figure 5: Noise logging results

Table 1: Aggregated noise results

Parameter	24 Hour average	Day (8am - 6pm)	Night (6pm - 8am)
Leq	50.7	51.5	50.1
L90	49.2	49.8	48.7
Lmax	81.7	81.7	80.2

4. Noise Modelling

4.1 Noise Sources

The estimated peak daytime (8 am to 6 pm) utilisation of the extended car park is 80 vehicle movements per hour and 16 vehicle movements per hour at night (6 pm to 8 am). This has been estimated by doubling the results from the traffic study results as the proposed number of additional spaces is similar to the existing number of spaces. So in effect the number of car spots is almost doubling. This is the equivalent of 20 vehicles running simultaneously over a 15 minute period during the daytime and 4 cars for a 15 minute period during the night time period. A 15 minute period has been used for the modelling to match the measurement period specified in Clause 11.3.1 A2 of the planning scheme.

An average sound power level of 47 dB(A) for a vehicle travelling at less than 30 km/h on a sealed surface was obtained from the *SoundPLAN* reference library. The maximum noise level of short duration noise peaks due to common car related 'noise events' such as car doors or boots being closed, car engines starting etc was also sourced from the

SoundPLAN reference library. Sound power levels for these events range between 94.1 and 98.4 dB(A).

4.2 Methodology and Assumptions

Noise modelling was carried out in accordance with the Tasmanian DEPHA *Noise Measurement Procedures Manual*, 2008. Noise level calculations were implemented using *SoundPLAN 8.1* environmental noise modelling software. Modelling assumptions and settings include:

- The ISO 9613-2 noise calculation standard was used within SoundPLAN
- Existing buildings, roads and other permanent structures and features were included within the model. All building footprints were sourced from *theList*
- Existing terrain topography was obtained from 1 metre LIDAR data sourced from the ELVIS online elevation database
- A ground absorption factor of 100% hard was used throughout the model
- Three scenarios were modelled; a daytime $L_{eq,15min}$, night time $L_{eq,15min}$ and L_{max} scenario
- Vehicles moving in the car park were modelled as line sources, describing typical paths travelled by cars from the entrance of the existing car park, through to parking spaces spread out through the extension and existing parts of the car park. In the daytime scenario of the 20 cars allowed for; 12 were assumed to be moving and represented as line sources, and 8 were assumed to be stationary and represented as point sources; and
- For the L_{max} scenario, peak noise events were modelled as point sources located close to the nearest adjoining flats.



Figure 6: SoundPLAN noise model plan views, Left: daytime scenario, Right: night time scenario

4.3 Results

Table 2 shows the results from noise model at the adjoining flats at locations R1 to R8 as indicated in Figure 6 above. These locations are all on or very close to the boundary of the car park, except for locations R5, R6 and R8 which are residences a short distance back from the boundary. Figure 7 shows a noise contour map of the car park extension during the daytime and night time L_{eq} respectively.

Table 2: SoundPLAN noise modelling results

Receiver	Daytime - L_{eq} (8am to 6pm)	Night Time - L_{eq} (6pm to 8am)	L_{max} - Anytime
Acceptable Solution Limits:	55.0	40.0	65.0
R1 - Ground Floor	52.2	43.4	41.4
R1 - First Floor	50.0	41.2	44.2
R2 - Ground Floor	49.2	42.8	38.3
R2 - First Floor	48.0	40.8	45.4
R3 - Ground Floor	39.1	33.9	45.7
R3 - First Floor	39.8	34.3	60.0
R4 - Ground Floor	37.2	33.5	71.7
R4 - First Floor	37.1	33.3	70.1
R5 - Ground Floor	28.7	22.0	53.0
R5 - First Floor	30.7	24.6	55.0
R6 - Ground Floor	29.7	23.0	54.8
R6 - First Floor	32.2	26.3	59.6
R7 - Ground Floor	47.7	38.5	51.2
R8 - Ground Floor	42.3	32.9	37.0

Acceptable Solution

It can be seen that the predicted noise levels at most of these locations meet the limits specified in the Acceptable Solution under Clause 11.3.1 of the planning scheme. However, the predicted night time L_{eq} noise levels at R1 and R2 and the predicted L_{max} noise levels at R4 exceed the acceptable solution limits by a small margin. These are further evaluated against the performance criteria below.

Performance Criteria

The performance criteria requires that 'noise emissions measured at the boundary of the site must not cause environmental harm'.

The *Tasmanian Environmental Protection Policy (Noise) 2009*, the 'EPP', provides a table of acoustic guideline indicator levels which may be used to assess the likely impact of environmental noise on various activities. The guideline levels for avoidance of sleep disturbance are an L_{eq} and L_{max} of 45 and 60dB(A) respectively, measured outside an open bedroom window. This reduces to 30 and 45 dB(A) respectively, when measured inside a bedroom. It also provides measures for avoiding 'Moderate Annoyance' and 'Serious Annoyance' for people engaged in for 'outdoor daytime living' activities in their yards, of L_{eq} equals 50dB(A) and 55dB(A) respectively. These measures relate to the combined total noise level experienced at a location, which is made up of noise from the activity being considered as well as noise from all other sources in the area, such as traffic and other commercial premises, etc.

The night time noise logging L_{eq} result of 50.1 dB(A) already exceeds the EPP sleep disturbance criterium of 45 dB(A). If the predicted L_{eq} noise level of 43.3 dB(A) at R1 is logarithmically added to the existing noise level of 50.1 dB(A), the combined noise level is 50.9 dB(A) which is a negligible change. For noisy urban locations such as this, quiet indoor conditions can only be achieved if windows are kept closed. For a modern residential building with closed double glazed windows, a noise reduction of 30 dB can be expected from outside to inside. This would result in a noise level of 20.9 dB(A) inside the bedroom, which complies with the EPP L_{eq} sleep disturbance criterium of 30 dB(A) inside a bedroom. Similarly the largest predicted L_{max} result of 71.7 dB(A) at R4 would be 41.7 dB(A) inside the bedroom, meeting the EPP

sleep disturbance L_{max} limit of 45 dB(A) inside a bedroom.

On this basis it may be concluded that the predicted noise emissions from the extended car park, that exceed the limits specified in the Acceptable Solution are sufficiently low that they will not cause environmental harm, and thus meet the requirements of the Performance Criteria.

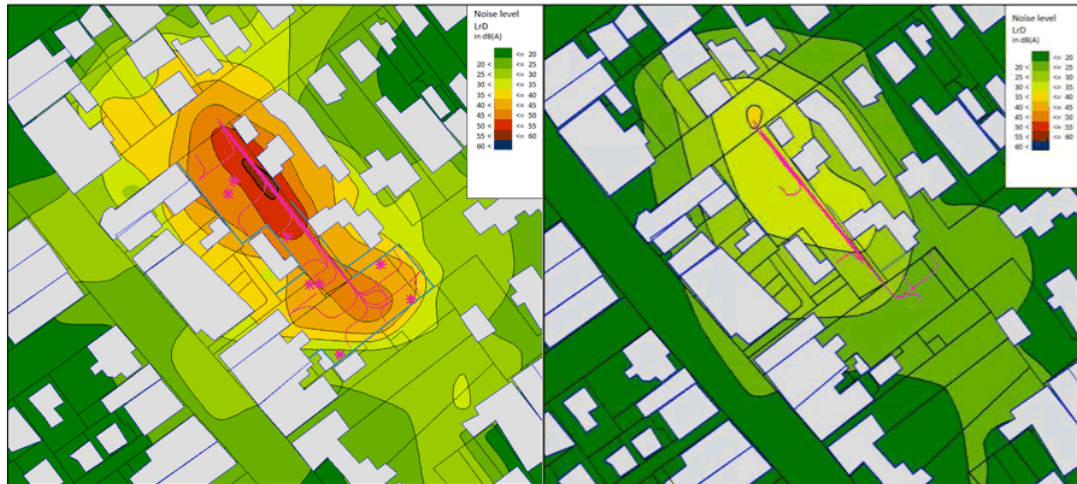


Figure 7: SoundPLAN noise model noise contour maps, Left: Extended daytime car park, Right: Extended night-time car park

5. Conclusions

The proposed extension of the Lefroy Street Car park is expected to make a negligible change to the noise levels experienced by nearby residences.

On the basis of this noise assessment it may be concluded that noise emissions from the proposed car park extension will meet the requirements of the Acceptable Solution of Clause 11.3.1 of the *Hobart Interim Planning Scheme, 2015* at most locations. At the locations where the Acceptable Solution is not met, the Performance Criteria is met.



Lefroy Street Car Park Extension

Noise Impact Assessment Report

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Sydney
Brisbane
Hobart
Launceston
Newcastle
Devonport



pitt&sherrySpecialist Knowledge.
Practical Solutions.

Geotechnical Investigation Memo

To Glenn Doyle, City of Hobart

From pitt&sherry

Date 28 March 2022

RE 321-323A and 325 Elizabeth Street Car Park Geotechnical Investigation

Introduction

City of Hobart (Council) intend to develop the site located at 321-323A Elizabeth Street, North Hobart into a public car park. The new car park will serve as an extension to the existing Lefroy Street car park owned by Council with a bridge linkage to be provided across the Providence Valley Rivulet between the two sites. The car park development will also include new pavement and potentially a retaining wall running along the south-eastern side of the rivulet.

At Council's request, on October 12th 2021, several test pit excavations were undertaken by pitt&sherry Project Geologist at the proposed car park redevelopment site.

Site Description and Geology

The test site is located within a mixed commercial/residential zone in North Hobart and was unpaved at the time of investigation. The site is adjacent to surface exposure of the Providence Valley Rivulet. Figure 1 provides an aerial view of the site with the test pit locations shown labelled as 'TP'.



Figure 1: Site aerial photograph showing designed test pit locations (Base image source: Google Earth satellite imagery)

The local geology at the site consists of Quaternary alluvium in the Providence Valley Rivulet basin, surrounded by quartz-rich Permian sandstones and siltstones. This is shown on Figure 2 and further description provided in Table 1.

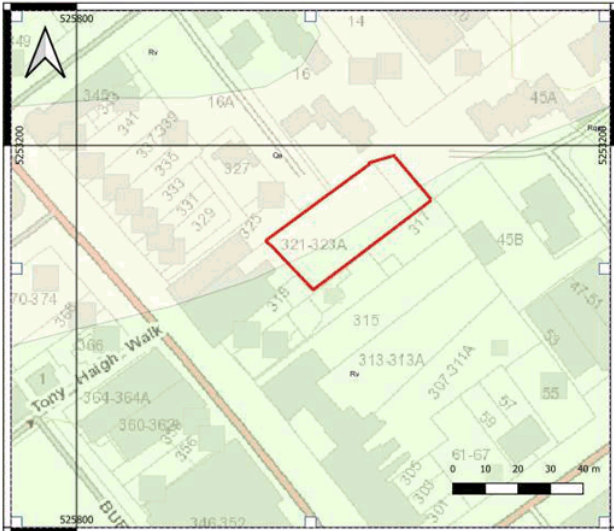


Figure 2: 1:25,000 scale mapped geology with test site outlined in red(Source: Mineral Resources Tasmania, accessed Nov 2021)

Table 1: Legend for mapped geology at the site (Source: Mineral Resources Tasmania accessed Nov 2021)

Symbol	Description
Rv	Undifferentiated volcanoclastic, quartz-rich lithic and quartzose sandstone/siltstone
Qa	Alluvial gravel, sand, and clay

Geotechnical Investigation

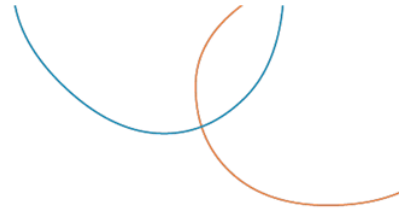
Test Pits

A total of six test pits were excavated on site. Of these, two were logged and sampled for geotechnical assessment. The logs for these two test pits are attached in Appendix A.

The remaining four test pits were excavated as part of the environmental contamination assessment testing. The environmental investigation is discussed separately, refer pitt&sherry report T-P.19.0421-05-ENV-REP-002.

Laboratory Testing

Samples were sent to the NATA endorsed Qualtech Tas (Hazell Bros) laboratory for Standard soaked CBR testing. The results from this testing as provided by Qualtech are included in Appendix B.



Subsurface Conditions

All test pits displayed similar soil profiles within the test area. These profiles broadly comprised three layers:

1. Dark, clayey topsoil down to ~0.5m per pit
2. Dense, medium- to high-plasticity clay down to ~1-1.2m; and
3. Loose clayey sand at the base of the pit (all pits dug to 1.5m terminal depth).

Despite proximity to the Providence Valley Rivulet, groundwater was not observed in any of the test pits.

Engineering Recommendations

Pavement Design

Test Pits LFYTP01 and LFYTP06 (refer to Appendix B) were logged as part of the geotechnical investigation. Both logs indicate that the topsoil depth is 400-500 mm thick. The topsoil will need to be stripped and removed prior to any pavement construction. Disturbance and excavation of this contaminated material will need to be in accordance with the SWMP.

The CBR values of the subgrade encountered at the site were in the range of 2% to 8% as documented in Appendix B. It is recommended that the new car park pavement is designed to a CBR of 2% due to this variability across the site.

The finished surface levels of the carpark may lead to the need for fill material to be placed between the subgrade and pavement layers. The fill material should be considered in the pavement layer thickness design. It is suggested that a Type A fill material with the properties shown in Table 2 be used.

Table 2: Type A fill material properties

CBR	6%	
Swell	<1.5%	
Permeability (max) m/s	5×10^{-9}	
Limits of grading (% passing by mass)	75 mm	100%
	37.5 mm	-
	4.75 mm	40-80%
	0.425 mm	-
	0.075 mm	10-40%
PI x % passing 0.425mm Post Compaction (max)	1000	
PI Range Post Compaction	6-25	

The following pavement layer configuration is provided as a guide and is based on a new finished surface level of close to the existing surface level and a design traffic loading of 4×10^3 which has been adopted from Table 12.2: *Indicative heavy vehicle axle group volumes for lightly trafficked urban streets, Austroads Guide to Pavement Technology Part 2: Pavement Structural Design*.

Table 3: Indicative pavement layers

Pavement Layer	Material	Thickness
Wearing Course	N14 Asphalt with waterproof seal	40 mm
Base Course	Class 2 Crushed Rock	150 mm
Subbase Course	Class 3 Crushed Rock	150 mm
Capping/Fill Layer	Type A (CBR6)	200 mm (min – varies)
Subgrade	Natural ground (CBR2)	-

Foundations

It is understood that the design for the new car park will include a new bridge structure and potentially a new cantilever retaining wall running parallel to the rivulet on its south-eastern side.

Based on the visual inspection carried out at the site, the currently exposed rivulet bedrock appears to consist of a quartz-rich sandstone outcrop. This is shown on Figure 3 below.



Figure 3: Outcrop of massive sandstone observed at Providence Rivulet Creek bed (Source: pitt&sherry, 2021)

Our site personnel undertook a field test of the rock strength as per AS 1726. The test found the rock strength to be 'High', i.e., the Uniaxial Compressive Strength (USC) is estimated to be in the order of 30 MPa. It is anticipated that if the currently observable site conditions remain the same during construction of the future bridge and possible retaining wall structures, uniaxial failure mode will govern the design strength of the rock.

Based on these assumptions, an ultimate bearing capacity of 4-5 MPa is anticipated for the existing rivulet creek bedrock and should be considered in the structural design of the bridge and possible retaining wall.

Given the proximity of the bedrock to the surface, it is recommended that the new structures are founded directly onto this bedrock with engineering fill material used as backfill.

Yours sincerely



Joshua Hniat
Project Manager / Civil Engineer

Enc. Appendix A - Test Pit Logs (LFYTP01 and LFYTP06)
Appendix B - Qualtech CBR Testing Reports



Test Pit Logs (LFYTP01 and LFYTP06)

|

Appendix A

pitt&sherry



Engineering Log Excavation

 Pit Number
LFYTP01

Project Number: P.19.0421

Client:	City of Hobart			Date Commenced:	12/10/2021				
Project Name:	Lefroy St Carpark redevelopment			Date Completed:	12/10/2021				
Hole Location:	SW corner			Date Backfilled:	12/10/2021				
Easting:	525872	mE	Northing:	5253176	mN	Logged By:	M. Abbott	Date:	12/10/2021
Zone:	55		Datum:	WGS84		Checked By:	A. Tyson	Date:	28/10/2021
Operator:	Seaton		Excavation Dimensions: 1.2x0.4		Equipment Type:		Komatsu 4.5t		

1 Penetration	Water	Samples Tests Remarks	Depth (m)	Graphic Log	Classification Symbol	Material Description (primarily but not exclusively as per AS1726:2017) MAIN COMPONENT: plasticity or particle characteristics, with secondary and minor components, colour. Origin	Moisture Condition	Consistency or Density Index	Correlated Shear Strength (kPa) ● PP ● SV	Dynamic Cone Penetrometer Blows/100mm	CBR Correlated from Dynamic Cone Penetrometer Measurements
1			0								
2		LFYTP01-01	0.5		OH	TOPSOIL: Silty CLAY; low to medium plasticity, dark brown. With sand (30%) fine to medium grained. Organic.	w ≈ PL	St		18	
3		LFYTP01-02	1.0		CI - CH	CLAY; medium to high plasticity, light brown. With sand (20%) fine grained.	w ≈ PL	St		6	
		LFYTP01-03	1.5		SC	Clayey SAND; well graded, medium grained, subrounded, light brown. Clay (20%) low to medium plasticity.	D - M			5	
			2.0							4	

Location Image



Excavation Detail



Penetration No resistance ranging to refusal ▽ Level (Date) ▽ Inflow ▽ Partial Loss ▽ Complete Loss	Samples and Tests B - Bulk Sample D - Disturbed Sample Weathering RS - Residual XW - Extremely Weathered HW - Highly Weathered MW - Moderately Weathered SW - Slightly Weathered FR - Fresh	Moisture Condition Granular D - Dry M - Moist W - Wet Consistency VS - Very Soft S - Soft F - Firm St - Stiff VSt - Very Stiff H - Hard Fb - Friable	Moisture Condition Cohesive w<PL Below plastic limit w=PL Equal to plastic limit w>PL Above plastic limit w<LL Equal to liquid limit w>LL Above liquid limit Relative Density VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense	Laboratory Values LL - Liquid Limit PL - Plastic Limit PI - Plasticity Index LS - Linear Shrinkage w - Moisture Content MDD - Maximum Dry Density OMC - Optimum Moisture Content OLC - Optimum Lime Content Classification Symbols and Soil Descriptions Based on AS1726:2017	DCP to CBR correlation methodology after Austroads (1992) Pocket penetrometer correlated to shear strength $S_u = PP/2$ Shear Vane correlated to shear strength as per calibration data
---	--	---	--	---	---






Engineering Log Excavation

Pit Number
LFYTP06

Project Number: P.19.0421

Client:	City of Hobart	Date Commenced:	12/10/2021				
Project Name:	Lefroy St Carpark redevelopment	Date Completed:	12/10/2021				
Hole Location:	NE corner	Date Backfilled:	12/10/2021				
Easting:	525891 mE	Northing:	5253188 mN	Logged By:	M. Abbott	Date:	12/10/2021
Zone:	55	Datum:	WGS84	Checked By:	A. Tyson	Date:	28/10/2021
Operator:	Seaton	Excavation Dimensions:	1.2x0.4	Equipment Type:	Komatsu 4.5t		

1 Penetration	2 Water	3 Samples Tests Remarks	4 Depth (m)	5 Graphic Log	6 Classification Symbol	7 Material Description (primarily but not exclusively as per AS1726:2017) MAIN COMPONENT: plasticity or particle characteristics, with secondary and minor components, colour. Origin	8 Moisture Condition	9 Consistency or Density Index	10 Correlated Shear Strength (kPa) ● PP ● SV	11 Dynamic Cone Penetrometer Blows/100mm	12 CBR Correlated from Dynamic Cone Penetrometer Measurements
			0		CI	TOPSOIL: Silty CLAY; medium plasticity, dark brown. With sand (30%) fine to medium grained.	w < PL	St		4	
			0.5		CI - CH	CLAY; medium to high plasticity, dark brown. Trace of sand (10%) fine to medium grained.	w ≈ PL	St	●	4	
			1							6	
			1.5		SC	Clayey SAND; well graded, fine to medium grained, subangular to subrounded, light brown. Clay (30%) low to medium plasticity.	D - M		●	4	
			2								

Location Image



Excavation Detail



Penetration
 No resistance
 ranging to
 refusal

Samples and Tests
 B - Bulk Sample
 D - Disturbed Sample

Weathering

RS - Residual
 XW - Extremely Weathered
 HW - Highly Weathered
 MW - Moderately Weathered
 SW - Slightly Weathered
 FR - Fresh

Moisture Condition

Granular
 D - Dry
 M - Moist
 W - Wet

Consistency

VS - Very Soft
 S - Soft
 F - Firm
 St - Stiff
 VSt - Very Stiff
 H - Hard
 Fb - Friable

Moisture Condition Cohesive

w<PL Below plastic limit
 w=PL Equal to plastic limit
 w>PL Above plastic limit
 w<LL Equal to liquid limit
 w>LL Above liquid limit

Relative Density

VL - Very Loose
 L - Loose
 MD - Medium Dense
 D - Dense
 VD - Very Dense

Laboratory Values

LL - Liquid Limit
 PL - Plastic Limit
 PI - Plasticity Index
 LS - Linear Shrinkage
 w - Moisture Content
 MDD - Maximum Dry Density
 OMC - Optimum Moisture Content
 OLC - Optimum Lime Content

DCP to CBR correlation
 methodology after Austroads (1992)

Pocket penetrometer correlated to
 shear strength $S_u = PP/2$

Shear Vane correlated to shear strength
 as per calibration data

Classification Symbols and Soil Descriptions

Based on AS1726:2017



Qualtech CBR Testing Reports

Appendix B

pitt&sherry

Material Test Report

Report Number: P21038-1
Issue Number: 1
Date Issued: 09/11/2021
Client: PITT & SHERRY
 PO BOX 1409, LAUNCESTON TAS 7250
Project Number: P21038
Project Name: Lefroy
Work Request: 737
Sample Number: S-737A
Date Sampled: 01/11/2021
Dates Tested: 01/11/2021 - 04/11/2021
Sampling Method: Sampled by Client
The results apply to the sample as received
Preparation Method: AS 1289.1.1 - Sampling and preparation of soils
Site Selection: Selected by Client
Sample Location: Lefroy
Lot No: LFYTP01-1



QUALTECH (TAS) Pty Ltd
 Qual Tech Leslie Vale Laboratory
 Leslie Road, Leslie Vale Kingston TAS 7050
 Phone: (03) 6213 7164
 Email: Ethan.Pursell@qualtechtas.com.au
 Accredited for compliance with ISO/IEC 17025 - Testing



Approved Signatory: Ethan Pursell
 Operations Support - Sth
 NATA Accredited Laboratory Number: 4044

California Bearing Ratio (AS 1289 6.1.1 & 2.1.1)		Min	Max
CBR taken at	5 mm		
CBR %	8		
Method of Compactive Effort	Standard		
Method used to Determine MDD	AS 1289 5.1.1 & 2.1.1		
Method used to Determine Plasticity	Estimated		
Maximum Dry Density (t/m ³)	1.68		
Optimum Moisture Content (%)	18.0		
Laboratory Density Ratio (%)	98.0		
Laboratory Moisture Ratio (%)	101.0		
Dry Density after Soaking (t/m ³)	1.64		
Field Moisture Content (%)	20.5		
Moisture Content at Placement (%)	18.4		
Moisture Content Top 30mm (%)	19.9		
Moisture Content Rest of Sample (%)	19.3		
Mass Surcharge (kg)	4.5		
Soaking Period (days)	4		
Curing Hours	64.2		
Swell (%)	0.0		
Oversize Material (mm)	19		
Oversize Material Included	Excluded		
Oversize Material (%)	0.0		

Material Test Report

Report Number: P21038-1
Issue Number: 1
Date Issued: 09/11/2021
Client: PITT & SHERRY
 PO BOX 1409, LAUNCESTON TAS 7250
Project Number: P21038
Project Name: Lefroy
Work Request: 737
Sample Number: S-737B
Date Sampled: 01/11/2021
Dates Tested: 01/11/2021 - 04/11/2021
Sampling Method: Sampled by Client
The results apply to the sample as received
Preparation Method: AS 1289.1.1 - Sampling and preparation of soils
Site Selection: Selected by Client
Sample Location: Lefroy
Lot No: LFYTP01-2



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Approved Signatory: Ethan Pursell
 Operations Support - Sth
 NATA Accredited Laboratory Number: 4044

California Bearing Ratio (AS 1289 6.1.1 & 2.1.1)		Min	Max
CBR taken at	2.5 mm		
CBR %	3.5		
Method of Compactive Effort	Standard		
Method used to Determine MDD	AS 1289 5.1.1 & 2.1.1		
Method used to Determine Plasticity	Estimated		
Maximum Dry Density (t/m ³)	1.60		
Optimum Moisture Content (%)	19.0		
Laboratory Density Ratio (%)	98.0		
Laboratory Moisture Ratio (%)	100.5		
Dry Density after Soaking (t/m ³)	1.51		
Field Moisture Content (%)	22.8		
Moisture Content at Placement (%)	19.0		
Moisture Content Top 30mm (%)	24.3		
Moisture Content Rest of Sample (%)	20.1		
Mass Surcharge (kg)	4.5		
Soaking Period (days)	4		
Curing Hours	78.7		
Swell (%)	3.5		
Oversize Material (mm)	19		
Oversize Material Included	Excluded		
Oversize Material (%)	0.0		

Material Test Report

Report Number: P21038-1
Issue Number: 1
Date Issued: 09/11/2021
Client: PITT & SHERRY
 PO BOX 1409, LAUNCESTON TAS 7250
Project Number: P21038
Project Name: Lefroy
Work Request: 737
Sample Number: S-737C
Date Sampled: 01/11/2021
Dates Tested: 01/11/2021 - 04/11/2021
Sampling Method: Sampled by Client
The results apply to the sample as received
Preparation Method: AS 1289.1.1 - Sampling and preparation of soils
Site Selection: Selected by Client
Sample Location: Lefroy
Lot No: LFYTP01-3



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Approved Signatory: Ethan Pursell
 Operations Support - Sth
 NATA Accredited Laboratory Number: 4044

California Bearing Ratio (AS 1289 6.1.1 & 2.1.1)		Min	Max
CBR taken at	5 mm		
CBR %	2.0		
Method of Compactive Effort	Standard		
Method used to Determine MDD	AS 1289 5.1.1 & 2.1.1		
Method used to Determine Plasticity	Estimated		
Maximum Dry Density (t/m ³)	1.66		
Optimum Moisture Content (%)	19.5		
Laboratory Density Ratio (%)	98.0		
Laboratory Moisture Ratio (%)	100.5		
Dry Density after Soaking (t/m ³)	1.56		
Field Moisture Content (%)	22.3		
Moisture Content at Placement (%)	19.6		
Moisture Content Top 30mm (%)	27.2		
Moisture Content Rest of Sample (%)	22.8		
Mass Surcharge (kg)	4.5		
Soaking Period (days)	4		
Curing Hours	65.7		
Swell (%)	4.5		
Oversize Material (mm)	19		
Oversize Material Included	Excluded		
Oversize Material (%)	0.0		



**321-323A Elizabeth Street Car
Park**

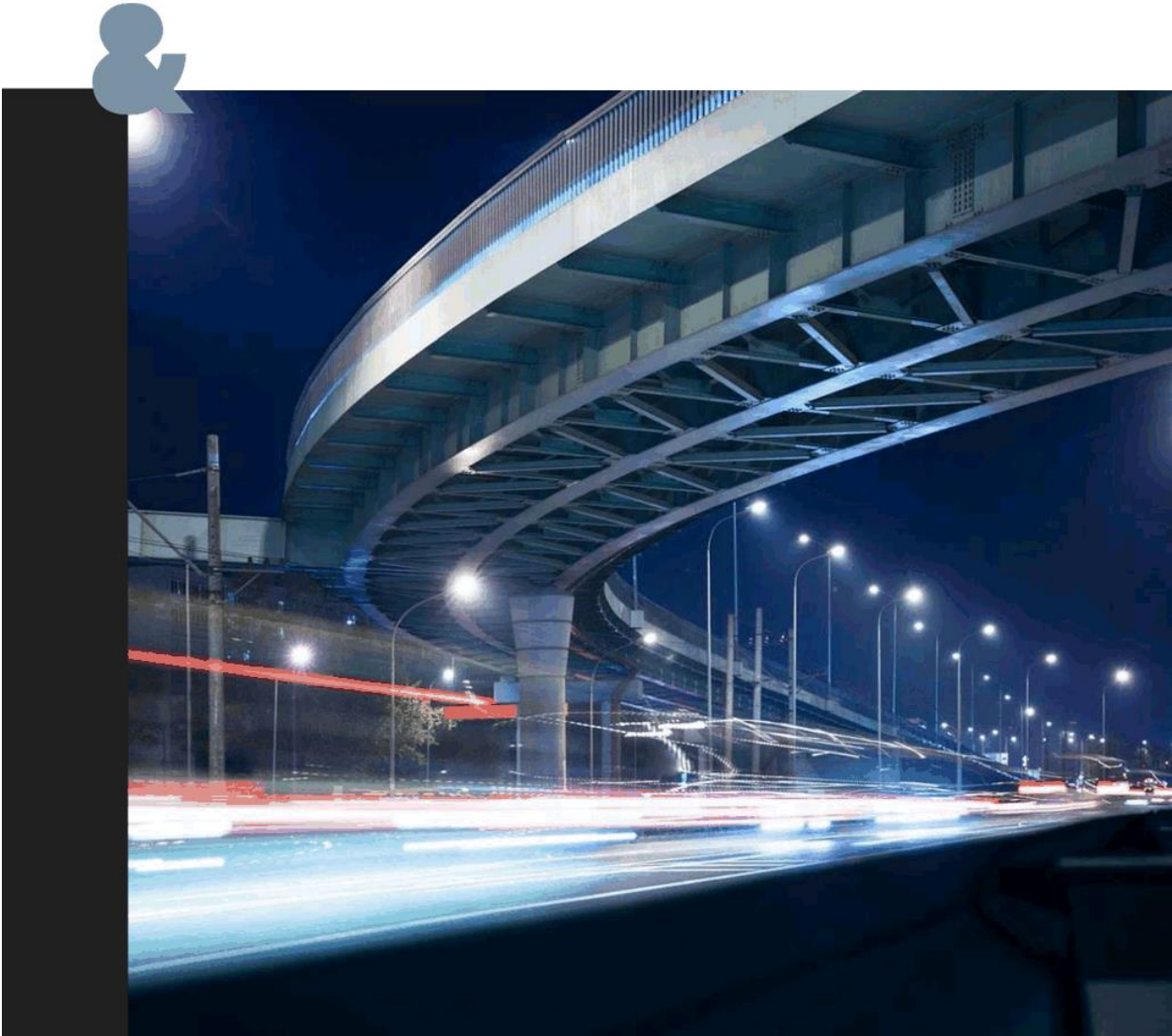
Traffic Impact Assessment

Prepared for
City of Hobart

Client representative
Glenn Doyle

Date
29 March 2022

Rev00



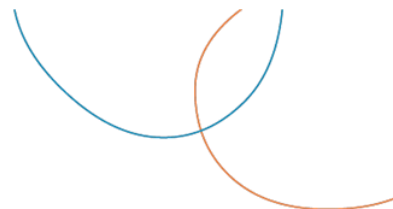


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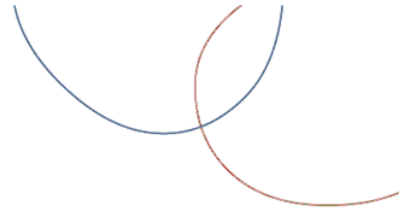
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- Appendix A — Preliminary Site Plans
- Appendix B — SIDRA Results - Existing
- Appendix C — SIDRA Results - Post Development
- Appendix D — SIDRA Results - 10-years Post Development
- Appendix E — Swept Paths - 8.8 m MRV

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1. Introduction

The City of Hobart (Council) have signed a lease agreement with the owner of 321-323A and 325 Elizabeth Street, Hobart, with the intention of developing the site into a public car park. The car park is proposed to serve as an extension to the existing Lefroy Street car park owned by Council with a bridge linkage to be provided across Providence Rivulet between the two sites.

City of Hobart has engaged pitt&sherry to undertake a Traffic Impact Assessment (TIA) for the proposed development.

This report has been prepared with reference to the *Hobart Interim Planning Scheme 2015* (the Planning Scheme) and in accordance with the Department of State Growth's (DSG's) Publication *Traffic Impact Assessment Guidelines* and details the findings of the traffic assessment carried out for the proposed development.

2. Existing Conditions

2.1 Site Location

The site is located at 16A Lefroy Street, 321-323A Elizabeth Street and 325 Elizabeth Street in North Hobart. The site has frontages on both Lefroy Street and Elizabeth Street and is located approximately 1.5 km north-west of the Elizabeth Street Mall.

The site predominantly has a land use classification of 11.0 Inner Residential except for the first approximately 30 m extending from the Elizabeth Street frontage which falls within 21.0 General Business under the Planning Scheme. The site is currently being utilised as a public car park at 16A Lefroy Street and a private car park at the rear of land parcels 321-323A Elizabeth Street and 325 Elizabeth Street. Surrounding land uses include 21.0 General Business to the west and 24.0 Light Industrial to the east.

The location of the site in the local context is shown below in Figure 1.



Figure 1: Site location and land use classifications with existing conditions labelled (Basemap source: <https://maps.theist.tas.gov.au>)

2.2 Site Access

The existing public car park located at 16A Lefroy Street is currently accessed via Lefroy Street. 321-323A Elizabeth Street and 325 Elizabeth Street are accessed via a private right of way off Elizabeth Street.

The site accesses and lot boundaries are shown below in Figure 2.



Figure 2: Access to each site and lot boundaries (Basemap source: <https://maps.thelist.tas.gov.au>)

2.3 Surrounding Road Network

2.3.1 Lefroy Street

Lefroy Street is a Council owned two-way local road¹ configured with a single lane in each direction. Lefroy Street operates in a north-east south-west direction and connects to Argyle Street and Elizabeth Street. It features ½-hour to 2-hour unpaid car parking along its length on both sides. It also features motorcycle parking which is located directly outside the 16A Lefroy Street frontage and two kerbside disabled parking spaces.

Lefroy Street is approximately 8.5 m wide, is subject to the Tasmanian urban road default speed limit of 50 km/h and carries approximately 1,200 vehicles per day².

¹ Based on theLIST Road Centrelines Transport Class.

² Daily traffic volumes calculated using collected peak hour traffic data and assuming a peak to daily ratio of 10%.



2.3.2 Elizabeth Street

Elizabeth Street is a Council owned arterial road configured with a single lane in each direction in the vicinity of the site. Elizabeth Street operates in a north-west south-east direction and spans from the Elizabeth Street Pier to the intersection with Augusta Road, where it then continues as New Town Road. Elizabeth Street features multiple signalised intersections and a roundabout near the site.

Elizabeth Street, in the vicinity of the site, is approximately 12.5 m wide and features ¼ hour to ½ hour unpaid car parking on both sides of the road. It has a sign-posted speed limit of 40 km/h and carries approximately 13,000 vehicles per day³.

2.3.3 Argyle Street

Argyle Street is a Council owned arterial road⁴ configured with a single lane in each direction in the vicinity of the site. It operates in a north-west south-east direction and spans from Franklin Wharf to New Town Road. Argyle Street features multiple signalised intersections and a signalised pedestrian crossing near the site.

Argyle Street varies in width, but typically features parking on either side of the carriageway. It is subject to the Tasmanian urban road default speed limit of 50 km/h and carries approximately 15,000 vehicles per day³.

2.4 Surrounding Intersections

The following intersections are located in close proximity to the proposed development.

- Elizabeth Street / Lefroy Street - give-way T-intersection;
- Argyle Street / Lefroy Street - give-way T-intersection; and
- Lefroy Street / Car Park Access - give-way T-intersection.

2.5 Existing Traffic Volumes

Traffic surveys were undertaken by Matrix Traffic and Transport Data on Thursday 14th October and Saturday 23rd October 2021. The former was completed during the AM peak hour, the midday peak hour and the afternoon peak hour at times of 9:00 am - 10:00 am, 11:00 am - 1:00 pm and 4:00 pm to 5:00 pm, respectively. On the Saturday, traffic counts were conducted during the midday peak period, from 11:00 am to 1:00 pm. Traffic counts were completed at the following intersections:

- Lefroy Street / Car Park Access intersection;
- Elizabeth Street / Lefroy Street intersection; and
- Argyle Street / Lefroy Street intersection.

It was determined from the survey data that the midday peak hour on both weekdays and weekends was from 12:00 pm to 1:00 pm.

To account for yearly growth on the road network from 2021, the time of the survey, to 2022, a growth rate of 2% was added to the traffic volumes.

Calculated traffic volumes at each of the three intersections during the weekday AM, midday and PM peak hour, as well as the weekend midday peak hour are shown below in Figure 3 to Figure 6.

³ Daily traffic volumes calculated using collected peak hour traffic data and assuming a peak to daily ratio of 10%.

⁴ Based on the LIST Road Centrelines Transport Class.

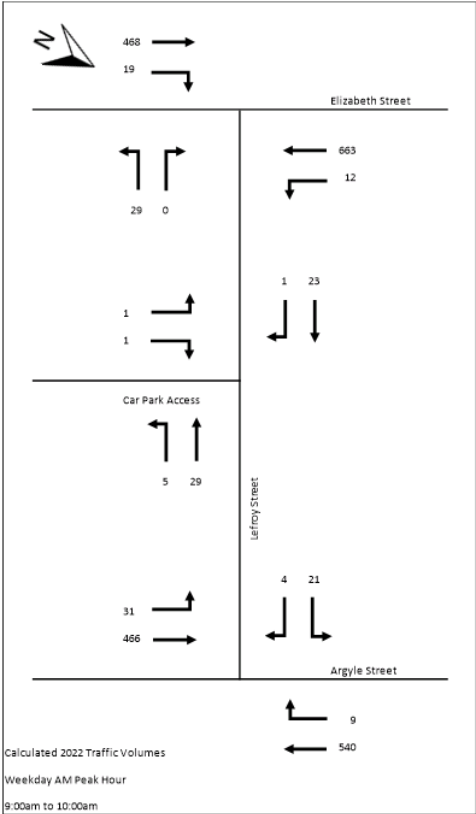


Figure 3: Intersection traffic volumes – Existing weekday AM peak hour

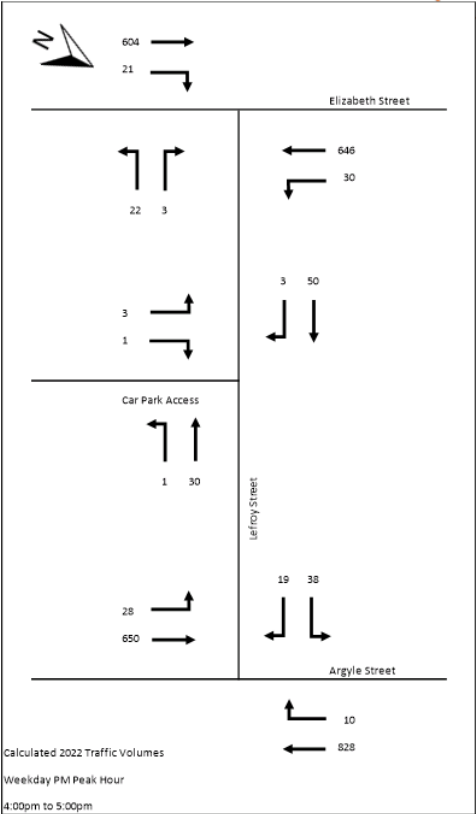


Figure 4: Intersection traffic volumes – Existing weekday PM peak hour

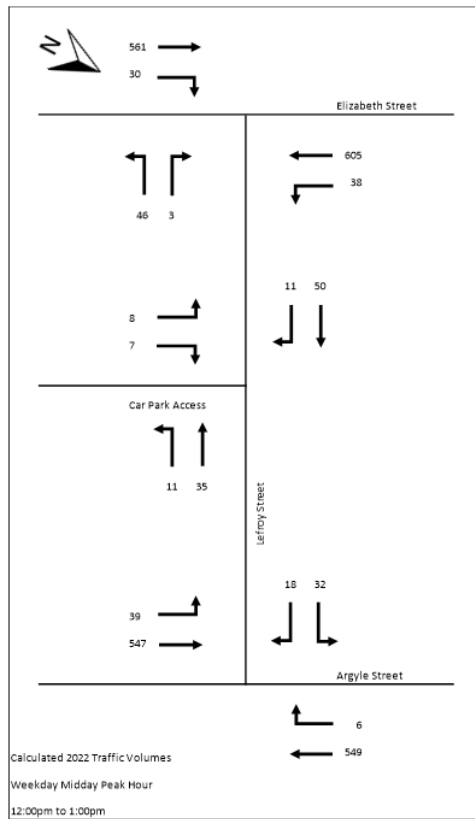


Figure 5: Intersection traffic volumes – Existing weekday midday peak hour

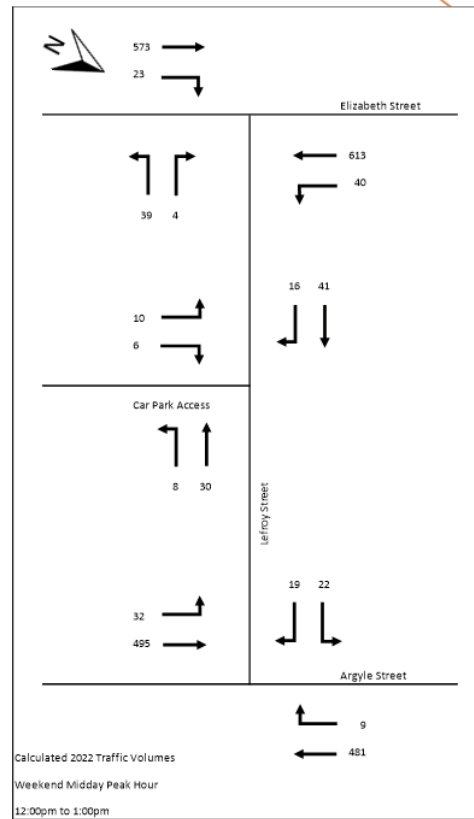


Figure 6: Intersection traffic volumes – Existing weekend midday peak hour

2.6 Existing Intersection Operation

2.6.1 Traffic Modelling Software

The operation of the intersections has been modelled using SIDRA Intersection 9.0 traffic modelling software. SIDRA Intersection rates the performance of the intersections based on the vehicle delay and the corresponding Level of Service (LOS). It is generally accepted that LOS D or better is an acceptable level of operation. Table 1 shows the criteria that SIDRA Intersection adopts in assessing the LOS.

Table 1: SIDRA Intersection Level of Service (LOS) criteria

LOS	Delay per Vehicle (secs)		
	Signals	Roundabout	Sign Control
A	10 or less	10 or less	10 or less
B	10 to 20	10 to 20	10 to 15
C	20 to 35	20 to 35	15 to 25

LOS	Delay per Vehicle (secs)		
	Signals	Roundabout	Sign Control
D	35 to 55	35 to 50	25 to 35
E	55 to 80	50 to 70	35 to 50
F	Greater than 80	Greater than 70	Greater than 50

2.6.2 Intersection Layouts

The geometry of the Elizabeth Street / Lefroy Street intersection, the Argyle Street / Lefroy Street intersection and the Lefroy Street / Car Park Access intersection used for the SIDRA 9.0 traffic model was developed with reference to aerial photography obtained from theLIST. The aerial photography informed the width and length of trafficable lanes.

The geometry of the Elizabeth Street / Lefroy Street intersection, the Argyle Street / Lefroy Street intersection and the Lefroy Street / Car Park Access intersection used in the SIDRA 9.0 model are shown below in Figure 7 to Figure 9.

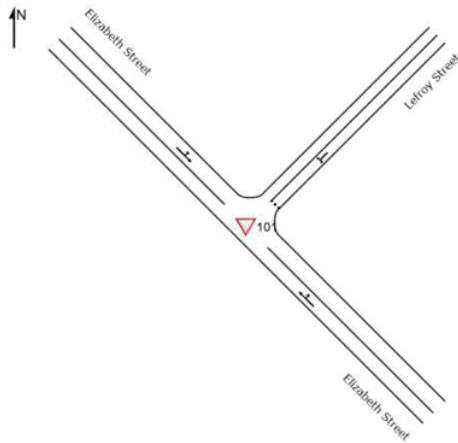


Figure 7: Geometric layout – Elizabeth Street / Lefroy Street intersection

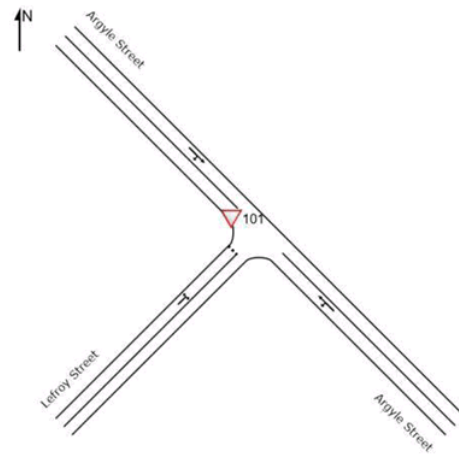


Figure 8: Geometric layout – Argyle Street / Lefroy Street intersection

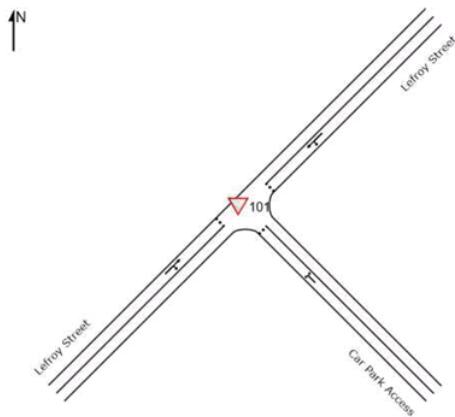
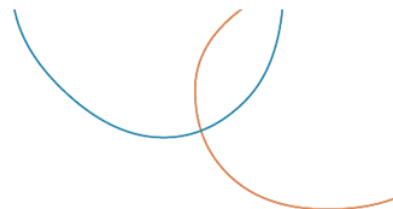


Figure 9: Geometric layout – Lefroy Street / Car Park Access intersection




2.6.3 Traffic Modelling Results

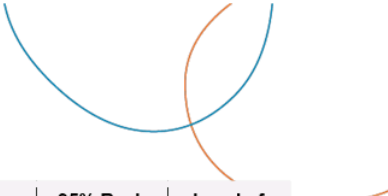
A summary of the traffic modelling results at each of the three intersections is shown in Table 2. Full results are included in Appendix B.

Table 2: SIDRA Intersection traffic modelling results - existing

Intersection	Peak Hour	Leg	Degree of Saturation	Average delay (secs)	95% Back of Queue	Level of Service
Elizabeth Street / Lefroy Street intersection	AM	South-east – Elizabeth Street	0.27	1	2	A
		North-east – Lefroy Street	0.031	7	1	A
		North-west – Elizabeth Street	0.36	0	0	A
		All Vehicles	0.36	0	2	A
	Weekday Middy	South-east – Elizabeth Street	0.33	1	4	A
		North-east – Lefroy Street	0.05	7	1	A
		North-west – Elizabeth Street	0.34	0	0	A
		All Vehicles	0.34	1	4	A
	PM	South-east – Elizabeth Street	0.35	1	3	A
		North-east – Lefroy Street	0.03	7	1	A
		North-west – Elizabeth Street	0.36	0	0	A
		All Vehicles	0.36	1	3	A
Argyle Street/ Lefroy Street intersection	AM	South-east – Elizabeth Street	0.33	1	3	A
		North-east – Lefroy Street	0.04	7	1	A
		North-west – Elizabeth Street	0.35	0	0	A
		All Vehicles	0.35	1	3	A



Intersection	Peak Hour	Leg	Degree of Saturation	Average delay (secs)	95% Back of Queue	Level of Service
		South-west – Lefroy Street	0.02	6	1	A
		All Vehicles	0.31	0	1	A
	Weekday MIDDAY	South-east – Argyle Street	0.33	0	0	A
		North-west – Argyle Street	0.31	0	1	A
		South-west – Lefroy Street	0.05	7	1	A
		All Vehicles	0.33	0	1	A
	PM	South-east – Argyle Street	0.38	0	0	A
		North-west – Argyle Street	0.47	0	2	A
		South-west – Lefroy Street	0.08	8	2	A
		All Vehicles	0.47	1	2	A
	Weekend MIDDAY	South-east – Argyle Street	0.29	0	0	A
		North-west – Argyle Street	0.27	0	1	A
		South-west – Lefroy Street	0.04	7	1	A
		All Vehicles	0.29	0	1	A
Lefroy Street/ Car Park Access intersection	AM	South-east – Car park Access	0.00	1	0	A
		North-east – Lefroy Street	0.02	3	0	A
		South-west – Lefroy Street	0.01	3	0	A
		All Vehicles	0.02	3	0	A
	Weekday MIDDAY	South-east – Car park Access	0.01	1	0	A
		North-east – Lefroy Street	0.03	4	0	A
		South-west – Lefroy Street	0.03	4	1	A



Intersection	Peak Hour	Leg	Degree of Saturation	Average delay (secs)	95% Back of Queue	Level of Service
	PM	All Vehicles	0.03	3	1	A
		South-east – Car park Access	0.00	0	0	A
		North-east – Lefroy Street	0.02	3	0	A
		South-west – Lefroy Street	0.03	3	1	A
		All Vehicles	0.03	3	1	A
	Weekend Midday	South-east – Car park Access	0.01	1	0	A
		North-east – Lefroy Street	0.02	4	0	A
		South-west – Lefroy Street	0.03	4	1	A
		All Vehicles	0.03	3	1	A

Based on the results above, the intersections surrounding the Lefroy Street car park currently perform at LOS A at all approaches. Thus, minimal queues and delays are experienced by vehicles at the intersections surrounding the Lefroy Street car park under the existing conditions.

2.7 Crash History

Department of State Growth have provided crash data along Lefroy Street, including the Elizabeth Street / Lefroy Street intersection and the Argyle Street / Lefroy Street intersection. The data provided was for a 5-year period. A summary of the crash data is included in Table 3.

Table 3: Crash history of surrounding road network in the vicinity of the proposed site

Location	Crash Type	Crash Severity	Count
Lefroy Street	131 – Vehicles in same lane / left rear	Property Damage Only	1
	141 – U turn into fixed object or parked vehicle		1
	144 – Parking vehicles only		1
	146 – Reversing into fixed object or parked vehicle		2
	160 – Parked		1
	169 – Other on path		3

The crash history provided shows that 9 crashes have occurred along Lefroy Street in the most recent 5-year period, all of which caused property damage only and thus were of low impact. The crashes did not indicate any crash patterns of concern to road and pedestrian safety.

2.8 Car Parking

Kerbside car parking is permitted along much of Lefroy Street, which varies between ½ hour and 2-hour in duration. This includes accessible parking and motorcycle parking as previously mentioned. Reserved off-street parking exists at 27-29 Lefroy Street.

The existing Lefroy Street car park features 22 paid public parking spaces with a 3-hour restriction and a further 12 spaces at the rear which are for Council permit holders only. This is shown in Figure 10 below. The car park operates between 8.30 am and 10.00 pm.



Figure 10: Existing car park

2.9 Public Transport

North Hobart is well serviced by public transport with Metro Tasmania bus stops located within 400 m of the proposed site on both Elizabeth Street and Argyle Street. During weekdays, buses typically operate from 6:30 am to 12:30 am and arrive at stops in 20 to 30-minute intervals during typical working hours.

2.10 Pedestrian and Cyclist Facilities

Pedestrian footpaths are located on all roads in the vicinity of the site. Elizabeth Street and Argyle Street feature signalised pedestrian crossings to assist pedestrians to cross the road. Furthermore, on Argyle Street, in the vicinity of the site, on-road bicycle lanes exist on both sides of the road and operate in the direction of traffic flow.



Figure 12: Preliminary site plan - 16A Lefroy Street car park (Source: pitt&sherry preliminary drawing S-P.19.0421-CIV-DRG-131)

3.2 Site Access and Circulation Road

Access and egress to the site is proposed to be via the existing car park access off Lefroy Street. The access is 6.7 m wide.

The existing right of way from Elizabeth Street is proposed to be converted to a pedestrian and restricted vehicle access via implementation of lockable bollards at either end. The five tenants who currently have access to the right of way, as well as Council and emergency services, will be able to use the restricted vehicle access by way of a master key. As such, other vehicles entering and exiting the car park post development will be required to use the car park access off Lefroy Street. This will significantly improve pedestrian safety in the right of way and will enable easier access for delivery vehicles to the rear of these tenancies.

At the existing Lefroy Street car park, the circulation road is typically between 5.7 m wide and 6.2 m wide, however it narrows at the permit holders only section to approximately 5.3 m wide and furthermore to 4.8 m wide directly north of the proposed bridge. As a result, the permit holders only section of the circulation road is proposed to feature one-way shuttle flow. A hold line is located on the northbound lane of the bridge to enable vehicles to stop and wait for vehicles travelling in the opposing direction. The sight line to the north of the hold line extends to the site access. Within the new section of the proposed development, at 321-323A and 325 Elizabeth Street, the circulation road is a minimum of 5.7 m wide.



3.3 Car Parking

321 – 323A and 325 Elizabeth Street

The new section of the proposed development includes provision for 36 car parking spaces, of which 28 will be for use by the public and 8 will be private tenant bays. Prior to noon, 3 of the public car parking spaces are proposed to have a 15-minute restriction to allow for deliveries to existing commercial premises who currently use the right of way as their only access for deliveries. The car park is expected to operate between 8:30 am and 10:00 pm, consistent with the operating hours of the existing car park.

All public car parking spaces are proposed to be 2.6 m wide and 5.4 m long (including kerb overhangs for some spaces). Private tenant parking spaces are proposed to typically be a minimum of 2.4 m wide and 5.4 m long. Two private tenant bays are proposed to be for small cars only, indicated by relevant signage, and thus will be 2.3 m wide and 5.0 m long. The aisle width is a minimum of 5.8 m wide.

The car park also includes a vehicle turning bay at the south-east corner, and landscaped areas featuring lighting and other items as detailed in the drawing set.

16A Lefroy Street

At the existing Lefroy Street car park, the proposed development includes the provision of two new DDA accessible car parking spaces and two electric vehicle (EV) charging bays. The DDA accessible parking spaces are to be 2.5 m wide and 4.8 m long, noting that the low kerb at the front allows for 0.6 m of overhang. The shared area to the side of the DDA accessible parking spaces is 2.5 m wide and 5.4 m long should the existing wheel stop be removed. The shared areas at the front of the DDA accessible parking spaces are approximately 2.5 m wide and 2.5 m long, although the area of the eastern front shared space is limited by existing vegetation. Localised resurfacing works are proposed in the area of the DDA accessible parking spaces to achieve DDA compliant surface levels.

The three southernmost car parking spaces in the existing car park will also be realigned as part of the development. The car parking space closest to the proposed bridge will be reinstated for use as a turning bay.

Due to the changes, the number of car parking spaces in the existing Lefroy Street car park are proposed to reduce from 34 spaces to 32 spaces.

No other changes to the layout or the dimensions of the Lefroy Street car parking spaces are proposed.

3.4 Bicycle Parking

A bicycle rack for use by 6 bicycles is proposed to be located directly south of the permit holders only section of the car park (indicated in Figure 11), subject to approval by the Council.

3.5 Delivery Bays

As discussed and shown in Figure 11, 3 parking bays with 15-minute restriction prior to 12:00 pm have been proposed. These spaces are expected to be used by B99 vehicles such as courier vans for deliveries to existing commercial premises with frontages to Elizabeth Street. After noon, the spaces will be used for public parking.



3.6 Pedestrian Connectivity

The existing right of way will be converted to a pedestrian walkway and restricted vehicle access. It is approximately 3.3 m wide.

The proposed footpath within the site will exceed 4 m in width and span across the bridge. Pedestrian crossovers with TGSIs are provided on either side of the bridge. The proposed footpath provides pedestrians crossovers with TGSIs on either side of the bridge. The 1.5 m wide existing footpath within the current car park will be retained. Due to existing site constraints, connectivity between the bridge footpath and the footpath in the existing car park is not feasible. Due to the low speed environment and relatively low car parking turnover, the use of the parking aisle by both vehicles and pedestrians is considered to be of low safety risk.

A footpath that runs along the northern side of Providence Rivulet begins to the east of the proposed bridge.

4. Transport Assessment

4.1 Traffic Impact Assessment

4.1.1 Traffic Generation

The traffic generation of the proposed development has been determined using the results of the existing traffic count data from the Lefroy Street car park. As the existing Lefroy Street car park currently features 34 car parking spaces, and the proposed development is to feature 68 car parking spaces, doubling the amount of car parking spaces.

Based on this, the proposed development has been estimated to generate double the traffic of the existing Lefroy Street car park.

Additionally, as the existing right of way is to be converted to a pedestrian and restricted vehicle access, it was assumed that the car parking located behind commercial premises at 329 – 339 Elizabeth Street would typically be accessed via the Lefroy Street car park access. Based on aerial imagery, it was conservatively estimated that 10 vehicles currently occupy parking spaces at the rear of these premises. All 10 vehicles occupying the spaces were assumed to access the site during the AM peak hour and exit the site during the PM peak hour on both weekdays and weekends.

Therefore, the worst-case scenario is expected to result in the following increased traffic generation at the Lefroy Street car park access during the weekday AM peak, midday peak and PM peak hours and the weekend midday peak hour:

- Weekday AM Peak Hour – 18 vehicle movements
- Weekday Midday Peak Hour – 37 vehicle movements
- Weekday PM Peak Hour – 18 vehicle movements; and
- Weekend Midday Peak Hour – 40 vehicle movements.

In reality, the number of movements will likely be slightly less, given that 8 of the proposed parking spaces will be private tenant bays and thus generate less traffic. Furthermore, the premises located at 329 – 339 Elizabeth Street open and close at varying times and thus likely don't all generate traffic during the AM and PM peak hours.

4.1.2 Directional Split of Traffic

The directional split of traffic generated at the Lefroy Street car park access (i.e. the ratio of inbound and outbound traffic movements) by the development has been conservatively estimated on the basis of existing traffic volumes.

As discussed, it was assumed that the directional split of the traffic generated by premises at 329 – 339 Elizabeth Street was as follows:

- 10 vehicles are expected to ingress the site during the AM peak hour; and
- 10 vehicles are expected to egress the site during the PM peak hour.

4.1.3 Traffic Distribution and Assignment

The distribution of traffic generated by the development is based on several factors including:

- The location of major traffic distribution roads around the site
- The location of traffic generating developments; and
- Existing traffic patterns.

Based on this, the expected traffic distribution and assignment of movements to and from the proposed development is shown in Figure 13 to Figure 16.

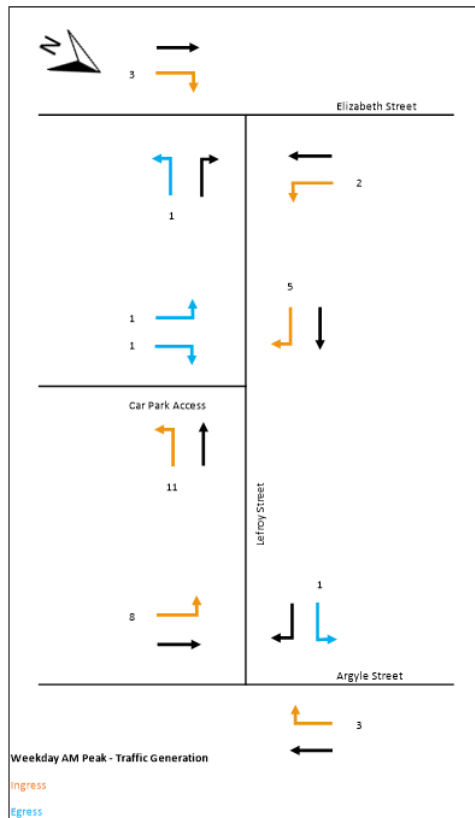


Figure 13: Expected traffic distribution weekday AM peak hour

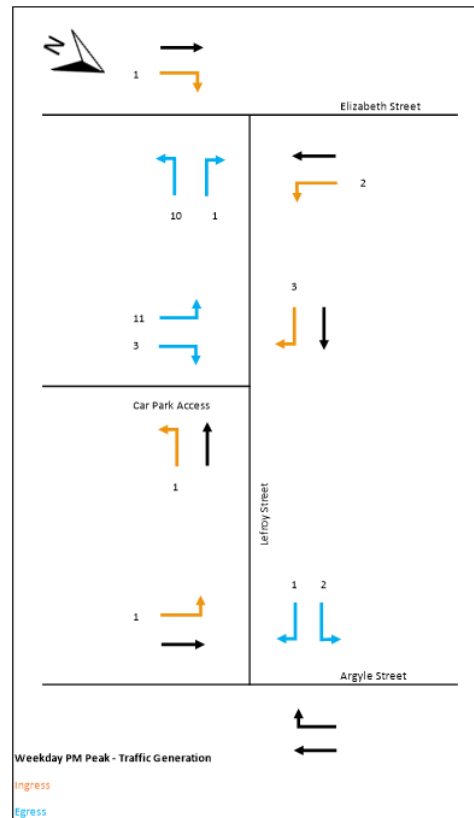


Figure 14: Expected traffic distribution weekday PM peak hour

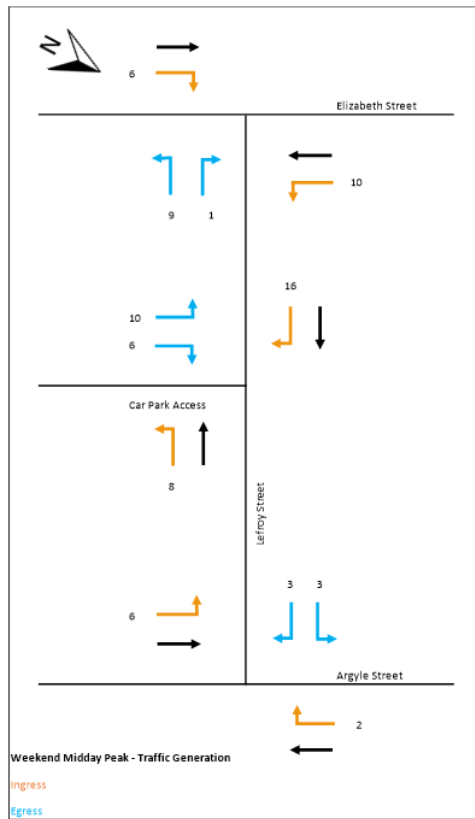


Figure 15: Expected traffic distribution weekday midday peak hour

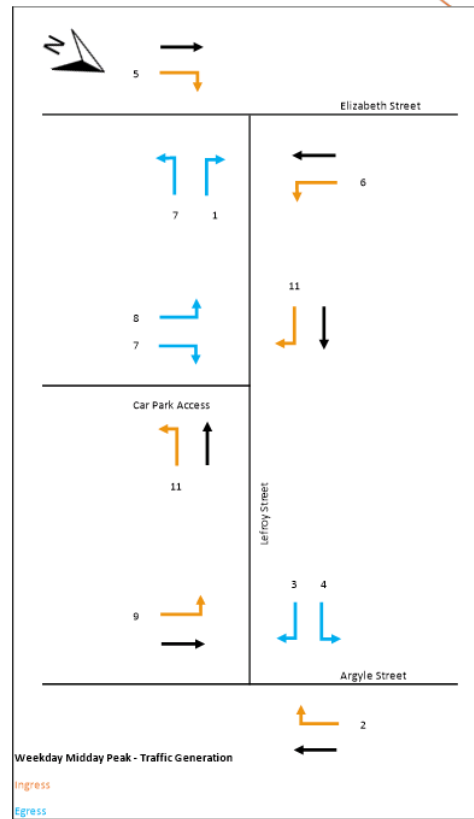


Figure 16: Expected traffic distribution weekend midday peak hour

4.1.4 Traffic Impacts – Post Development

The traffic impact of the proposed development has been estimated for the year 2022.

The expected post development traffic volumes for the weekday AM, midday and PM peak hours, as well as the weekend midday peak hour at the intersections is shown in Figure 17 to Figure 20.

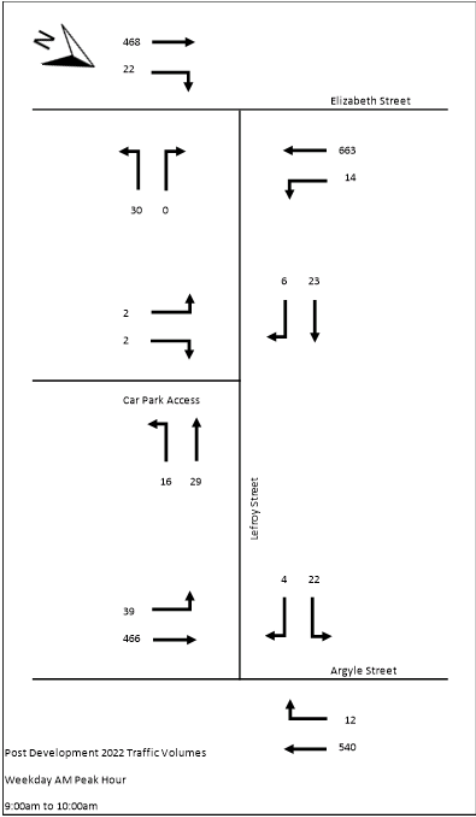


Figure 17: Intersection traffic volumes – post development weekday AM peak hour

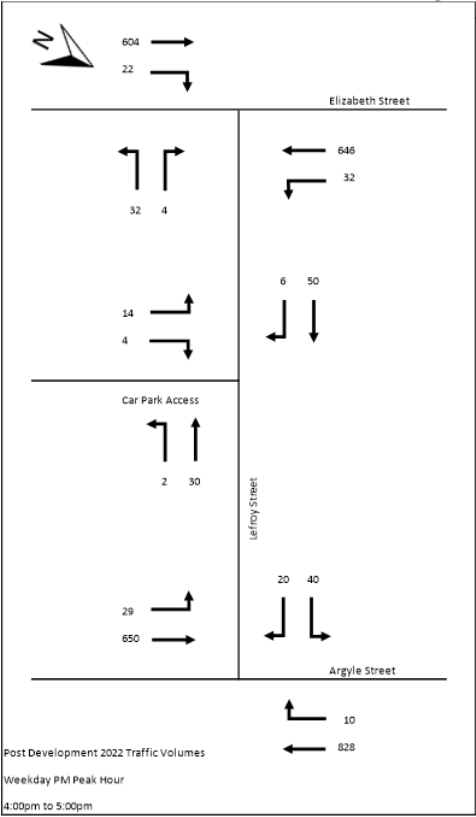


Figure 18: Intersection traffic volumes – post development weekday PM peak hour

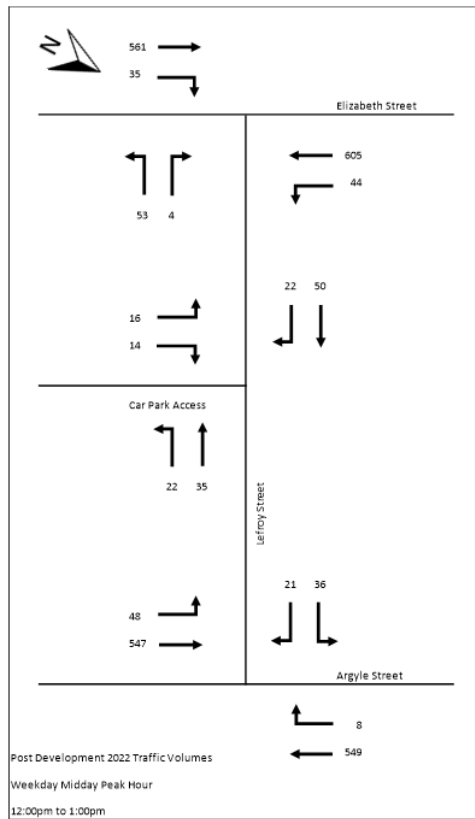


Figure 19: Intersection traffic volumes – post development
weekday midday peak hour

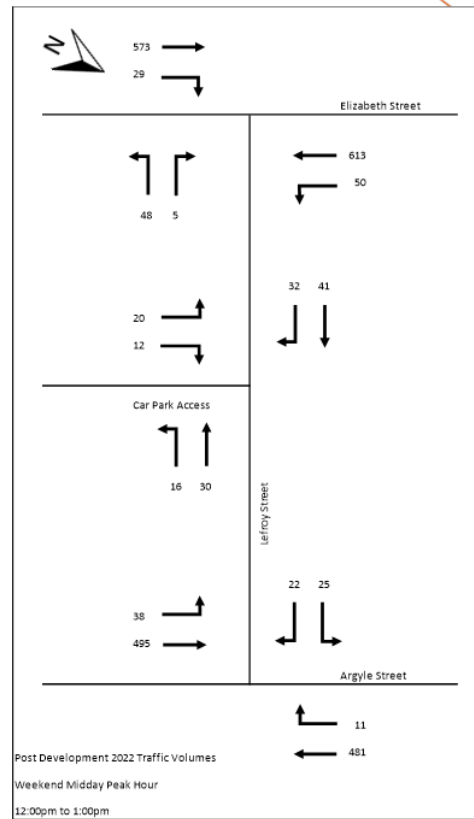



Figure 20: Intersection traffic volumes – post development
weekend midday peak hour


A summary of the traffic modelling results post development of the proposed development is shown in Table 4. Full results are included in Appendix C.

Table 4: SIDRA Intersection traffic modelling results – post development

Intersection	Peak Hour	Leg	Degree of Saturation	Average delay (secs)	95% Back of Queue	Level of Service
Elizabeth Street / Lefroy Street intersection	AM	South-east – Elizabeth Street	0.28	1	2	A
		North-east – Lefroy Street	0.03	7	1	A
		North-west – Elizabeth Street	0.36	0	0	A
		All Vehicles	0.36	1	2	A
	Weekday Midday	South-east – Elizabeth Street	0.34	1	4	A



Intersection	Peak Hour	Leg	Degree of Saturation	Average delay (secs)	95% Back of Queue	Level of Service
		North-east – Lefroy Street	0.06	7	2	A
		North-west – Elizabeth Street	0.35	0	0	A
		All Vehicles	0.35	1	4	A
	PM	South-east – Elizabeth Street	0.35	1	3	A
		North-east – Lefroy Street	0.04	7	1	A
		North-west – Elizabeth Street	0.36	0	0	A
		All Vehicles	0.36	1	3	A
	Weekend Midday	South-east – Elizabeth Street	0.34	1	4	A
		North-east – Lefroy Street	0.05	7	2	A
		North-west – Elizabeth Street	0.35	0	0	A
		All Vehicles	0.35	1	4	A
Argyle Street / Lefroy Street intersection	AM	South-east – Argyle Street	0.28	0	0	A
		North-west – Argyle Street	0.31	0	1	A
		South-west – Lefroy Street	0.02	6	1	A
		All Vehicles	0.31	0	1	A
	Weekday Midday	South-east – Argyle Street	0.33	0	0	A
		North-west – Argyle Street	0.31	0	1	A
		South-west – Lefroy Street	0.06	7	2	A
		All Vehicles	0.33	1	2	A
	PM	South-east – Argyle Street	0.38	0	0	A
		North-west – Argyle Street	0.47	0	2	A



Intersection	Peak Hour	Leg	Degree of Saturation	Average delay (secs)	95% Back of Queue	Level of Service
		South-west – Lefroy Street	0.09	8	2	A
		All Vehicles	0.47	1	2	A
	Weekend Midday	South-east – Argyle Street	0.30	0	0	A
		North-west – Argyle Street	0.28	0	1	A
		South-west – Lefroy Street	0.05	7	1	A
		All Vehicles	0.30	1	1	A
Lefroy Street / Car Park Access intersection	AM	South-east – Car Park Access	0.00	1	0	A
		North-east – Lefroy Street	0.03	4	0	A
		South-west – Lefroy Street	0.02	4	0	A
		All Vehicles	0.03	4	0	A
	Weekday Midday	South-east – Car Park Access	0.02	1	1	A
		North-east – Lefroy Street	0.03	4	0	A
		South-west – Lefroy Street	0.04	4	1	A
		All Vehicles	0.04	3	1	A
	PM	South-east – Car Park Access	0.01	0	0	A
		North-east – Lefroy Street	0.02	3	0	A
		South-west – Lefroy Street	0.03	3	1	A
		All Vehicles	0.03	3	1	A
	Weekend Midday	South-east – Car Park Access	0.02	1	1	A
		North-east – Lefroy Street	0.03	4	0	A
		South-west – Lefroy Street	0.04	4	1	A

Intersection	Peak Hour	Leg	Degree of Saturation	Average delay (secs)	95% Back of Queue	Level of Service
		All Vehicles	0.04	3	1	A

Based on the results above, the intersections surrounding the proposed development are expected to perform at LOS A. Thus, minimal queues and delays are expected at the surrounding intersections post development of the proposed development.

4.1.5 Traffic Impacts – 10-years Post Development

The traffic impact of the proposed development has also been estimated for the year 2032. In order to represent future growth on the road network, a compounding growth rate of 2% per year has been applied to the calculated 2022 traffic volumes.

The expected 10-years post development traffic volumes for the weekday AM, midday and PM peak hours, as well as the weekend midday peak hour are shown in Figure 21 to Figure 24.

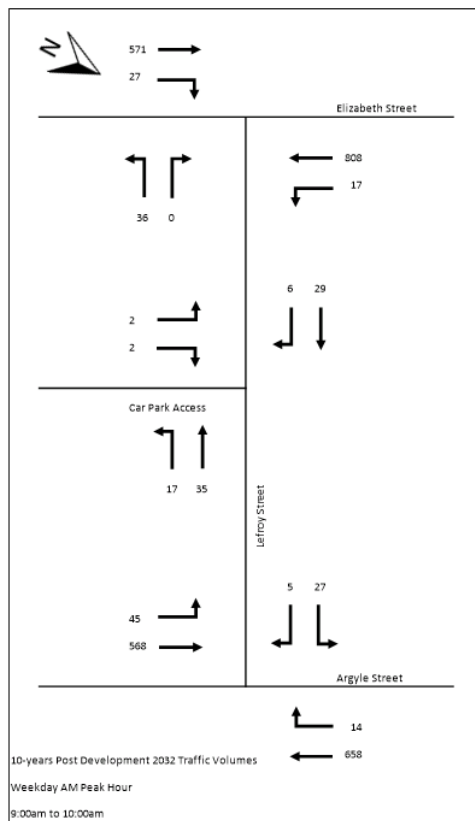


Figure 21: Intersection traffic volumes - 10-years post development weekday AM peak hour

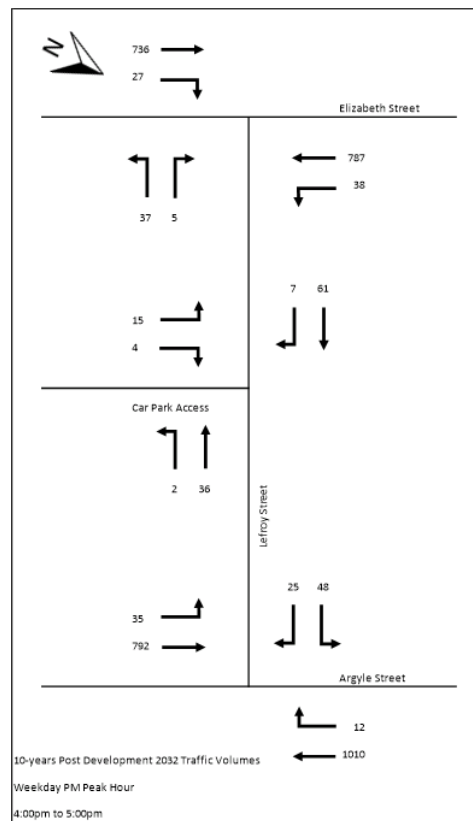


Figure 22: Intersection traffic volumes - 10-years post development weekday PM peak hour

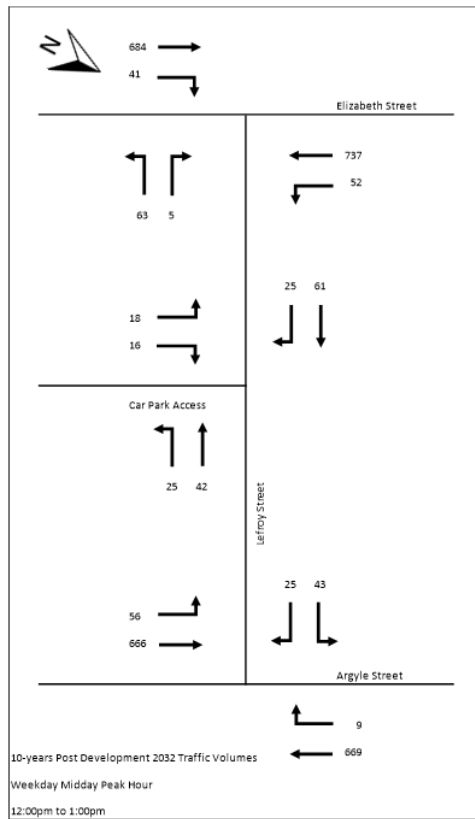


Figure 23: Intersection traffic volumes - 10-years post development weekday midday peak hour

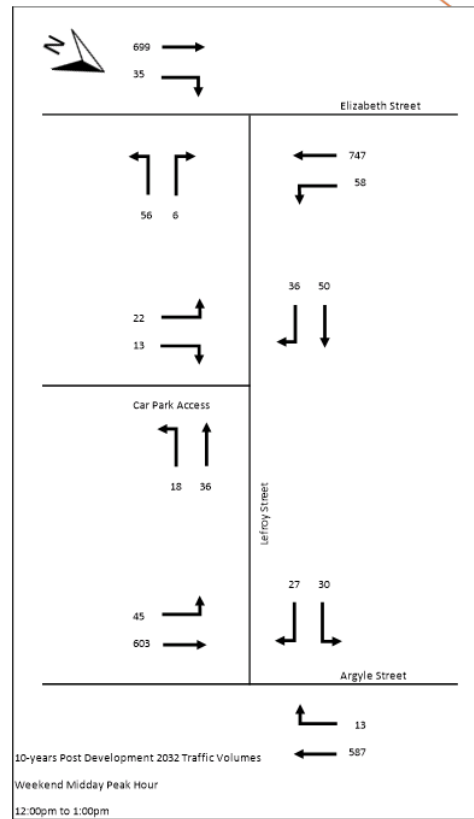



Figure 24: Intersection traffic volumes - 10-years post development weekend midday traffic volumes


A summary of the traffic modelling results 10-years post development of the proposed development is shown in Table 5. Full results are included in Appendix D.

Table 5: SIDRA Intersection traffic modelling results – 10-years post development

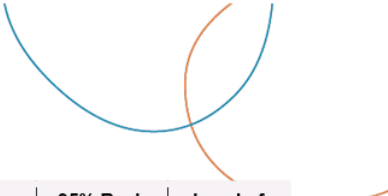
Intersection	Peak Hour	Leg	Degree of Saturation	Average delay (secs)	95% Back of Queue	Level of Service
Elizabeth Street/ Lefroy Street intersection	AM	South-east – Elizabeth Street	0.34	1	5	A
		North-east – Lefroy Street	0.05	8	1	A
		North-west – Elizabeth Street	0.44	0	0	A
		All Vehicles	0.44	1	5	A
	Weekday Midday	South-east – Elizabeth Street	0.42	1	8	A



Intersection	Peak Hour	Leg	Degree of Saturation	Average delay (secs)	95% Back of Queue	Level of Service
		North-east – Lefroy Street	0.08	8	2	A
		North-west – Elizabeth Street	0.42	0	0	A
		All Vehicles	0.42	1	8	A
	PM	South-east – Elizabeth Street	0.45	1	9	A
		North-east – Lefroy Street	0.06	8	2	A
		North-west – Elizabeth Street	0.44	0	0	A
		All Vehicles	0.45	1	9	A
	Weekend Midday	South-east – Elizabeth Street	0.42	1	7	A
		North-east – Lefroy Street	0.08	8	2	A
		North-west – Elizabeth Street	0.43	0	0	A
		All Vehicles	0.43	1	7	A
Argyle Street/ Lefroy Street intersection	AM	South-east – Argyle Street	0.34	0	0	A
		North-west – Argyle Street	0.38	0	2	A
		South-west – Lefroy Street	0.03	7	1	A
		All Vehicles	0.38	0	2	A
	Weekday Midday	South-east – Argyle Street	0.40	0	0	A
		North-west – Argyle Street	0.38	0	1	A
		South-west – Lefroy Street	0.09	8	2	A
		All Vehicles	0.40	1	2	A
	PM	South-east – Argyle Street	0.46	0	0	A
		North-west – Argyle Street	0.58	0	3	A



Intersection	Peak Hour	Leg	Degree of Saturation	Average delay (secs)	95% Back of Queue	Level of Service
		South-west – Lefroy Street	0.16	11	3	B
		All Vehicles	0.58	1	3	A
	Weekend Midday	South-east – Argyle Street	0.36	0	0	A
		North-west – Argyle Street	0.34	0	2	A
		South-west – Lefroy Street	0.07	8	2	A
		All Vehicles	0.36	1	2	A
Lefroy Street/ Car Park Access intersection	AM	South-east – Car Park Access	0.00	1	0	A
		North-east – Lefroy Street	0.03	4	0	A
		South-west – Lefroy Street	0.02	4	0	A
		All Vehicles	0.03	4	0	A
	Weekday Midday	South-east – Car Park Access	0.02	1	1	A
		North-east – Lefroy Street	0.04	4	0	A
		South-west – Lefroy Street	0.04	4	1	A
		All Vehicles	0.04	3	1	A
	PM	South-east – Car Park Access	0.01	0	0	A
		North-east – Lefroy Street	0.02	3	0	A
		South-west – Lefroy Street	0.04	3	1	A
		All Vehicles	0.04	3	1	A
	Weekend Midday	South-east – Car Park Access	0.02	1	1	A
		North-east – Lefroy Street	0.03	4	0	A
		South-west – Lefroy Street	0.04	4	1	A



Intersection	Peak Hour	Leg	Degree of Saturation	Average delay (secs)	95% Back of Queue	Level of Service
		All Vehicles	0.04	3	1	A

Based on the results above, the intersections surrounding the proposed development are expected to perform at an overall LOS A. Thus, minimal queues and delays are expected at the surrounding intersections 10-years post development of the proposed development.

4.1.6 Road Safety Impacts

As discussed previously, the existing crash history does not indicate a road safety issue in the vicinity of the development as crashes were of low consequence and did not indicate any patterns of concern.

Increased vehicular traffic generated by the proposed development is not expected to increase the frequency or severity of crashes in the vicinity of the site.

4.2 Parking Assessment

4.2.1 Parking Provision

As the development is a car park, it does not require a specific number of car parking or bicycle parking spaces per the Planning Scheme.

However, the number of DDA accessible car parking spaces required per *Building Code of Australia Table D3.5 Car parking number for people with a disability* was assessed for the development. The car parking rate and requirement is shown below in Table 6.

Table 6: DDA accessible parking provision requirement

Car Parking Rate	Car Parking Requirement
1 DDA accessible car parking space for every 50 car parking spaces or part thereof	2 DDA accessible car parking space

Based on the above, the proposed development is required to provide 2 DDA accessible car parking spaces.

As the proposed development is providing 2 DDA accessible car parking spaces, it meets this requirement.

4.2.2 Parking Layout

The parking layout has been reviewed against the *Australian Standard AS/NZS 2890.1:2004 Parking Facilities for Off-Street Car Parking* (Australian Standard).

In order to determine the class of parking, Table 1.1 of the Australian Standard has been reviewed. An excerpt of Table 1.1 from the Australian Standard is shown in Figure 25.

TABLE 1.1
CLASSIFICATION OF OFF-STREET CAR PARKING FACILITIES

User class	Required door opening	Required aisle width	Examples of uses (Note 1)
1	Front door, first stop	Minimum for single manoeuvre entry and exit	Employee and commuter parking (generally, all-day parking)
1A	Front door, first stop	Three-point turn entry and exit into 90° parking spaces only, otherwise as for User Class 1	Residential, domestic and employee parking
2	Full opening, all doors	Minimum for single manoeuvre entry and exit	Long-term city and town centre parking, sports facilities, entertainment centres, hotels, motels, airport visitors (generally medium-term parking)
3	Full opening, all doors	Minimum for single manoeuvre entry and exit	Short-term city and town centre parking, parking stations, hospital and medical centres
3A	Full opening, all doors	Additional allowance above minimum single manoeuvre width to facilitate entry and exit	Short term, high turnover parking at shopping centres
4	Size requirements are specified in AS/NZS 2890.6 (Note 2)		Parking for people with disabilities

Key

Private Car Parking

Public Car Parking




Figure 25: Table 1.1 of Australian Standard AS/NZS 2890.1:2004

The proposed private and public car parking spaces have been reviewed against the Australian Standard User Class 1A and 2 requirements. The DDA accessible car parking spaces have been reviewed against *Australian Standard AS/NZS 2890.6:2009 Part 6: Off-street parking for people with disabilities* (AS/NZS 2890.6:2009).

The dimensional requirements for User Class 1A and 2 car parking spaces and DDA accessible car parking spaces are specified in Table 7.

Table 7: Car parking layout requirements

User Class	Feature	Minimum Requirement	Proposed
1A (Private Car Parking)	Parking Space Width (90 degree – spaces for small cars)	2.3 m	2.3 m
	Parking Space Width (90 degree – spaces for small cars)	5.0 m	5.0 m
	Parking Space Width (90 degree)	2.4 m	2.4 m - 2.7 m
	Parking Space Length (90 degree with wheel stops/ retaining wall/ crash barrier)	5.4 m	5.4 m
	Parking Space Gradient (parallel to parking)	5% max.	<5%
	Parking Space Gradient (perpendicular to parking)	6.25% max.	<6.25%



User Class	Feature	Minimum Requirement	Proposed
	Parking Aisle Width	5.8 m	5.8 m
2 (Public Car Parking)	Parking Space Width (90 degree)	2.5 m	2.6 m
	Parking Space Length (90 degree with wheel stops/ retaining wall/ crash barrier)	5.4 m (4.8 m where a low kerb allows 0.6 m overhang)	5.4 m (4.8 m - 5.25 m where a low kerb allows 0.6 m overhang)
	Parking Space Gradient (parallel to parking)	5% max.	<5%
	Parking Space Gradient (perpendicular to parking)	6.25% max.	<6.25%
	Parking Aisle Width	5.8 m	5.8 m
DDA Accessible Parking	Parking Space Width (90 degree)	2.4 m	2.5 m
	Parking Space Length (90 degree with wheel stops/ retaining wall/ crash barrier)	5.4 m (4.8 m where a low kerb allows 0.6 m overhang)	4.8 m
	Shared Area (side)	2.4 m wide, 5.4 m long	2.5 m wide, 5.4 m long*
	Shared Area (front)	2.4 m wide, 2.4 m long	2.5 m wide, 2.5 m long
	Parking Space Gradient (parallel to parking)	3.0% (bituminous surface)	≤3.0%
	Parking Space Gradient (perpendicular to parking)	3.0% (bituminous surface)	≤3.0%
	Parking Aisle Width	5.8 m	5.9 m

*Based on the existing wheel stop being removed from the shared area.

Based on the above, the proposed private car parking and public car parking meets the requirements of the Australian Standard. The DDA Accessible Parking meets the requirements of AS/NZS 2890.6:2009 except for the shared area to the side of the DDA accessible parking spaces. As discussed, however, should the wheel stop be removed, the space will satisfy these requirements.

4.3 Site Layout Assessment

4.3.1 Site Access

In order to determine the access facility category and for access driveway widths, Table 3.1 and Table 3.2 of the Australian Standard has been reviewed. Excerpts of Table 3.1 and Table 3.2 from the Australian Standard are shown in Figure 26 and Figure 27.

TABLE 3.1
SELECTION OF ACCESS FACILITY CATEGORY

Class of parking facility (see Table 1.1)	Frontage road type	Access facility category				
		Number of parking spaces (Note 1)				
		<25	25 to 100	101 to 300	301 to 600	>600
1,1A	Arterial	1	2	3	4	5
	Local	1	1	2	3	4
2	Arterial	2	2	3	4	5
	Local	1	2	3	4	4
3,3A	Arterial	2	3	4	4	5
	Local	1	2	3	4	4

Key

Private Car Parking

Public Car Parking

Figure 26: Table 3.1 of Australian Standard AS/NZS 2890.1:2004

ACCESS DRIVEWAY WIDTHS

Category	Entry width	Exit width	metres
			Separation of driveways
1	3.0 to 5.5	(Combined) (see Note)	N/A
2	6.0 to 9.0	(Combined) (see Note)	N/A
3	6.0	4.0 to 6.0	1 to 3
4	6.0 to 8.0	6.0 to 8.0	1 to 3
5	To be provided as an intersection, not an access driveway, see Clause 3.1.1.		

Key

Private Car Parking

Public Car Parking

Figure 27: Table 3.2 of Australian Standard AS/NZS 2890.1:2004

Based on the above, a User Class 2 parking facility with a Category 2 access driveway for the public car parking is required to provide a minimum combined entry and exit width of 6.0 m.

As the proposed development has an access width of approximately 6.7 m, it meets the Australian Standard requirements.

4.3.2 Circulation Road

The suitability of the circulation road has been assessed against the Australian Standard.

Australian Standard Requirements

The Australian Standard specifies a minimum road width of 3.0 m for one-way traffic flow and 5.5 m for two-way traffic flow. The Australian Standard does not specify crossfall requirements for circulation roads.

The circulation road at the permit holders only section of the existing Lefroy Street car park is between approximately 4.8 m wide and 5.3 m wide and thus does not meet the requirements of the Australian Standard for two-way traffic flow. However, as discussed, by implementing a hold line on the northbound lane of the bridge, with the provision of relevant signage, the section will operate under a one-way shuttle flow arrangement. As the section is a minimum of 4.8 m wide, it meets the Australian Standard requirements for one-way traffic flow.



As the circulation road is a minimum of 5.7 m wide in sections of two-way traffic flow, it meets the Australian Standard requirements.

4.3.3 Conversion of Elizabeth Street Site Access

As discussed, the existing right of way from Elizabeth Street is proposed to be converted to a pedestrian and restricted vehicle access via the implementation of bollards at either end of the laneway.

The redirection of vehicles to the Lefroy Street access will significantly reduce the number of vehicles using the existing Elizabeth Street access which is narrow and intersects along the heavily used pedestrian path on Elizabeth Street. As the Lefroy Street access is wider, has better sight distance and the Lefroy Street footpath is not as heavily used by pedestrians, the conversion of the Elizabeth Street site access is expected to improve safety for both vehicles as well as pedestrians.

4.3.4 Access Sight Distance

The Safe Intersection Sight Distance (SISD) to the site for vehicles travelling along Lefroy Street has been assessed with respect to the *Austrroads Guide to Road Design – Part 4A: Unsignalised and Signalised Intersections* (Austrroads Guide Part 4A). The SISD was measured from a point 5 m back from the edge of the kerb and at a height of 1.25 m in accordance with the Austrroads Guide Part 4A.

The SISD requirements and the observed available sight distance at the site access are shown below in Table 8Table 8.

Table 8: Sight Distance Assessment

Location of Vehicle on Lefroy Street	Speed Limit	Sight Distance Requirement	Available Sight Distance	Meets Requirements
South-west	30 km/h*	49 m	70 m	Yes
North-east	50 km/h	97 m	157 m	Yes

*As the Elizabeth Street / Lefroy Street intersection is located so close to the car park access off Lefroy Street, it is expected cars would travel no faster than 30 km/h between the two locations. The sight distance requirement for a speed of 30 km/h is not presented in the Austrroads Guide Part 4A, however, has been extrapolated as seen above.

Based on the above, the available sight distance at the site access to both the south-west and north-east complies with the requirements of the Austrroads Guide Part 4A.

4.3.5 Delivery Bays

As discussed, the development will feature 3 parking bays with 15-minute restriction which operate until noon for use by delivery trucks to access the rear of premises located at 329-339 Elizabeth Street to ensure businesses have the ability to make deliveries.

As the spaces are to be used by B99 vehicles, the size of the spaces is expected to be sufficient.



4.4 Pedestrian Connectivity

The *Austrroads Guide to Road Design Part 6: Paths for Walking and Cycling* (Austrroads Guide Part 6A) outlines a suggested minimum width for general low volume pedestrian paths of 1.2 m.

As the proposed pedestrian pathway exceeds 4.0 m in width, it meets the Austrroads Guide Part 6A requirements. As the existing footpath within the current car park is 1.5 m wide, it also meets the requirements of the Austrroads Guide Part 6A.

5. Construction Impacts

The existing site access off Lefroy Street is proposed to be used during construction of the new section of the proposed development. The largest trucks expected to access the site during the construction stage will be limited to 8.8 m medium rigid vehicles (MRVs). Based on a swept path assessment (attached in Appendix E) and following the removal of the fence and Council owned shed mentioned previously, it has been confirmed that an 8.8 m MRV can enter and exit the proposed 321-323A and 325 Elizabeth Street car park from the existing access off Lefroy Street in a forward direction, prior to the construction of the double lane bridge.

The number of truck and light vehicle movements during the construction of the new section of the proposed current is development currently unknown. However, based on SIDRA Intersection modelling results presented in this report construction impacts on the operation of the surrounding road network is expected to be minimal. A Construction Traffic Management Plan is recommended to be completed prior to the start of works to better determine the construction traffic impacts.

6. Planning Scheme Assessment

6.1 E5.0 Road and Railway Assets Code

The development has been assessed against the Use Standards and Development Standards of the Planning Scheme's Road and Railway Asset Code, shown below.

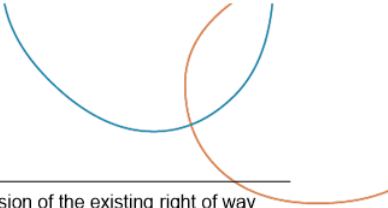
6.1.1 Use Standards

E5.5.1 Existing road accesses and junctions

Objective:

To ensure that the safety and efficiency of roads is not reduced by increased use of existing accesses and junctions.

Acceptable Solution/ Performance Criteria	Comment
<p>Acceptable Solution A3</p> <p>The annual average daily traffic (AADT) of vehicle movements, to and from a site, using an existing access or junction, in an area subject to a speed limit of 60km/h or less, must not increase by more than 20% or 40 vehicle movements per day, whichever is the greater.</p> <p>Performance Criteria P3</p> <p>Any increase in vehicle traffic at an existing access or junction in an area subject to a speed limit of 60km/h or less, must be safe and not unreasonably impact on the efficiency of the road, having regard to:</p>	<p>Satisfies Performance Criteria P3</p> <p>As the proposed development is expected to increase the total number of vehicle movements to and from the site by more than 100%, producing 73 vehicle movements during the weekday AM, PM and midday peak hours and 40 vehicle movements during the weekend peak hour alone, it is unable to comply with Acceptable Solution A3. It does however satisfy Performance Criteria P3 as follows:</p> <p>a) Based on the SIDRA modelling results presented within the report, the traffic generated by the development is not expected to result in safety or operational issues in the road network surrounding the site. Furthermore, given the</p>



<ul style="list-style-type: none"> a) the increase in traffic caused by the use; b) the nature of the traffic generated by the use; c) the nature and efficiency of the access or the junction; d) the nature and category of the road; e) the speed limit and traffic flow of the road; f) any alternative access to a road; g) the need for the use; h) any traffic impact assessment; and i) any written advice received from the road authority. 	<p>proposed conversion of the existing right of way from Elizabeth Street, the development is expected to improve overall vehicle and pedestrian safety by limiting possible conflict points.</p> <ul style="list-style-type: none"> b) The proposed development is expected to generate predominantly light vehicle traffic which is already catered for on the surrounding road network. c) Based on the SIDRA modelling results, the car park access is expected to continue operating at LOS A post development and 10-years post development. d) Based on the SIDRA modelling results, all intersections in the vicinity of the site currently operate well and are expected to continue operating at LOS A post development and 10-years post development. e) Lefroy Street and Argyle Street are subject to the Tasmanian Urban Speed Limit of 50km/h. Elizabeth Street is subject to a speed limit of 40km/h in the vicinity of the site. The speeds and existing traffic flow are consistent with safe and efficient access to the proposed development. f) No alternative accesses are proposed for the development. g) The development will offer increased car parking availability within North Hobart. h) This TIA has been prepared for the development and identifies that the development is not expected to have any major impacts on the safety and operation of the surrounding road network. i) The City of Hobart own and maintain the road network in the vicinity of the site. As the car park development is a Council project, they have had involvement in the design process.
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6.1.2 Development Standards

E5.6.2 Road accesses and junctions**Objective:**

To ensure that the safety and efficiency of roads is not reduced by the creation of new accesses and junctions.

Acceptable Solution/ Performance Criteria	Comment
Acceptable Solution A2 No more than one access providing both entry and exit, or two accesses providing separate entry and exit, to roads in an area subject to a speed limit of 60km/h or less.	Complies with Acceptable Solution A2 As the development proposes no additional accesses to roads surrounding the site, it complies with Acceptable Solution A2.

E5.6.4 Sight distance at accesses, junctions and level crossings

Objective:

To ensure that accesses, junctions and level crossings provide sufficient sight distance between vehicles and between vehicles and trains to enable safe movement of traffic.

Acceptable Solution/ Performance Criteria	Comment
Acceptable Solution A1 Sight distances at: <ul style="list-style-type: none"> a) an access or junction must comply with the Safe Intersection Sight Distance shown in Table E5.1; and b) rail level crossings must comply with AS1742.7 Manual of uniform traffic control devices - Railway crossings, Standards Association of Australia. Performance Criteria P1 The design, layout and location of an access, junction or rail level crossing must provide adequate sight distances to ensure the safe movement of vehicles, having regard to: <ul style="list-style-type: none"> a) the nature and frequency of the traffic generated by the use; b) the frequency of use of the road or rail network; c) any alternative access; d) the need for the access, junction or level crossing; e) any traffic impact assessment; f) any measures to improve or maintain sight distance; and g) any written advice received from the road or rail authority. 	Complies with Acceptable Solution A1 As the sight distances from the Lefroy Street car park access to the south-west and north-east meet the requirements of the Austroads Guide Part 4A, and thus also meet the lesser requirements of the Planning Scheme, they comply with Acceptable Solution A1.

6.2 E6.0 Parking and Access Code

The development has been assessed against the Use Standards and Development Standards of the Planning Scheme's Parking and Access Asset Code, shown below.

6.2.1 Use Standards

E6.6.1 Number of Car Parking Spaces

Objective:

To ensure that:

- a) there is enough car parking to meet the reasonable needs of all users of a use or development, taking into account the level of parking available on or outside of the land and the access afforded by other modes of transport.
- b) a use or development does not detract from the amenity of users or the locality by:

- i. preventing regular parking overspill;
- ii. minimising the impact of car parking on heritage and local character.

Acceptable Solution/ Performance Criteria	Comment
Acceptable Solution A1 The number of on-site car parking spaces must be: <ul style="list-style-type: none"> a) no less than the number specified in Table E6.1; except if: <ul style="list-style-type: none"> i. the site is subject to a parking plan for the area adopted by Council, in which case parking provision (spaces or cash-in-lieu) must be in accordance with that plan; ii. the site is subject to clauses E6.6.5, E6.6.6, E6.6.7, E6.6.8, E6.6.9 or E6.6.10 of this planning scheme. 	Complies with Acceptable Solution A1 As Table E6.1 specifies no requirement for vehicle parking within the 11.0 Inner residential portion of the car park, it complies with Acceptable Solution A1.

E6.6.2 Number of Accessible Car Parking Spaces for People with a Disability

Objective:

To ensure that a use or development provides sufficient accessible car parking for people with a disability.

Acceptable Solution/ Performance Criteria	Comment
Acceptable Solution A1 Car parking spaces provided for people with a disability must: <ul style="list-style-type: none"> a) satisfy the relevant provisions of the Building Code of Australia; b) be incorporated into the overall car park design; c) be located as close as practicable to the building entrance. 	Complies with Acceptable Solution A1 As 2 DDA accessible car parking spaces are provided as part of the development, the provisions of the Building Code of Australia are satisfied. Furthermore, the DDA accessible car parking spaces have been incorporated into the overall car park design, and are located near to the car park entrance off Lefroy Street which provides the most practical connectivity into the surrounding street network. Therefore, they comply with Acceptable Solution A1.

E6.6.3 Number of Motorcycle Parking Spaces

Objective:

To ensure enough motorcycle parking is provided to meet the needs of likely users of a use or development.

Acceptable Solution/ Performance Criteria	Comment
Acceptable Solution A1 The number of on-site motorcycle parking spaces provided must be at a rate of 1 space to each 20 car parking spaces after the first 19 car parking spaces except if bulky goods sales, (rounded to the nearest whole number). Where an existing use or development is extended or intensified, the additional number of motorcycle parking spaces provided must be calculated on the amount of extension or intensification,	Satisfies Performance Criteria P1 As no motorcycle parking is provided within the development, it is unable to comply with Acceptable Solution A1. It does however satisfy Performance Criteria P1 as follows: <ul style="list-style-type: none"> a) The demand for motorcycle parking within the development is expected to be low due to the availability of free motorcycle parking directly northwest of the development on Lefroy Street.

<p>provided the existing number of motorcycle parking spaces is not reduced.</p> <p>Performance Criteria P1</p> <p>The number of on-site motorcycle parking spaces must be sufficient to meet the needs of likely users having regard to all of the following, as appropriate:</p> <ul style="list-style-type: none"> a) motorcycle parking demand; b) the availability of on-street and public motorcycle parking in the locality; c) the availability and likely use of other modes of transport; d) the availability and suitability of alternative arrangements for motorcycle parking provision. 	<ul style="list-style-type: none"> b) Free motorcycle parking is available directly northwest of the development on Lefroy Street. It is understood that this parking is generally not at capacity. c) Bus stops are located within a short walk of the site and typically arrive at stops in 10-minute intervals during weekdays. Furthermore, active transport links such as pedestrian footpaths and on-road bicycle lanes exist along surrounding streets. d) Should alternative motorcycle parking be required, motorcycles can use the public parking within the proposed development, or other on-street or off-street car parking in the vicinity.
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E6.6.4 Number of Bicycle Parking Spaces

Objective:

To ensure enough bicycle parking is provided to meet the needs of likely users and by so doing to encourage cycling as a healthy and environmentally friendly mode of transport for commuter, shopping and recreational trips.

Acceptable Solution/ Performance Criteria	Comment
<p>Acceptable Solution A1</p> <p>The number of on-site bicycle parking spaces provided must be no less than the number specified in Table E6.2.</p>	<p>Complies with Acceptable Solution A1</p> <p>As bicycle parking is not required for the vehicle parking use, it complies with Acceptable Solution A1. However, 6 bicycle parking spaces are planned to be located directly south of the existing permit holders only car park, subject to Council approval.</p>

E6.6.6 Number of Car Parking Spaces - General and Local Business Zones

Objective:

To ensure that the requirements for car parking facilities do not detract from the character or user amenity and convenience of those street frontages and other spaces in the Local Business or General Business Zones.

Acceptable Solution/ Performance Criteria	Comment
<p>Acceptable Solution A1</p> <p>Additional on-site parking is only required:</p> <ul style="list-style-type: none"> a) for the development of a vacant site; or b) for alterations and extensions related to an increase in floor area of more than 50m² or 20% of the floor area existing at the date of commencement of this Planning Scheme, whichever is the greater; or c) as part of any proposal for the redevelopment of a site. <p>If on-site parking is provided the number must be no greater than specified in Table E6.1.</p>	<p>Complies with Acceptable Solution A1</p> <p>As the portion of the car park within the 21.0 General Business zone does not require additional on-site parking and Table E6.1 specifies no requirement for vehicle parking, it complies with Acceptable Solution A1.</p>

6.2.2 Development Standards

E6.7.1 Number of Vehicular Accesses**Objective:**

To ensure that:

- a) safe and efficient access is provided to all road network users, including, but not limited to: drivers, passengers, pedestrians, and cyclists, by minimising:
 - (i) the number of vehicle access points; and
 - (ii) loss of on-street car parking spaces;
- b) vehicle access points do not unreasonably detract from the amenity of adjoining land uses;
- c) vehicle access points do not have a dominating impact on local streetscape and character.

Acceptable Solution/ Performance Criteria	Comment
Acceptable Solution A1 The number of vehicle access points provided for each road frontage must be no more than 1 or the existing number of vehicle access points, whichever is the greater.	Complies with Acceptable Solution A1 As the development provides no more than the existing number of vehicles access points, it complies with Acceptable Solution A1.

E6.7.2 Design of Vehicular Accesses**Objective:**

To ensure safe and efficient access for all users, including drivers, passengers, pedestrians and cyclists by locating, designing and constructing vehicle access points safely relative to the road network.

Acceptable Solution/ Performance Criteria	Comment
Acceptable Solution A1 Design of vehicle access points must comply with all of the following: <ul style="list-style-type: none"> a) in the case of non-commercial vehicle access; the location, sight distance, width and gradient of an access must be designed and constructed to comply with section 3 – "Access Facilities to Off-street Parking Areas and Queuing Areas" of AS/NZS 2890.1:2004 Parking Facilities Part 1: Off-street car parking; b) in the case of commercial vehicle access; the location, sight distance, geometry and gradient of an access must be designed and constructed to comply with all access driveway provisions in section 3 "Access Driveways and Circulation Roadways" of AS2890.2 - 2002 Parking facilities Part 2: Off-street commercial vehicle facilities. 	Complies with Acceptable Solution A1 As the vehicle access point has a width of 6.7 m, it complies with the section 3 of AS/NZS 2890.1:2004 Parking Facilities Part 1: Off-street car parking. Thus, it complies with Acceptable Solution A1.

E6.7.4 On-Site Turning**Objective:**

To ensure safe, efficient and convenient access for all users, including drivers, passengers, pedestrians and cyclists, by generally requiring vehicles to enter and exit in a forward direction.

Acceptable Solution/ Performance Criteria	Comment
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<p>Acceptable Solution A1</p> <p>On-site turning must be provided to enable vehicles to exit a site in a forward direction, except where the access complies with any of the following:</p> <ul style="list-style-type: none"> a) it serves no more than two dwelling units; b) it meets a road carrying less than 6000 vehicles per day. <p>Performance Criteria P1</p> <p>On-site turning may not be required if access is safe, efficient and convenient, having regard to all of the following:</p> <ul style="list-style-type: none"> a) avoidance of conflicts between users including vehicles, cyclists, dwelling occupants and pedestrians; b) avoidance of unreasonable interference with the flow of traffic on adjoining roads; c) suitability for the type and volume of traffic likely to be generated by the use or development; d) ease of accessibility and recognition for users; e) suitability of the location of the access point and the traffic volumes on the road. 	<p>Not Applicable</p> <p>As the site access meets Lefroy Street, which carries less than 6,000 vehicles per day, E6.7.4 is not applicable in relation to the development. However, the development allows light vehicles to enter and exit the site in a forward direction.</p>
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E6.7.5 Layout of Parking Areas

Objective:

To ensure that parking areas for cars (including assessable parking spaces), motorcycles and bicycles are located, designed and constructed to enable safe, easy and efficient use.

Acceptable Solution/ Performance Criteria	Comment
<p>Acceptable Solution A1</p> <p>The layout of car parking spaces, access aisles, circulation roadways and ramps must be designed and constructed to comply with section 2 "Design of Parking Modules, Circulation Roadways and Ramps" of AS/NZS 2890.1:2004 Parking Facilities Part 1: Off-street car parking and must have sufficient headroom to comply with clause 5.3 "Headroom" of the same Standard.</p> <p>Performance Criteria P1</p> <p>The layout of car parking spaces, access aisles, circulation roadways and ramps must be safe and must ensure ease of access, egress and manoeuvring on-site.</p>	<p>Complies with Acceptable Solution A1</p> <p>The layout of the future car parking spaces are to be designed and constructed to the relevant requirements of the Australian Standard and do not feature any overhead obstructions. As Acceptable Solution A1 refers to proposed car parking spaces, the car park complies with Acceptable Solution A1.</p> <p>Because existing car parking spaces within the permit holders only section of the Lefroy Street car park, minus the realigned car parks, do not meet the requirements of the Australian Standard, they do not meet Acceptable Solution A1. However, they do satisfy Performance Criteria P1 given their current safe use.</p>

E6.7.6 Surface Treatment of Parking Areas

Objective:

To ensure that parking spaces and vehicle circulation roadways do not detract from the amenity of users, adjoining occupiers or the environment by preventing dust, mud and sediment transport.

Acceptable Solution/ Performance Criteria	Comment
Acceptable Solution A1 Parking spaces and vehicle circulation roadways must be in accordance with all of the following; <ul style="list-style-type: none"> a) paved or treated with a durable all-weather pavement where within 75m of a property boundary or a sealed roadway; b) drained to an approved stormwater system, unless the road from which access is provided to the property is unsealed.	Complies with Acceptable Solution A1 As the parking spaces and vehicle circulation roadways feature an all-weather bituminous surface and are being drained to Providence Rivulet following detention and treatment, they comply with Acceptable Solution A1.

E6.7.7 Lighting of Parking Areas

Objective:

To ensure parking and vehicle circulation roadways and pedestrian paths used outside daylight hours are provided with lighting to a standard which:

- a) enables easy and efficient use;
- b) promotes the safety of users;
- c) minimises opportunities for crime or anti-social behaviour; and
- d) prevents unreasonable light overspill impacts.

Acceptable Solution/ Performance Criteria	Comment
Acceptable Solution A1 Parking and vehicle circulation roadways and pedestrian paths serving 5 or more car parking spaces, used outside daylight hours, must be provided with lighting in accordance with clause 3.1 "Basis of Design" and clause 3.6 "Car Parks" in AS/NZS 1158.3.1:2005 Lighting for roads and public spaces Part 3.1: Pedestrian area (Category P) lighting.	Complies with Acceptable Solution A1 Lighting for the proposed development has been designed to subcategory PC3 of AS/NZS 1158.1:2020 and thus meets the requirements of AS/NZS 1158.1:2020. As such, the proposed development will comply with Acceptable Solution A1. Refer to separate electrical design documentation and report.

E6.7.8 Landscaping of Parking Areas

Objective:

To ensure that large parking and circulation areas are landscaped to:

- a) relieve the visual impact on the streetscape of large expanses of hard surfaces;
- b) screen the boundary of car parking areas to soften the amenity impact on neighbouring properties;
- c) contribute to the creation of vibrant and liveable places;
- d) reduce opportunities for crime or anti-social behaviour by maintaining clear sightlines.

Acceptable Solution/ Performance Criteria	Comment
Acceptable Solution A1 Landscaping of parking and circulation areas must be provided where more than 5 car parking spaces are proposed. This landscaping must be no less than 5 percent of the area of the car park, except in the Central Business Zone where no landscaping is required.	Can comply with Acceptable Solution A1 A landscaping schedule is being provided by Council. Should landscaping for the proposed development meet or exceed 5% of the area of the car park, it will comply with Acceptable Solution A1.

Performance Criteria P1

Landscaping of parking and circulation areas accommodating more than 5 cars must satisfy all of the following:

- a) relieve the visual impact on the streetscape of large expanses of hard surfaces;
- b) soften the boundary of car parking areas to reduce the amenity impact on neighbouring properties and the streetscape;
- c) reduce opportunities for crime or anti-social behaviour by maintaining passive surveillance opportunities from nearby public spaces and buildings.

E6.7.12 Siting of Car Parking**Objective:**

To ensure that the streetscape, amenity and character of urban areas is not adversely affected by siting of vehicle parking and access facilities.

Acceptable Solution/ Performance Criteria	Comment
Acceptable Solution A1 Parking spaces and vehicle turning areas, including garages or covered parking areas in the Inner Residential Zone, Urban Mixed Use Zone, Village Zone, Local Business Zone and General Business Zone must be located behind the building line of buildings located or proposed on a site except if a parking area is already provided in front of the building line of a shopping centre.	Complies with Acceptable Solution A1 As the development and thus car parking spaces are located behind the building line, they comply with Acceptable Solution A1.

E6.7.14 Access to a Road**Objective:**

To ensure that access to the road network is provided appropriately.

Acceptable Solution/ Performance Criteria	Comment
Acceptable Solution A1 Access to a road must be in accordance with the requirements of the road authority.	Complies with Acceptable Solution A1 As the existing access from Lefroy Street is to be utilised for the development, it is in accordance with the requirements of the road authority. Thus, it complies with Acceptable Solution A1.



7. Conclusion

An assessment of the traffic impacts associated with the development of a new public car park at 321-323A Elizabeth Street and 325 Elizabeth Street, as well as changes to the existing car park located at 16A Lefroy Street has been undertaken with reference to the Department of State Growth's Publication *Traffic Impact Assessment Guidelines* and the *Hobart Interim Planning Scheme 2015*. The results of the assessment may be summarised as follows:

- The crash history shows that 9 crashes have occurred along Lefroy Street in the most recent 5-year period, all of which caused property damage only. The crashes do not indicate any patterns of concern. The development is not expected to increase the crash risk on Lefroy Street and at surrounding intersections
- The traffic generation of the development is expected to have minimal impact on the surrounding road network. SIDRA analysis undertaken as part of the TIA indicates that no change to the overall intersection LOS will occur at the Lefroy Street/ Car Park Access intersection, Elizabeth Street/ Lefroy Street intersection or the Argyle Street/ Lefroy Street intersection post development and 10-years post development
- The parking provision meets the requirements of the Planning Scheme and the *Building Code of Australia Table D3.5 Car parking number for people with a disability* for car parking and DDA Accessible car parking, respectively
- Redesigned and future sections of the car park meet the requirements of the Australian Standard and AS/NZS 2890.6:2009. The existing aisle width at the permit holders only section of the car park, which will not be redesigned as part of the development, does not meet the requirements of the Australian Standard. However, as it currently provides safe ingress and egress for vehicles, it is considered acceptable. The DDA accessible car parking layout meets the requirements of the *Building Code of Australia Table D3.5 Car parking number for people with a disability*, should the wheel stop located within the shared area (side) be removed
- Noting the provision of the hold line and relevant signage on the northbound lane of the bridge such that the circulation road operates as one-way shuttle flow at the permit holders only section of the existing Lefroy Street car park, the site access and circulation road meet the requirements of the Australian Standard
- The sight distance at the car park access onto Lefroy Street meets the requirements of the Austroads Guide Part 4A; and
- A swept path assessment of the site for an 8.8 m MRV was completed and indicates that such a vehicle could navigate the site during the development's construction stage.



Preliminary Site Plans

Appendix A

pitt&sherry



SIDRA Results - Existing

Appendix B

pitt&sherry

MOVEMENT SUMMARY

Site: 101 Argyle Street/ Lefroy Street Weekend Midday Peak
Hour (Site Folder: Existing Weekend Midday Peak Hour)

Argyle Street Lefroy Street Weekend Midday Peak
Site Category: one
Give Way: TW

Vehicle Movement Performance													
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Minor Road pproac LOS values are ased on average dela or all ve icle movements
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MOVEMENT SUMMARY

Site: 101 Argyle Street/ Lefroy Street Weekday AM Peak Hour
(Site Folder: Existing Weekday AM Peak Hour)

Argyle Street Lefroy Street Weekday AM Peak Hour
Site Category: One
Give Way: T Way

Vehicle Movement Performance													
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Site Level of Service LOS Method Delay S I D R Site LOS Method is spectring dialog P r i t e n t e r S e
Vehicle movement LOS values are based on average delay per movement
Minor Road proac LOS values are based on average delay for all vehicle movements
Intersection LOS and Major Road proac LOS values are not applied since the average delays not
a good LOS measure due to zero delays associated with major road movements
Delay Model S I D R Standard Geometric Delay is included
Queue Model S I D R Standard
Gap acceptance Capacity S I D R Standard eliminated
Values are calculated for 11 Movement Classes of Heavy Vehicle Model Designation

MOVEMENT SUMMARY

Site: 101 Argyle Street/ Lefroy Street Weekday Mid Peak Hour
(Site Folder: Existing Weekday Midday Peak Hour)

Argyle Street Lefroy Street Weekday Mid Peak Hour
Site Category: one
Give Way: TW

Vehicle Movement Performance													
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Site Level of Service LOS Met od Dela S I DR Site LOS Met od is specttinge dialog P riter S e
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Minor Road pproac LOS values are ased on average dela or all ve icle movements
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V values are calculated or Il Movement Classes o Il eav V e icle Model Designation

MOVEMENT SUMMARY

Site: 101 Argyle Street/ Lefroy Street Weekday PM Peak Hour
(Site Folder: Existing Weekday PM Peak Hour)

Argyle Street Lefroy Street Weekday PM Peak Hour
Site Category: One
Give Way: T Way

Vehicle Movement Performance													
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Site Level of Service LOS Method Delay S I D R Site LOS Method is spectring dialog P r i t e n t e r S e
Vehicle movement LOS values are based on average delay per movement
Minor Road proac LOS values are based on average delay for all vehicle movements
Intersection LOS and Major Road proac LOS values are not applied since the average delays not
a good LOS measure due to zero delays associated with major road movements
Delay Model S I D R Standard Geometric Delay is included
Queue Model S I D R Standard
Gap acceptance Capacity S I D R Standard eliminated
Values are calculated for 11 Movement Classes of Heavy Vehicle Model Designation

MOVEMENT SUMMARY

▽ Site: 101 Elizabeth Street/ Lefroy Street Weekday AM Peak Hour (Site Folder: Existing Weekday AM Peak Hour)

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Vehicle Movement Performance																						
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Site Level of Service (LOS) is based on average delay per movement. Minor Road approach LOS values are based on average delay for all vehicle movements. Intersection LOS and Major Road approach LOS values are not applied separately to the average delay nor a good LOS measure due to the delay associated with major road movements. Delay Model S I D R Standard Geometric Delay is included. Queue Model S I D R Standard. Gap Acceptance Capacity S I D R Standard. Eligible Movement Classes of Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 Elizabeth Street/ Lefroy Street Weekday Mid Peak
Hour (Site Folder: Existing Weekday Midday Peak Hour)

Elizabeth Street Lefroy Street Weekday Mid Peak Hour
Site Category: one
Give Way: TW

Vehicle Movement Performance															
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South East Elizabeth Street															
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North East Lefroy Street															
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R		LOS													
pproac															
North West Elizabeth Street															
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Intersection															

Site Level of Service LOS Method Delay S I D R Site LOS Method is spectring dialog P rinter Se
Vehicle movement LOS values are based on average delay per movement
Minor Road approach LOS values are based on average delay for all vehicle movements
Intersection LOS and Major Road approach LOS values are not applied since the average delays not
a good LOS measure due to zero delays associated with major road movements
Delay Model S I D R Standard Geometric Delay is included
Queue Model S I D R Standard
Gap acceptance Capacity S I D R Standard delay M D
Values are calculated for all Movement Classes of all heavy Vehicle Model Designation

MOVEMENT SUMMARY

▽ Site: 101 Elizabeth Street/ Lefroy Street Weekday PM Peak Hour (Site Folder: Existing Weekday PM Peak Hour)

Eli a et S treet Le ro S treet Wee da M P ea our
S ite Categor one
Give Wa T Wa

Vehicle Movement Performance																						
Mov ID	Turn	I VOL	P MES	T V	DEM Tots	D LWS V	Deg S	at	vel Dela	Level o S	er	ve	E E	Dist	P ro	E ue	ec S to	Ratio	vel o	cle	ver S	peed
		ve			ve		v		sec			ve		m								m
S out East Elia et S street																						
T										LOS												
R										LOS												
pproac																						
ort East Le ro S street																						
L										LOS												
R										LOS												
pproac										LOS												
ort West Elia et S street																						
L										LOS												
T										LOS												
pproac																						
Il V e ic																						

Site Level of Service (LOS) is based on average delay per movement. Minor Road approach LOS values are based on average delay for all vehicle movements. Intersection LOS and Major Road approach LOS values are not applied separately to the average delay nor a good LOS measure due to the delay associated with major road movements. Delay Model S I D R Standard Geometric Delay is included. Queue Model S I D R Standard. Gap Acceptance Capacity S I D R Standard. Eligible Movement Classes of Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 Elizabeth Street/ Lefroy Street Weekend Midday Peak
Hour (Site Folder: Existing Weekend Midday Peak Hour)

Elizabeth Street Lefroy Street Weekend Midday Peak Hour
Site Category: one
Give Way: TW

Vehicle Movement Performance															
Mov ID	Turn	I VOL Tot	P MES V	T	DEM LOWS Tot	D V	Deg S at	vel Dela	Level o S ervic		C E E Dist m	P rof E ue	ec S toj R at	vel o S cle	ver Speed m
South East Elizabeth Street															
	T								LOS						
	R								LOS						
pproac															
North East Lefroy Street															
	L								LOS						
	R								LOS						
pproac															
North West Elizabeth Street															
	L								LOS						
	T								LOS						
pproac															
Intersection															

Site Level of Service LOS Method Delay S I D R Site LOS Method is spectring dialog P r i t e n t e r S e
Vehicle movement LOS values are based on average delay per movement
Minor Road approach LOS values are based on average delay for all vehicle movements
Intersection LOS and Major Road approach LOS values are not applicable since the average delays not
a good LOS measure due to zero delays associated with major road movements
Delay Model S I D R Standard Geometric Delay is included
Queue Model S I D R Standard
Gap acceptance Capacity S I D R Standard delay M D
Values are calculated for all Movement Classes of all heavy Vehicle Model Designation

MOVEMENT SUMMARY

Site: 101 Lefroy Street/ Car Park Access Weekday AM Peak
Hour (Site Folder: Existing Weekday AM Peak Hour)

Le ro Street Car Park Access MP ea our
Site Category one
Give Way T Way

Vehicle Movement Performance													
Mov ID	Turn	I P T	V OL MES	DEM D	LOW S	Deg S at	Delat	Level o	S ervic	C	P rof E	ec S toj	ver o S peed
			T ot: V	T ot: V									
S out East Car Park Access													
	L							LOS					
	R							LOS					
	pproac							LOS					
ort East Le ro Street													
	L							LOS					
	T							LOS					
	pproac							LOS					
S out West Le ro Street													
	T							LOS					
	R							LOS					
	pproac							LOS					
Il V e ic													

Site Level o S service LOS Met od Delat S I DR Site LOS Met od is specttinge dialog P riter S e
Vehicle movement LOS values are ased on average dela per movement
Minor Road pproac LOS values are ased on average dela or all ve icle movements
I intersection LOS and Ma or Road pproac LOS values are ot ppliaa sign oot since t e average delat no
a good LOS measure due to ero dela s associated it ma or road movements
Dela Model S I DR S tandard Geometric Delat is included
ueue Model S I DR S tandard
Gap cceptance Capacit S I DR S tandard eli M D
V values are calculated or Il Movement Classes o Il eav V e icle Model Designation

MOVEMENT SUMMARY

Site: 101 Lefroy Street/ Car Park Access Weekday Mid Peak
Hour (Site Folder: Existing Weekday Midday Peak Hour)

Le ro Street Car Park Access MP ea our
Site Category one
Give Way T Way

Vehicle Movement Performance														
Mov ID	Turn	I VOL Tot	P MES V	T DEM LOWS Tot	D	Deg S at	ve Dela	Level o Servic	C	P	ro	E	ec S to	ve o S peed
		ve		ve		v	Sec		ve	E	E	Dist m	R at	Cle m
S out East Car Park Access														
	L							LOS						
	R							LOS						
	pproac							LOS						
ort East Le ro Street														
	L							LOS						
	T							LOS						
	pproac							LOS						
S out West Le ro Street														
	T							LOS						
	R							LOS						
	pproac							LOS						
Il V e ic														

Site Level o Service LOS Met od Dela S I DR Site LOS Met od is specttinge dialog P riter Se
Vehicle movement LOS values are ased on average dela per movement
Minor Road pproac LOS values are ased on average dela or all ve icle movements
I intersection LOS and Ma or Road pproac LOS values are ot pplia sign oot since t e average delas no
a good LOS measure due to ero dela s associated it ma or road movements
Dela Model S I DR S tandard Geometric Dela is included
ueue Model S I DR S tandard
Gap cceptance Capacit S I DR S tandard eli M D
V values are calculated or Il Movement Classes o Il eav V e icle Model Designation

MOVEMENT SUMMARY

Site: 101 Lefroy Street/ Car Park Access Weekday PM Peak
Hour (Site Folder: Existing Weekday PM Peak Hour)

Le ro Street Car Park Access MP ea our
Site Category one
Give Way T Way

Vehicle Movement Performance													
Mov ID	Turn	I VOL Tot	P MES V	T DEM LOWS Tot	D	Deg S at	ve Dela	Level o Servic	C	P	ro	E	ec S to
		ve		ve		v	Sec		ve	E	E	Dist	m
S out East Car Park Access													
	L							LOS					
	R							LOS					
	pproac							LOS					
ort East Le ro Street													
	L							LOS					
	T							LOS					
	pproac							LOS					
S out West Le ro Street													
	T							LOS					
	R							LOS					
	pproac							LOS					
Il V e ic													

Site Level o Service LOS Met od Dela S I DR Site LOS Met od is specttinge dialog P Aritenter S e
Vehicle movement LOS values are ased on average dela per movement
Minor Road pproac LOS values are ased on average dela or all ve icle movements
I intersection LOS and Ma or Road pproac LOS values are ot ppliaa sign ootrsnce t e average delas no
a good LOS measure due to ero dela s associated it ma or road movements
Dela Model S I DR S tandard Geometric Dela is included
ueue Model S I DR S tandard
Gap cceptance Capacit S I DR S tandard eli M D
V values are calculated or Il Movement Classes o Il eav V e icle Model Designation

MOVEMENT SUMMARY

Site: 101 Lefroy Street/ Car Park Access Weekend Midday
Peak Hour (Site Folder: Existing Weekend Midday Peak Hour)

Le ro Street Car Park Access MP ea our
Site Category one
Give Way T Way

Vehicle Movement Performance													
Mov ID	Turn	I VOL Tot	P MES V	T DEM LOWS Tot	D	Deg S at	ve Dela	Level o Servic	C E E Dist	P rof E ue	E c S toj Rat	ve o S peed	ver
S out East Car Park Access													
	L							LOS					
	R							LOS					
	pproac							LOS					
ort East Le ro Street													
	L							LOS					
	T							LOS					
	pproac							LOS					
S out West Le ro Street													
	T							LOS					
	R							LOS					
	pproac							LOS					
Il V e ic													

Site Level o Service LOS Met od Dela S I DR Site LOS Met od is specttinge dialog P riter S e
Vehicle movement LOS values are ased on average dela per movement
Minor Road pproac LOS values are ased on average dela or all ve icle movements
I intersection LOS and Ma or Road pproac LOS values are ot pplia sign oot since t e average delas no
a good LOS measure due to ero dela s associated it ma or road movements
Dela Model S I DR S tandard Geometric Dela is included
ueue Model S I DR S tandard
Gap cceptance Capacit S I DR S tandard eli M D
V values are calculated or Il Movement Classes o Il eav V e icle Model Designation



SIDRA Results - Post Development

Appendix C

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MOVEMENT SUMMARY

Site: 101 Argyle Street/ Lefroy Street Weekday AM Peak Hour -
PD (Site Folder: Post Development Weekday AM Peak Hour)

Argyle Street Lefroy Street Weekday AM Peak Hour
Site Category: one
Give Way: TW

Vehicle Movement Performance													
Mov ID	Turn	I VOL	P MES	T DEM	D LOWS	Deg S at	Delat	Level o	Service	C	P	E	ec
		Tot: ve	V	Tot: ve	V	v	Sec			Ve	E Dist	ue	S toj
S out East Argyle Street													
	L							LOS					
	T							LOS					
pproac													
ort West Argyle Street													
	T							LOS					
	R							LOS					
pproac													
S out West Lefroy Street													
	L							LOS					
	R							LOS					
pproac													
Il V e ic													

Site Level of Service LOS Method Delay S I D R Site LOS Method is spectring dialog P Ariter Se
Vehicle movement LOS values are based on average delay per movement
Minor Road pproac LOS values are based on average delay for all vehicle movements
Intersection LOS and Major Road pproac LOS values are not applied since the average delays not
a good LOS measure due to zero delays associated with major road movements
Delay Model S I D R Standard Geometric Delay is included
Queue Model S I D R Standard
Gap acceptance Capacity S I D R Standard eliminated
Values are calculated for 11 Movement Classes of Heavy Vehicle Model Designation

MOVEMENT SUMMARY

▽ Site: 101 Argyle Street/ Lefroy Street Weekday Mid Peak Hour
- PD (Site Folder: Post Development Weekday Midday Peak Hour)

Argyle Street Lefroy Street Weekday Mid Peak Hour
Site Category: one
Give Way: TW

Vehicle Movement Performance													
Mov ID	Turn	I VOL Tot	P MES V	T DEM LOWS Tot	D	Deg S at	Delat	Level o Servic	ve	E E Dist	P rof E use	ec S toj Rat	ve o S peed
S out East Argyle Street													
	L							LOS					
	T							LOS					
pproac													
ort West Argyle Street													
	T							LOS					
	R							LOS					
pproac													
S out West Lefroy Street													
	L							LOS					
	R							LOS					
pproac													
Il V e ic													

Site Level o Service LOS Met od Delat S I DR Site LOS Met od is specttinge dialog P riter S e
Vehicle movement LOS values are ased on average dela per movement
Minor Road pproac LOS values are ased on average dela or all ve icle movements
I intersection LOS and Ma or Road pproac LOS values are ot pplia sign oot since t e average delat no
a good LOS measure due to ero dela s associated it ma or road movements
Dela Model S I DR S tandard Geometric Delat is included
ueue Model S I DR S tandard
Gap cceptance Capacit S I DR S tandard eli M D
V values are calculated or Il Movement Classes o Il eav V e icle Model Designation

MOVEMENT SUMMARY

Site: 101 Argyle Street/ Lefroy Street Weekday PM Peak Hour -
PD (Site Folder: Post Development Weekday PM Peak Hour)

Argyle Street Lefroy Street Weekday PM Peak Hour
Site Category: one
Give Way: TW

Vehicle Movement Performance													
Mov ID	Turn	I VOL	P MES	T DEM	D LOWS	Deg S at	Delat	Level o	Service	C	P	E	ec
		Tot: ve	V	Tot: ve	V	v	Sec			Ve	E Dist	ue	S toj
S out East Argyle Street													
	L							LOS					
	T							LOS					
pproac													
ort West Argyle Street													
	T							LOS					
	R							LOS					
pproac													
S out West Lefroy Street													
	L							LOS					
	R							LOS					
pproac													
Il V e ic													

Site Level of Service LOS Method Delay S I D R Site LOS Method is spectring dialog P Ariter Se
Vehicle movement LOS values are based on average delay per movement
Minor Road proac LOS values are based on average delay for all vehicle movements
Intersection LOS and Major Road proac LOS values are not applied since the average delays not
a good LOS measure due to zero delays associated with major road movements
Delay Model S I D R Standard Geometric Delay is included
Queue Model S I D R Standard
Gap acceptance Capacity S I D R Standard Reliability M D
Values are calculated for 11 Movement Classes of Heavy Vehicle Model Designation

Site: 101 Argyle Street/ Lefroy Street Weekend Midday Peak Hour - PD (Site Folder: Post Development Weekend Midday Peak Hour)

rg le S treet Le ro S treet Wee da M P ea our
S ite Categor one
Give Wa T Wa

Vehicle Movement Performance																								
Mov ID	Turn	I V	P OL	T MES	DEM T ot	D LOWS	D V	Deg S	at	vel Dela	Level o S	ervice	ve	E E	Dist	Progr	E ue	ec' S toj	R at	C	vel o cle	ver S	peed	
		ve		ve				v		sec		ve		m								m		
S out		East		rg		le S		treet																
		L												LOS										
		T												LOS										
pproac																								
ort		West		rg		le S		treet																
		T												LOS										
		R												LOS										
pproac																								
S out		West		Le		ro		S															treet	
		L												LOS										
		R												LOS										
pproac																								
Il V e ic																								

Site Level of Service (LOS) is based on average delay per movement. Minor Road approach LOS values are based on average delay for all vehicle movements. Intersection LOS and Major Road approach LOS values are not applicable since the average delay is not a good LOS measure due to zero delay associated with major road movements. Delay Model S I D R Standard Geometric Delay is included. Queue Model S I D R Standard. Gap Acceptance Capacity S I D R Standard. Eligible Movement Classes of Heavy Vehicle Model Designation.

Eli a et S treet Le ro S treet Wee da M P ea our
S ite Categor one
Give Wa T Wa

Site Level of Service (LOS) is based on average delay per movement. Minor Road approach LOS values are based on average delay for all vehicle movements. Intersection LOS and Major Road approach LOS values are not applicable for approaches to the intersection. A good LOS measure due to low delay is associated with low delay for all vehicle movements. Delay Model S I D R Standard Geometric Delay is included. Queue Model S I D R Standard. Gap Acceptance Capacity S I D R Standard. Eligible Movement Classes of Heavy Vehicle Model Designation.

Site: 101 Elizabeth Street/ Lefroy Street Weekday Mid Peak Hour - PD (Site Folder: Post Development Weekday Midday Peak Hour)

Eli a et S treet	Le ro	S treet Wee da	M P ea	our
S ite Categor	one			
Give Wa	T Wa			

Vehicle Movement Performance																
Mov ID	Turn	I V	P OL	T MES	DEM T ot	D LOWS V	Deg S atr	vel Dela	Level o S ervic			C E Dist	P rof ue	ec' S toj R at	vel o cle	ver S peed m
		ve			ve		v	sec			ve					m
S out East Eli a et S treet																
T									LOS							
R									LOS							
pproac																
ort East Le ro S treet																
L									LOS							
R									LOS							
pproac									LOS							
ort West Eli a et S treet																
L									LOS							
T									LOS							
pproac																
Il V e ic																

Site Level of Service (LOS) is based on average delay per movement. Minor Road approach LOS values are based on average delay for all vehicle movements. Intersection LOS and Major Road approach LOS values are not applicable for approaches to the intersection. A good LOS measure due to low delay is associated with low delay for all vehicle movements. Delay Model S I D R Standard Geometric Delay is included. Queue Model S I D R Standard. Gap Acceptance Capacity S I D R Standard. Eligible Movement Classes of Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

▽ Site: 101 Elizabeth Street/ Lefroy Street Weekday PM Peak
Hour - PD (Site Folder: Post Development Weekday PM Peak
Hour)

Eli a et S treet Le ro S treet Wee da M P ea our
Site Categor one
Give Wa T Wa

Vehicle Movement Performance													
Mov	Turn	I	P	T	DEM	D	Deg	vel	Level o	C	P	ro	E
ID		VOL	MES		LOWS		S ati	Dela	S ervic	E E	u	S toj	ec
		Tot:	V		Tot:	V	V	sec		ve	Dist	R ati	C
S out East Eli a et S treet													
	T								LOS				
	R								LOS				
	pproac												
ort East Le ro S treet													
	L								LOS				
	R								LOS				
	pproac								LOS				
ort West Eli a et S treet													
	L								LOS				
	T								LOS				
	pproac												
Il V e ic													

Site Level o S service LOS Met od Dela S I DR Site LOS Met od is spectting that P S ite S e
Ve icle movement LOS values are ased on average dela per movement
Minor Road pproac LOS values are ased on average dela or all ve icle movements
I ntersection LOS and Ma or Road pproac LOS values are ot pplia sign on t e average dela s not
a good LOS measure due to ero dela s associated it ma or road movements
Dela Model S I DR S tandard Geometric Dela is included
ueue Model S I DR S tandard
Gap cceptance Capacit S I DR S tandard eli M D
V values are calculated or Il Movement Classes o Il eav V e icle Model Designation

Site: 101 Elizabeth Street/ Lefroy Street Weekend Midday Peak
Hour - PD (Site Folder: Post Development Weekend Midday Peak
Hour)

Eli a et S treet Le ro S treet Wee da M P ea our
S ite Categor one
Give Wa T Wa

Vehicle Movement Performance																
Mov ID	Turn	I V	P OL	T MES	DEM T ot	D LOWS V	Deg S atr	vel Dela	Level o S ervic			C E Dist	P rof ue	ec' S toj R at	vel o cle	ver S peed m
S out East Eli a et S treet																
T									LOS							
R									LOS							
pproac																
ort East Le ro S treet																
L									LOS							
R									LOS							
pproac																
ort West Eli a et S treet																
L									LOS							
T									LOS							
pproac																
Il V e ic																

Site Level of Service (LOS) is based on average delay per movement. Minor Road approach LOS values are based on average delay for all vehicle movements. Intersection LOS and Major Road approach LOS values are not applicable for signalized intersections. The average delay is not a good LOS measure due to the delay associated with major road movements. Delay Model S I D R Standard Geometric Delay is included. Queue Model S I D R Standard. Gap Acceptance Capacity S I D R Standard. Eligible Movement Classes of Heavy Vehicle Model Designation.

Site: 101 Lefroy Street/ Car Park Access Weekday AM Peak Hour - PD (Site Folder: Post Development Weekday AM Peak Hour)

Le ro Street Car P ar ccess M P ea our
Site Categor one
Give Wa T We

Vehicle Movement Performance																				
Mov ID	Turn	I/O Tot	POT	TOT	DEM	D LWS	D V	Deg S	at	vel Dela	Level o S	ervic	ve	E Dist	Proje	E R	ec: S toj	vel o C	ver S	peed
		ve			ve			v	sec				ve	m	ue		R	cle	m	
S out East		Car P ar		ccess																
L																		LOS		
R																		LOS		
pproac																		LOS		
ort East		Le ro		S treet																
L																		LOS		
T																		LOS		
pproac																		LOS		
S out West		Le ro		S treet																
T																		LOS		
R																		LOS		
pproac																		LOS		
Il V e		ic																		

Site Level of Service (LOS) is based on average delay per movement. Minor Road approach LOS values are based on average delay for all vehicle movements. Intersection LOS and Major Road approach LOS values are not applicable for signalized intersections. The average delay is not a good LOS measure due to the delay associated with minor road movements. Delay Model S I D R Standard Geometric Delay is included. Queue Model S I D R Standard. Gap Acceptance Capacity S I D R Standard. Eligible Movement Classes of Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

▽ Site: 101 Lefroy Street/ Car Park Access Weekday Mid Peak
Hour - PD (Site Folder: Post Development Weekday Midday Peak Hour)

Le ro S treet Car P ar ccess M P ea our
Site Category one
Give Way T Way

Vehicle Movement Performance													
Mov ID	Turn	I P T VOL MES Tot: V	DEM D LOWS Tot: V	Deg S ati	vel Level o Dela S ervic	C i P ro f E ec	ve E E u e	S toj R ati	vel o S peed				
		ve	ve	v	sec	ve	Dist m						m
S out East Car P ar ccess													
	L								LOS				
	R								LOS				
	pproac								LOS				
ort East Le ro S treet													
	L								LOS				
	T								LOS				
	pproac								LOS				
S out West Le ro S treet													
	T								LOS				
	R								LOS				
	pproac								LOS				
Il V e ic													

Site Level o S service LOS Met od Dela S I DR Site LOS Met od is spectting that P ridenter S e
Ve icle movement LOS values are ased on average dela per movement
Minor Road pproac LOS values are ased on average dela or all ve icle movements
I ntersection LOS and Ma or Road pproac LOS values are ot pplia sign on t e average dela s not
a good LOS measure due to ero dela s associated it ma or road movements
Dela Model S I DR S tandard Geometric Dela is included
ueue Model S I DR S tandard
Gap cceptance Capacit S I DR S tandard eli M D
V values are calculated or Il Movement Classes o Il eav Ve icle Model Designation

MOVEMENT SUMMARY

▽ Site: 101 Lefroy Street/ Car Park Access Weekday PM Peak
Hour - PD (Site Folder: Post Development Weekday PM Peak
Hour)

Le ro S treet Car P ar ccess M P ea our
Site Category one
Give Wa T Wa

Vehicle Movement Performance													
Mov	Turn	I	P	T	DEM	D	Deg	vel	Level o	C	P	ro	E
ID		VOL	MES		LOS	LOS	Sati	De	Servic	E	E	u	S
		Tot	V		Tot	V		ve		ve	Dist	R	at
		ve			ve			sec			m		
S out East Car P ar ccess													
	L								LOS				
	R								LOS				
	pproac								LOS				
ort East Le ro S treet													
	L								LOS				
	T								LOS				
	pproac								LOS				
S out West Le ro S treet													
	T								LOS				
	R								LOS				
	pproac								LOS				
Il V e ic													

Site Level o S service LOS Met od Dela S I DR Site LOS Met od is spectting that P S ite S e
V e icle movement LOS values are ased on average dela per movement
Minor Road pproac LOS values are ased on average dela or all ve icle movements
I ntersection LOS and Ma or Road pproac LOS values are ot pplia sign on t e average dela not
a good LOS measure due to ero dela s associated it ma or road movements
Dela Model S I DR S tandard Geometric Dela is included
ueue Model S I DR S tandard
Gap cceptance Capacit S I DR S tandard eli M D
V values are calculated or Il Movement Classes o Il eav V e icle Model Designation

▼ Site: 101 Lefroy Street/ Car Park Access Weekend Midday
Peak Hour - PD (Site Folder: Post Development Weekend Midday
Peak Hour)

Le ro Street Car P ar ccess M P ea our
Site Categor one
Give Wa T We

Vehicle Movement Performance																
Mov ID	Turn	I/O Tot	P/V	T/MES V	DEM Tots	D/LOWS V	Deg S attr	vel Dela	Level o S ervic			C/E Dist	P rof ue	ec/ S toj R atr	vel o cle	ver S peed m
S out East		Car P ar		ccess												
L		LOS														
R		LOS														
pproac		LOS														
ort East		Le ro		S treet												
L		LOS														
T		LOS														
pproac		LOS														
S out West		Le ro		S treet												
T		LOS														
R		LOS														
pproac		LOS														
Il V e ic																

Site Level of Service (LOS) is based on average delay per movement. Minor Road approach LOS values are based on average delay for all vehicle movements. Intersection LOS and Major Road approach LOS values are not applicable since the average delay is not a good LOS measure due to zero delay associated with major road movements. Delay Model S I D R Standard Geometric Delay is included. Queue Model S I D R Standard. Gap Acceptance Capacity S I D R Standard. Eligible Movement Classes of Heavy Vehicle Model Designation.



SIDRA Results - 10-years Post Development

Appendix D

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MOVEMENT SUMMARY

▽ Site: 101 Argyle Street/ Lefroy Street Weekday AM Peak Hour -
10PD (Site Folder: 10 -years Post Development Weekday AM Peak
Hour)

Argyle Street Lefroy Street Weekday AM Peak Hour
Site Category: one
Give Way: T Way

Vehicle Movement Performance													
Mov ID	Turn	I P T VOL MES	DEM D LOWS	Deg S at	Delat S ervic	Level o	C	P	ro	E	ec	vel	ver
		Tot: V	Tot: V				E E	u	S to	R at	C	cle	m
S out East Argyle Street													
	L					LOS							
	T					LOS							
pproac													
ort West Argyle Street													
	T					LOS							
	R					LOS							
pproac													
S out West Lefroy Street													
	L					LOS							
	R					LOS							
pproac													
II V e ic													

Site Level of Service LOS Method Delay S I DR Site LOS Method is spectting that P 8121212121212121
Vehicle movement LOS values are based on average delay per movement
Minor Road proac LOS values are based on average delay for all vehicle movements
Intersection LOS and Major Road proac LOS values are not applicable sign on the average delay not
a good LOS measure due to zero delays associated with major road movements
Delay Model S I DR Standard Geometric Delay is included
Queue Model S I DR Standard
Gap acceptance Capacity S I DR Standard Eligible M D
Values are calculated for II Movement Classes of II Heavy Vehicle Model Designation

MOVEMENT SUMMARY

▽ Site: 101 Argyle Street/ Lefroy Street Weekday Mid Peak Hour
- 10PD (Site Folder: 10 -years Post Development Weekday Midday Peak Hour)

Argyle Street/ Lefroy Street Weekday Mid Peak Hour
Site Category: One
Give Way: T Way

Vehicle Movement Performance														
Mov ID	Turn	I VOL Tot	P MES V	T	DEM Tots	D LOWS V	Deg S at	vel Dela	Level o S ervic	C E E Dist m	P rof u	E ec S tol R at	vel o S peed C	ver ped
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ort West Argle Street														
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pproac														
S out West Lefroy Street														
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LOS														
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Site Level of Service LOS Method Delay S I DR Site LOS Method is specttng that P r d n t e r S e
Vehicle movement LOS values are based on average delay per movement
Minor Road pproac LOS values are based on average delay for all vehicle movements
Intersection LOS and Major Road pproac LOS values are not applied sign on t h e average delays not
a good LOS measure due to zero delays associated with major road movements
Delay Model S I DR Standard Geometric Delay is included
Queue Model S I DR Standard
Gap acceptance Capacity S I DR Standard Reliability M D
Values are calculated for All Movement Classes of All Heavy Vehicle Model Designation

MOVEMENT SUMMARY

▽ Site: 101 Argyle Street/ Lefroy Street Weekday PM Peak Hour -
10PD (Site Folder: 10 -years Post Development Weekday PM Peak
Hour)

Argyle Street Lefroy Street Weekday PM Peak Hour
Site Category: one
Give Way: TW

Vehicle Movement Performance													
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ort West Argyle Street													
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	pproac												
S out West Lefroy Street													
	L											LOS	
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All Vehicle													

Site Level of Service LOS Method Delay S I D R Site LOS Method is specttng that P Aritater Se
Vehicle movement LOS values are based on average delay per movement
Minor Road proac LOS values are based on average delay for all vehicle movements
Intersection LOS and Major Road proac LOS values are not applied sign on the average delays not
a good LOS measure due to zero delays associated with major road movements
Delay Model S I D R Standard Geometric Delay is included
Queue Model S I D R Standard
Gap acceptance Capacity S I D R Standard Reliability M D
Values are calculated for All Movement Classes of Heavy Vehicle Model Designation

MOVEMENT SUMMARY

▽ Site: 101 Argyle Street/ Lefroy Street Weekend Midday Peak
Hour - 10PD (Site Folder: 10 -years Post Development Weekend
Midday Peak Hour)

Argyle Street/ Lefroy Street Weekend Midday Peak
Site Category: one
Give Way: TW

Vehicle Movement Performance													
Mov ID	Turn	I VOL	P MES	T	DEM T ot:	D LOWS	D	Deg S ati	Delat	Level o	S ervic	C E E	P rof E
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	L									LOS			
	T									LOS			
pproac													
ort West Argyle Street													
	T									LOS			
	R									LOS			
pproac													
S out West Lefroy Street													
	L									LOS			
	R									LOS			
pproac													
Il V e ic													

Site Level of Service LOS Method Delay S I DR Site LOS Method is specttng that P r d n t e r S e
Vehicle movement LOS values are based on average delay per movement
Minor Road pproac LOS values are based on average delay for all vehicle movements
Intersection LOS and Major Road pproac LOS values are not applied sign on t h e average delays not
a good LOS measure due to zero delays associated with major road movements
Delay Model S I DR Standard Geometric Delay is included
Queue Model S I DR Standard
Gap acceptance Capacity S I DR Standard Reliability M D
Values are calculated for all Movement Classes of all heavy Vehicle Model Designation

MOVEMENT SUMMARY

▽ Site: 101 Elizabeth Street/ Lefroy Street Weekday AM Peak
Hour - 10PD (Site Folder: 10 -years Post Development Weekday
AM Peak Hour)

Eli a et S treet Le ro S treet Wee da M P ea our
Site Categor one
Give Wa T Wa

Vehicle Movement Performance															
Mov I D	Turn	I VOL Tot: ve	P MES V	T	DEM LOWS Tot: ve	D	Deg S ati v	vel Dela	Level o S ervic	C i	E E	P ro f u e	E ec: S toj R ati	vel o C	ver S peed m
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T									LOS						
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ort East Le ro S treet															
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pproac															
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pproac															
II V e ic															

Site Level o S service LOS Met od Dela S I DR Site LOS Met od is spectting that P S ite S e
Ve icle movement LOS values are ased on average dela per movement
Minor Road pproac LOS values are ased on average dela or all ve icle movements
I ntersection LOS and Ma or Road pproac LOS values are ot pplia sign on t e average dela s not
a good LOS measure due to ero dela s associated it ma or road movements
Dela Model S I DR S tandard Geometric Dela is included
ueue Model S I DR S tandard
Gap cceptance Capacit S I DR S tandard eli M D
V values are calculated or II Movement Classes o II eav V e icle Model Designation

MOVEMENT SUMMARY

▽ Site: 101 Elizabeth Street/ Lefroy Street Weekday Mid Peak
Hour - 10PD (Site Folder: 10 -years Post Development Weekday
Midday Peak Hour)

Eli a et S treet Le ro S treet Wee da M P ea our
Site Categor one
Give Wa T Wa

Vehicle Movement Performance															
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Site Level o S service LOS Met od Dela S I DR Site LOS Met od is spectting that P ridenter S e
Ve icle movement LOS values are ased on average dela per movement
Minor Road pproac LOS values are ased on average dela or all ve icle movements
I ntersection LOS and Ma or Road pproac LOS values are ot pplia sign on t e average dela s not
a good LOS measure due to ero dela s associated it ma or road movements
Dela Model S I DR S tandard Geometric Dela is included
ueue Model S I DR S tandard
Gap cceptance Capacit S I DR S tandard eli M D
V values are calculated or II Movement Classes o II eav V e icle Model Designation

MOVEMENT SUMMARY

▽ Site: 101 Elizabeth Street/ Lefroy Street Weekday PM Peak
Hour - 10PD (Site Folder: 10 -years Post Development Weekday
PM Peak Hour)

Eli a et S treet Le ro S treet Wee da M P ea our
Site Categor one
Give Wa T Wa

Vehicle Movement Performance															
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Site Level o S service LOS Met od Dela S I DR Site LOS Met od is spectting that P S ite S e
Ve icle movement LOS values are ased on average dela per movement
Minor Road pproac LOS values are ased on average dela or all ve icle movements
I ntersection LOS and Ma or Road pproac LOS values are ot pplia sign on t e average dela s not
a good LOS measure due to ero dela s associated it ma or road movements
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ueue Model S I DR S tandard
Gap cceptance Capacit S I DR S tandard eli M D
V values are calculated or II Movement Classes o II eav Ve icle Model Designation

▼ Site: 101 Elizabeth Street/ Lefroy Street Weekend Midday Peak
Hour - 10PD (Site Folder: 10 -years Post Development Weekend
Midday Peak Hour)

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S ite Categor	one			
Give Wa	T Wa			

Vehicle Movement Performance																
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T									LOS							
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ort		East	Le	ro	S treet											
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R									LOS							
pproac																
ort		West	El	a	et	S treet										
L									LOS							
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pproac																
Il V e ic																

Site Level of Service (LOS) is based on average delay per movement. Minor Road approach LOS values are based on average delay for all vehicle movements. Intersection LOS and Major Road approach LOS values are not applicable since the average delay is not a good LOS measure due to zero delay associated with major road movements. Delay Model S I D R Standard Geometric Delay is included. Queue Model S I D R Standard. Gap Acceptance Capacity S I D R Standard. Eligible Movement Classes of Heavy Vehicle Model Designation.

▼ Site: 101 Lefroy Street/ Car Park Access Weekday AM Peak Hour - 10PD (Site Folder: 10 -years Post Development Weekday AM Peak Hour)

Le ro Street Car P ar ccess M P ea our
Site Categor one
Give Wa T We

Vehicle Movement Performance																				
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Site Level of Service LOS Met or Delay S I D R Site LOS Met or Delay is specting the P and the S e
Vehicle movement LOS values are based on average delay per movement
Minor Road approach LOS values are based on average delay or all vehicle movements
Intersection LOS and Major Road approach LOS values are not applied to the average delay nor
a good LOS measure due to the delay associated with the approach movements
Delay Model S I D R Standard Geometric Delay is included
Queue Model S I D R Standard
Gap Acceptance Capacity S I D R Standard
Values are calculated for all Movement Classes or Heavy Vehicle Model Designation

Site: 101 Lefroy Street/ Car Park Access Weekday Mid Peak Hour - 10PD (Site Folder: 10 -years Post Development Weekday Midday Peak Hour)

Le ro Street Car P ar ccess M P ea our
Site Categor one
Give Wa T We

Vehicle Movement Performance																	
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Site Level of Service LOS Met or Delay S I D R Site LOS Met or Delay Specting the P and the S e
Vehicle movement LOS values are based on average delay per movement
Minor Road approach LOS values are based on average delay or all vehicle movements
Intersection LOS and Major Road approach LOS values are not applied separately to the average delay nor
a good LOS measure due to the delay associated with major road movements
Delay Model S I D R Standard Geometric Delay is included
Queue Model S I D R Standard
Gap Acceptance Capacity S I D R Standard
Values are calculated for all Movement Classes or Heavy Vehicle Model Designation

MOVEMENT SUMMARY

▽ Site: 101 Lefroy Street/ Car Park Access Weekday PM Peak
Hour - 10PD (Site Folder: 10 -years Post Development Weekday
PM Peak Hour)

Le ro S treet Car P ar ccess M P ea our
Site Category one
Give Way T Way

Vehicle Movement Performance													
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	pproac								LOS				
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Site Level o S service LOS Met od Dela S I DR Site LOS Met od is spectting that P S ite S e
Ve icle movement LOS values are ased on average dela per movement
Minor Road pproac LOS values are ased on average dela or all ve icle movements
I ntersection LOS and Ma or Road pproac LOS values are ot pplia sign on t e average dela s not
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ueue Model S I DR S tandard
Gap cceptance Capacit S I DR S tandard eli M D
V values are calculated or Il Movement Classes o Il eav Ve icle Model Designation

MOVEMENT SUMMARY

Site: 101 Lefroy Street/ Car Park Access Weekend Midday
Peak Hour - 10PD (Site Folder: 10 -years Post Development
Weekend Midday Peak Hour)

Le ro S treet Car P ar ccess M P ea our
Site Categor one
Give Wa T Wa

Vehicle Movement Performance												
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S out East Car P ar ccess												
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ort East Le ro S treet												
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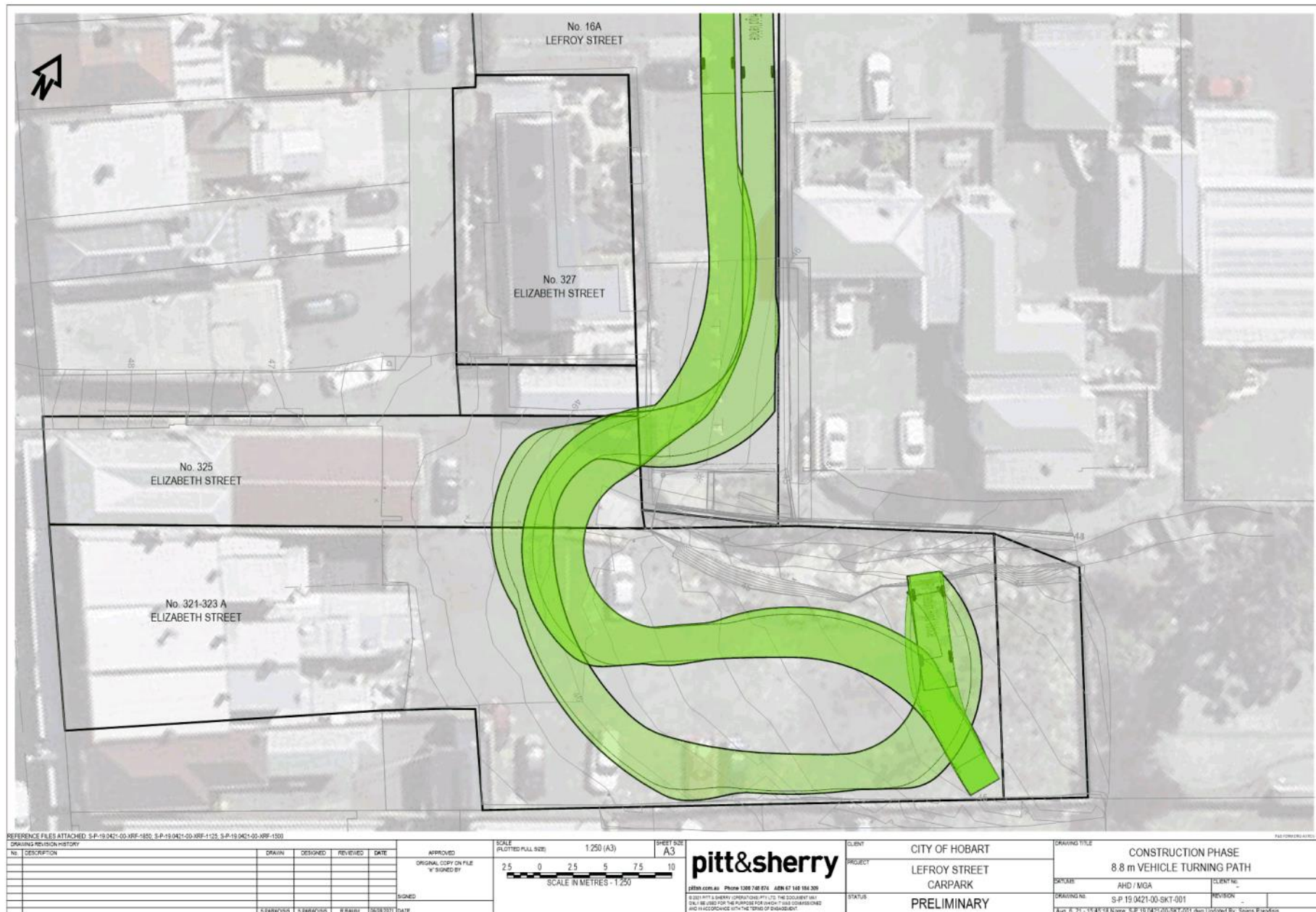
Site Level o S service LOS Met od Dela S I DR Site LOS Met od is spectting that P 81212121 S e
Ve icle movement LOS values are ased on average dela per movement
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Gap cceptance Capacit S I DR S tandard eli M D
V values are calculated or Il Movement Classes o Il eav V e icle Model Designation



Swept Paths - 8.8 m MRV

Appendix E

pitt&sherry





321-323A Elizabeth Street Car Park

Traffic Impact Assessment

**Pitt & Sherry
(Operations) Pty Ltd**
ABN 67 140 184 309

Phone 1300 748 874
info@pittsh.com.au
pittsh.com.au

Located nationally —

Melbourne
Sydney
Brisbane
Hobart
Launceston
Newcastle
Devonport





Enquiries to: City Life
Phone: (03) 6238 2711
Email: coh@hobartcity.com.au

10 May 2022

Glenn Doyle (Hobart City Council, by their agent Ireninc Planning and Urban Design) [mailto: michela@ireneinc.com.au](mailto:michela@ireneinc.com.au)
C/O 49 Tasma Street
North Hobart Tas 7009

Dear Sir/Madam

**321 - 323A ELIZABETH STREET & 325 ELIZABETH STREET & LEFROY STREET,
NORTH HOBART
GMC-CAR PARKS AND ASSOCIATED WORKS NOTICE OF LAND OWNER CONSENT
TO LODGE A PLANNING APPLICATION - GMC-22-35**

Site Address:

16A Lefroy Street, 321-323A, 325 Elizabeth Street, North Hobart

Description of Proposal:

Demolition, Alterations, Partial Change of Use to Car Park, and Associated Works

Applicant Name:

IreneInc Planning on behalf of Hobart City Council

PLN (if applicable):

PLN-22-266

I write to advise that pursuant to Section 52 of the *Land Use Planning and Approvals Act 1993*, I grant my consent on behalf of the Hobart City Council as the owner/administrator of the above land for you to make application to the City for a planning permit for the development described above and as per the attached documents. I granted consent pursuant to delegation, a copy of which is enclosed.

Please note that the granting of the consent is only for the making of the application and in no

Hobart Town Hall
50 Macquarie Street
Hobart TAS 7000

Hobart Council Centre
16 Elizabeth Street
Hobart TAS 7000

City of Hobart
GPO Box 503
Hobart TAS 7001

T 03 6238 2711
F 03 6234 7109
E coh@hobartcity.com.au
W hobartcity.com.au

CityofHobartOfficial
ABN 39 055 343 428
Hobart City Council

way should such consent be seen as prejudicing any decision the Council is required to make as the statutory planning authority.

This consent does not constitute an approval to undertake any works and does not authorise the owner, developer or their agents any right to enter or conduct works on any Council managed land whether subject to this consent or not.

If planning approval is granted by the planning authority, you will be required to seek approvals and permits from the City as both landlord, land manager, or under other statutory powers (such as other legislation or City By-Laws) that are not granted with the issue of a planning permit under a planning scheme. This includes the requirement for you to reapply for a permit to occupy a public space under the City's Public Spaces By-law if the proposal relates to such an area.

Accordingly, I encourage you to continue to engage with the City about these potential requirements.

Yours faithfully



(Kelly Grigsby)

Chief Executive Officer being the General Manager as appointed by Council pursuant to section 61 of the Local Government Act 1993 (Tas)

Relevant documents/plans:

Drawings 001, 011, 101, 111, 121, 131, 201, 202, 211, 502, 503, 601, 602 & 603 dated 23/03/2022 from Pitt & Sherry



Approved - General
 Manager Consent Only
 GMC-22-35 10/05/2022

CITY OF HOBART LEFROY STREET CAR PARK UPGRADES AND EXTENSION

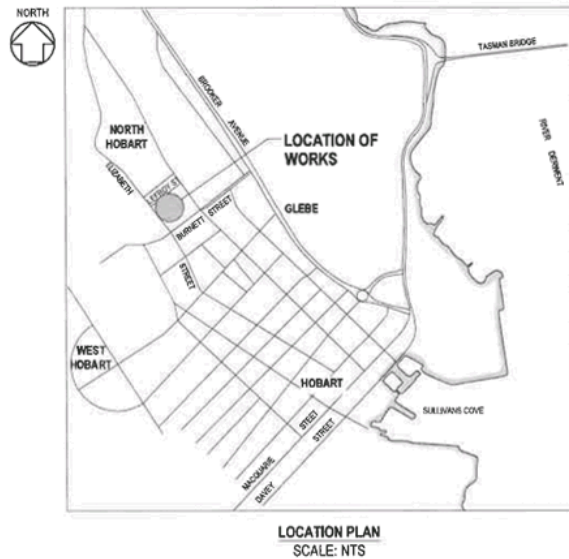
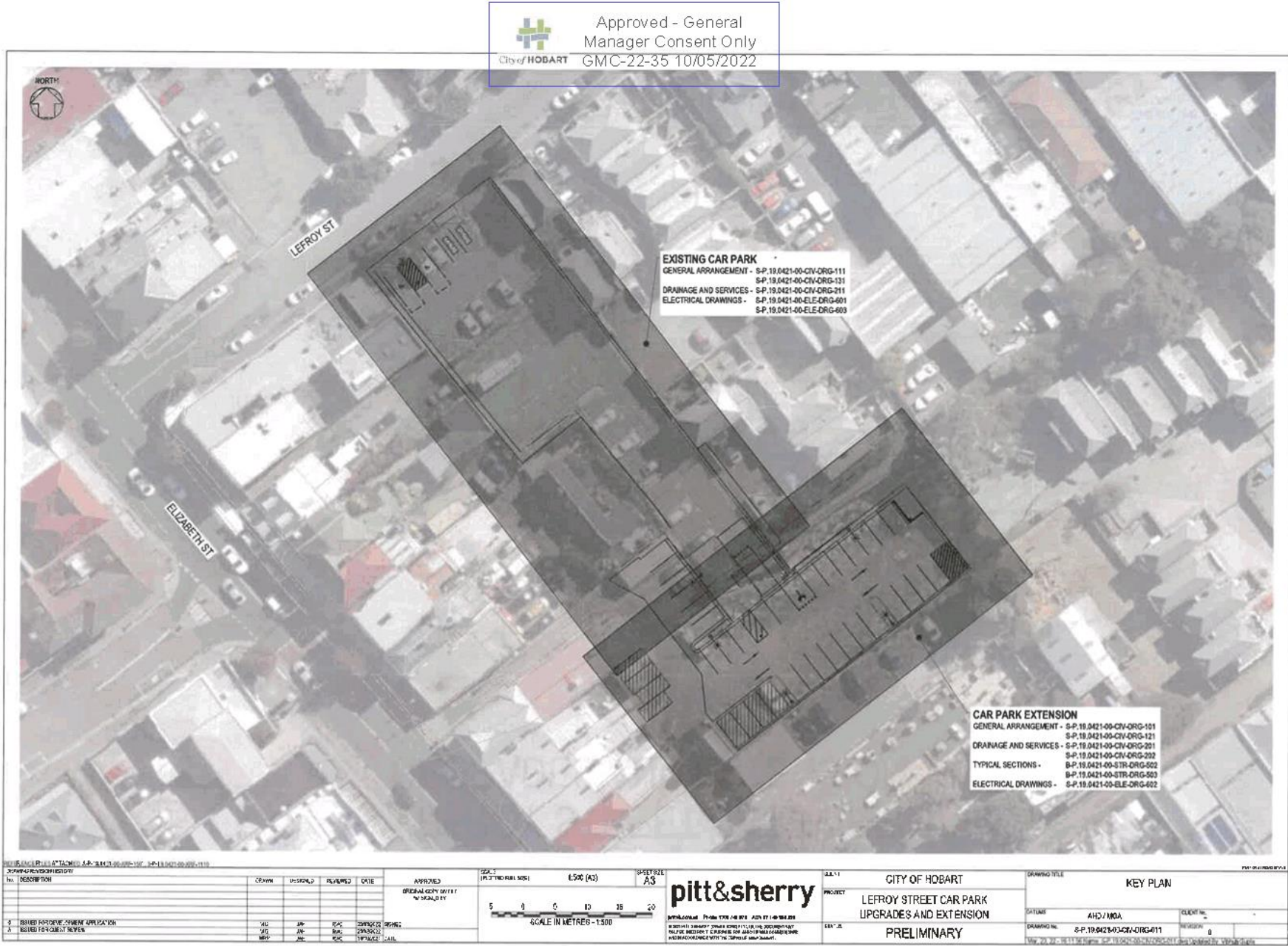
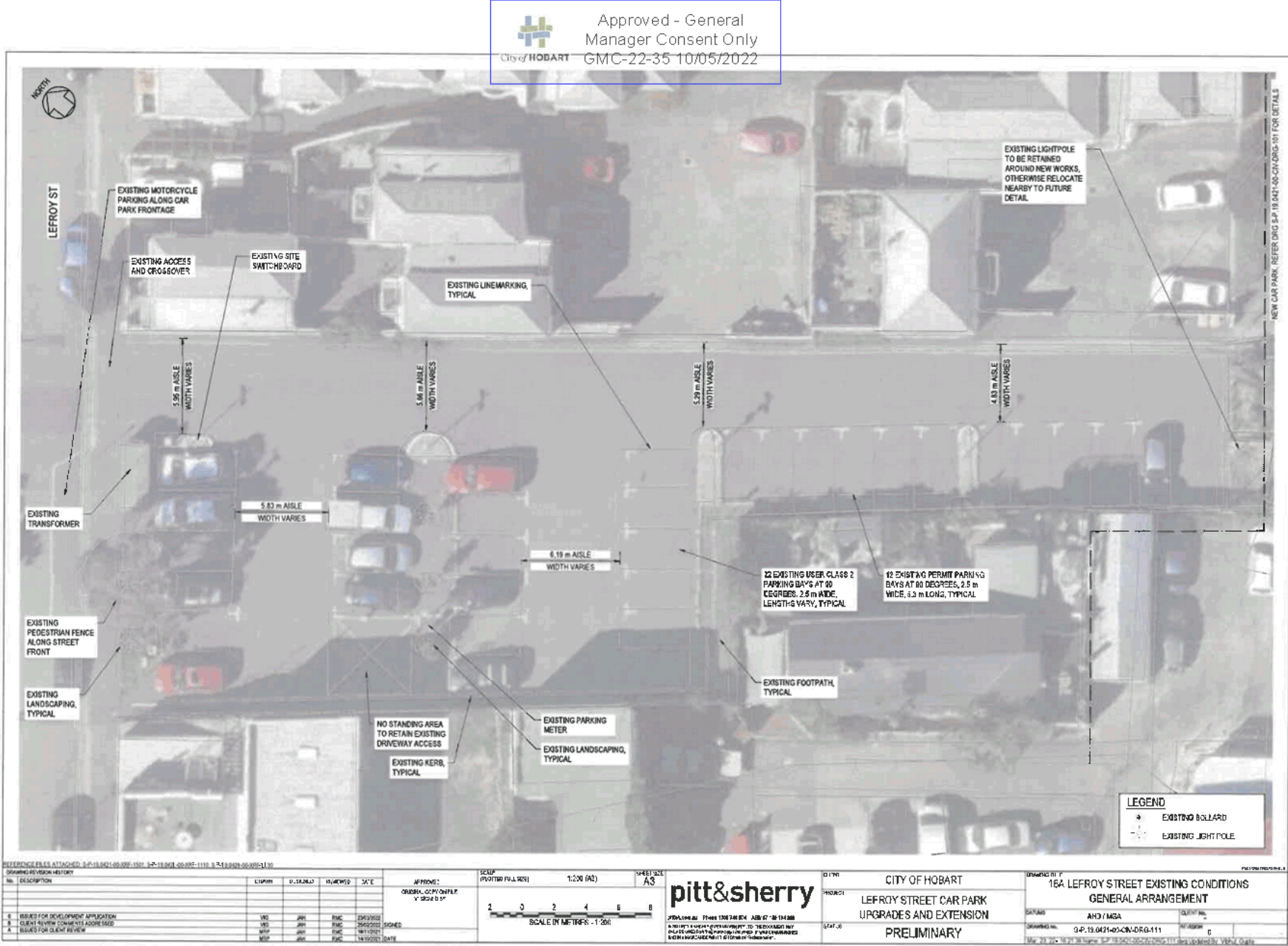


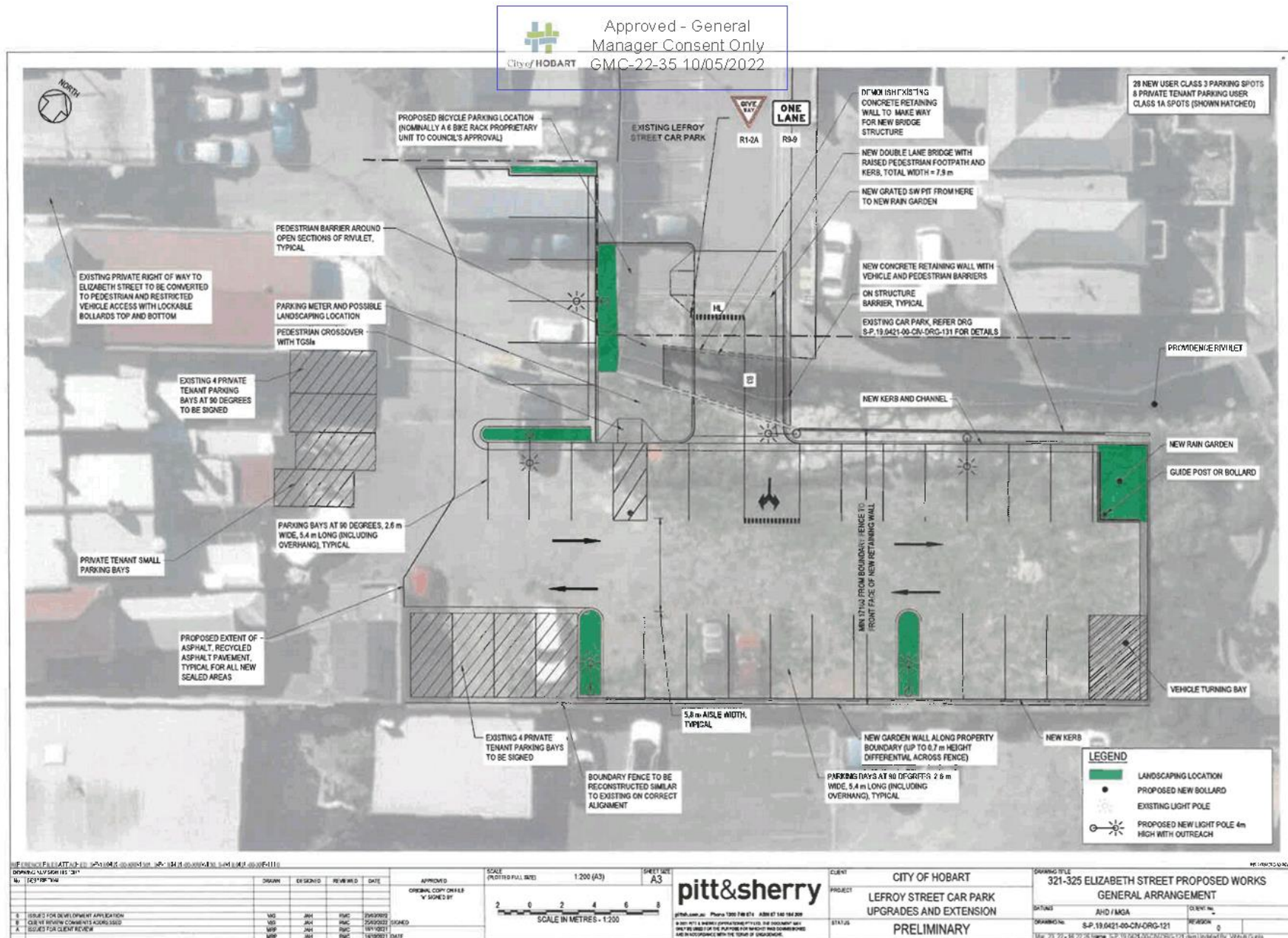
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S-P.19.0421-00-CIV-DRG-011	0	KEY PLAN
S-P.19.0421-00-CIV-DRG-101	0	321-325 ELIZABETH STREET EXISTING CONDITIONS GENERAL ARRANGEMENT
S-P.19.0421-00-CIV-DRG-111	0	16A LEFROY STREET EXISTING CONDITIONS GENERAL ARRANGEMENT
S-P.19.0421-00-CIV-DRG-121	0	321-325 ELIZABETH STREET PROPOSED WORKS GENERAL ARRANGEMENT
S-P.19.0421-00-CIV-DRG-131	0	16A LEFROY STREET PROPOSED WORKS GENERAL ARRANGEMENT
S-P.19.0421-00-CIV-DRG-201	0	321-325 ELIZABETH STREET DRAINAGE AND SERVICES PLAN
S-P.19.0421-00-CIV-DRG-202	0	NEW CAR PARK STORMWATER MAIN LONGITUDINAL SECTION
S-P.19.0421-00-CIV-DRG-211	0	EXISTING CAR PARK DRAINAGE AND SERVICES PLAN
B-P.19.0421-00-STR-DRG-502	0	321-325 ELIZABETH STREET TYPICAL SECTION THROUGH BRIDGE
B-P.19.0421-00-STR-DRG-503	0	321-325 ELIZABETH STREET RETAINING WALL ELEVATION AND TYPICAL SECTIONS
S-P.19.0421-00-ELE-DRG-601	0	16A LEFROY STREET ELECTRICAL SERVICES PLAN
S-P.19.0421-00-ELE-DRG-602	0	321-325 ELIZABETH STREET ELECTRICAL SERVICES PLAN
S-P.19.0421-00-ELE-DRG-603	0	321-325 ELIZABETH STREET - ELECTRICAL SINGLE LINE DIAGRAM - CAR PARK SWITCHBOARD

REFERENCE FILE ATTACHED				DRAWING NUMBER		DRAWING TITLE		DRAWING DATE	
DRAWING REVISION HISTORY				CITY OF HOBART		LEFROY STREET CAR PARK UPGRADES AND EXTENSION		COVER SHEET AND TABLE OF CONTENTS	
NO.	DESCRIPTION	DRAWN	CHECKED	REVISED	DATE	APPROVED	SCALE	PROJECT	STATUS
1	ISSUED FOR TENDER APPLICATION	WKS	JKH	RWC	20/05/2022	PRELIMINARY	1:100	CITY OF HOBART	PRELIMINARY
2	FOR TENDER APPLICATION	WKS	JKH	RWC	20/05/2022				
3	FOR TENDER APPLICATION	WKS	JKH	RWC	20/05/2022				

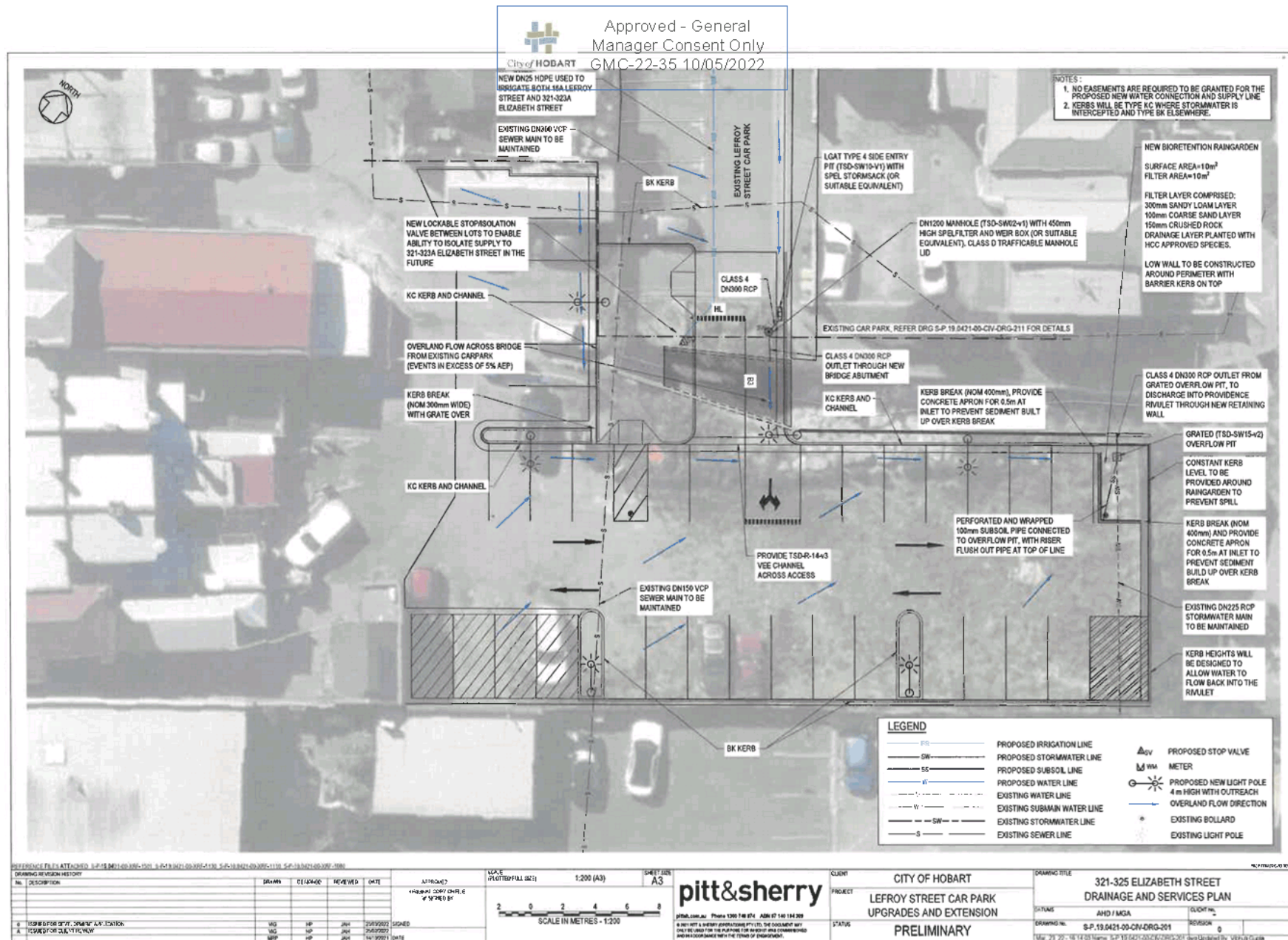




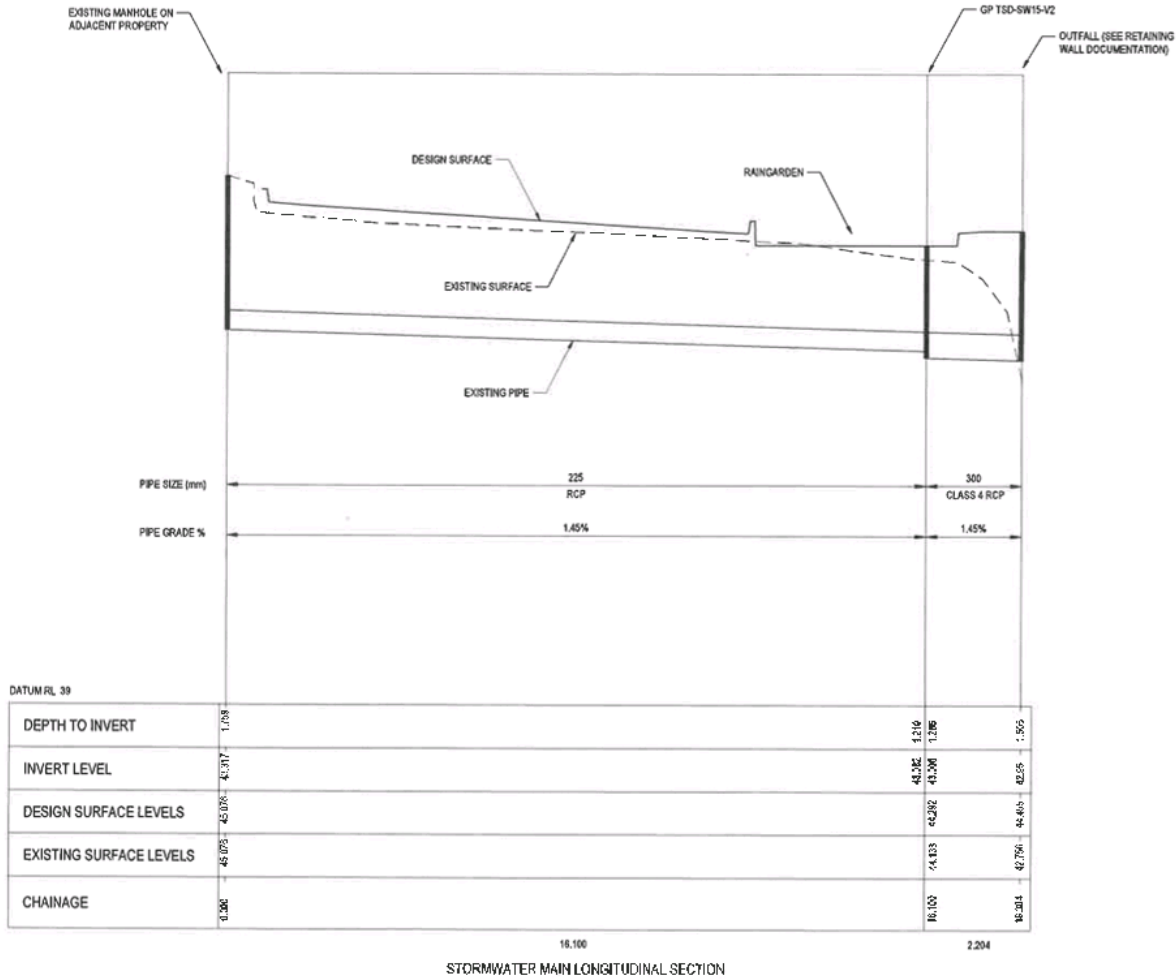








Approved - General
Manager Consent Only
GMC-22-35 10/05/2022

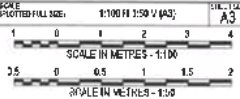


REFERENCE FILES ATTACHED: S-P-18-0421-00-CIV-1100

DRAWING REVISION HISTORY

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2	ISSUED FOR PRELIMINARY APPROVAL	WKS	JP	AM	10/05/2022

APPROVED
ORIGINAL COPY ON FILE
AT SHERIDAN



pitt&sherry

100m 1:500 V (A3)

SCALE IN METRES - 1:100

SCALE IN METRES - 1:50

CITY OF HOBART

LEFROY STREET CAR PARK
UPGRADES AND EXTENSION

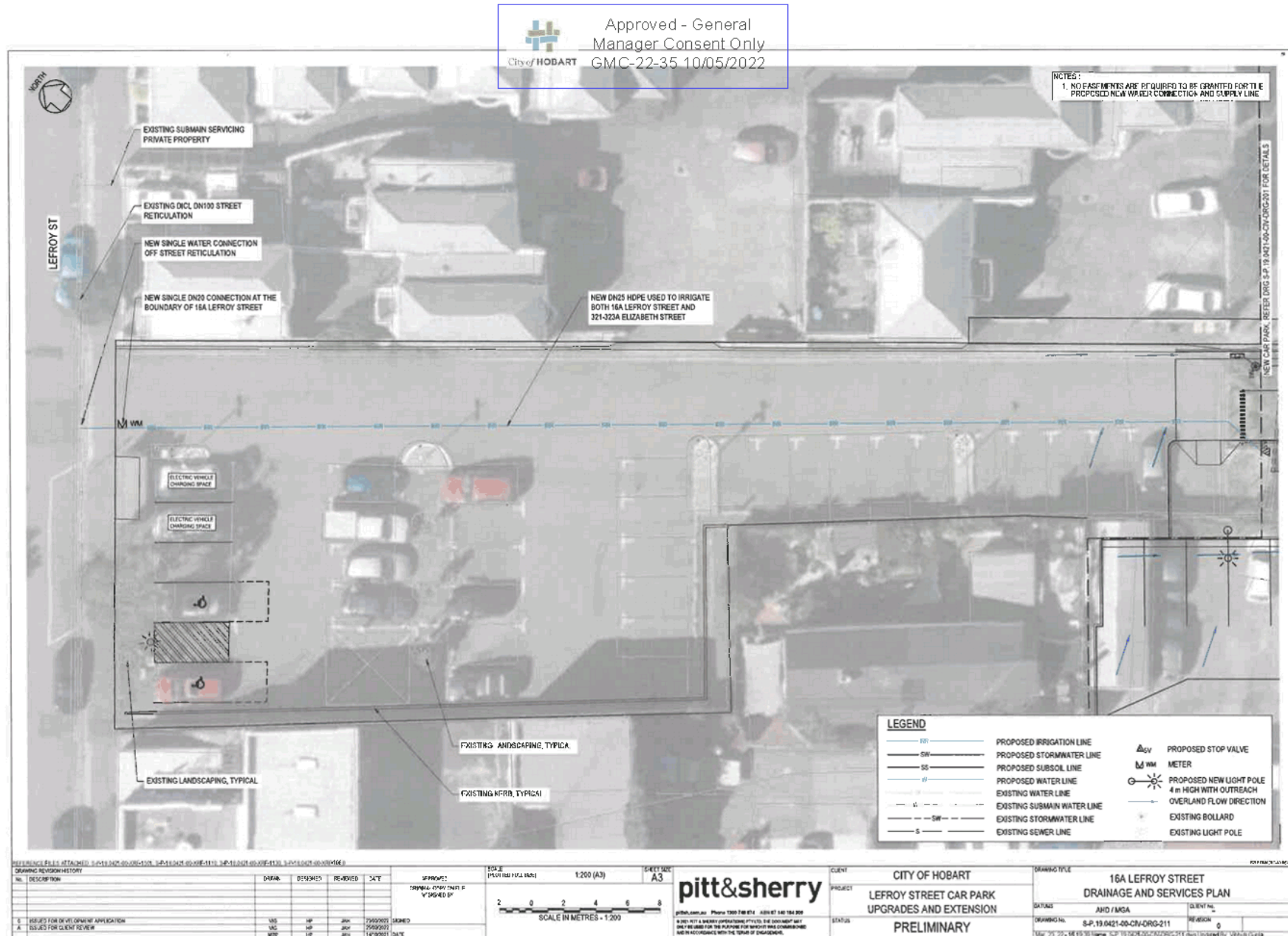
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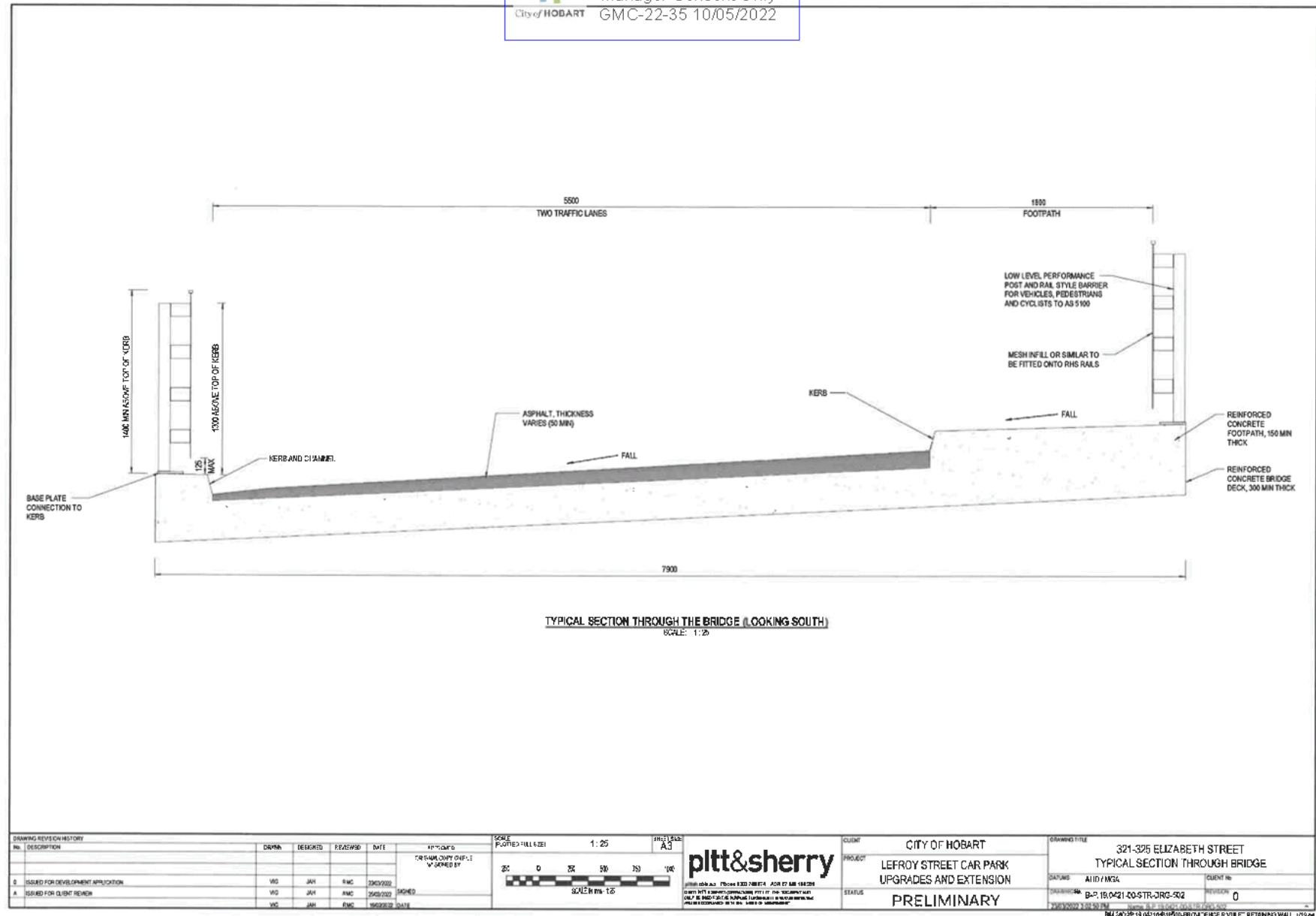
DRAWING TITLE 321-325 ELIZABETH STREET
STORMWATER MAIN LONGITUDINAL SECTION

DRAWN AHD/IMG

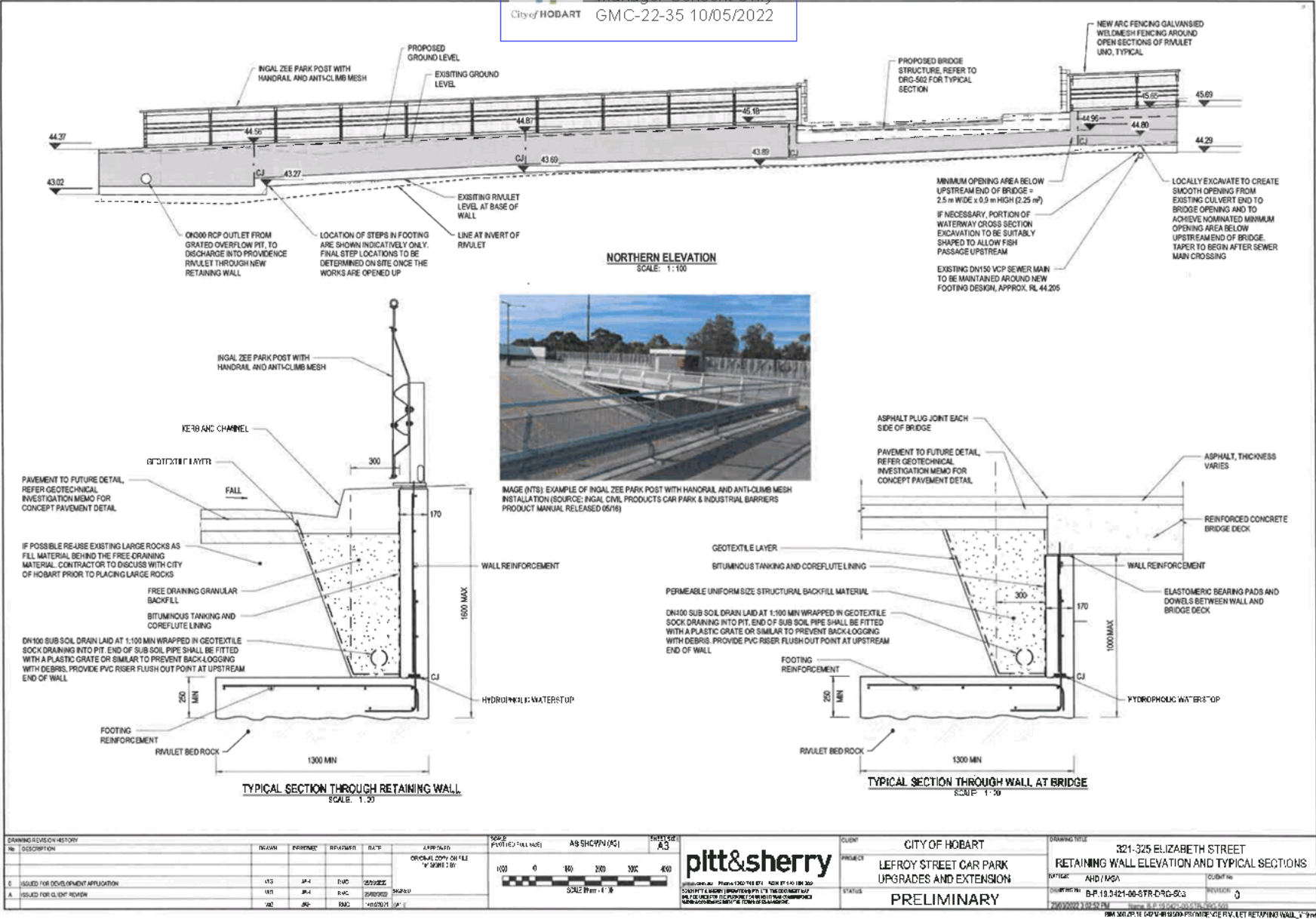
CLIENT NO. S-P-18-0421-00-CIV-DRG-202

REVISION 0





Approved - General
Manager Consent Only
GMC-22-35 10/05/2022



Approved - General
Manager Consent Only
GMC-22-35 10/05/2022







Submission to Planning Authority Notice

Council Planning Permit No.	PLN-22-266	Council notice date	10/05/2022
TasWater details			
TasWater Reference No.	TWDA 2022/00686-HCC	Date of response	18/05/2022
TasWater Contact	Al Cole	Phone No.	0439605108
Response issued to			
Council name	CITY OF HOBART		
Contact details	coh@hobartcity.com.au		
Development details			
Address	321-323 ELIZABETH ST, NORTH HOBART	Property ID (PID)	5662281
Description of development	Partial Demolition, Alterations, Partial Change of Use to Carpark		
Schedule of drawings/documents			
Prepared by	Drawing/document No.	Revision No.	Date of Issue
Pitt and Sherry	Drainage & Services Plan	0	23/03/2022
Conditions			
Pursuant to the <i>Water and Sewerage Industry Act 2008</i> (TAS) Section 56P(1) TasWater imposes the following conditions on the permit for this application:			
CONNECTIONS, METERING & BACKFLOW			
<ol style="list-style-type: none"> 1. A suitably sized water supply with metered connections and (if applicable) sewerage system and connections to the development must be designed and constructed to TasWater's satisfaction and be in accordance with any other conditions in this permit. 2. Any removal/supply and installation of water meters and/or the removal of redundant and/or installation of new and modified property service connections must be carried out by TasWater at the developer's cost. 3. Prior to commencing construction/use of the development, any water connection utilised for construction/the development must have a backflow prevention device and water meter installed, to the satisfaction of TasWater. 			
ASSET CREATION & INFRASTRUCTURE WORKS			
<ol style="list-style-type: none"> 4. The developer must take all precautions to protect existing TasWater infrastructure. Any damage caused to existing TasWater infrastructure during the construction period must be promptly reported to TasWater and repaired by TasWater at the developer's cost. 5. Ground levels over the TasWater assets and/or easements must not be altered without the written approval of TasWater. 			
56W CONSENT			
<ol style="list-style-type: none"> 6. Prior to the issue of the Certificate for Certifiable Work (Building) and/or (Plumbing) by TasWater the applicant or landowner as the case may be must make application to TasWater pursuant to section 56W of the <i>Water and Sewerage Industry Act 2008</i> for its consent in respect of that part of the development which is built within a TasWater easement or over or within two metres of TasWater infrastructure. 			

**DEVELOPMENT ASSESSMENT FEES**

7. The applicant or landowner as the case may be, must pay a development assessment fee of \$219.04, to TasWater, as approved by the Economic Regulator and the fee will be indexed, until the date paid to TasWater.

The payment is required within 30 days of the issue of an invoice by TasWater.

Advice**General**

For information on TasWater development standards, please visit <https://www.taswater.com.au/building-and-development/technical-standards>

For application forms please visit <https://www.taswater.com.au/building-and-development/development-application-form>

Service Locations

Please note that the developer is responsible for arranging to locate the existing TasWater infrastructure and clearly showing it on the drawings. Existing TasWater infrastructure may be located by a surveyor and/or a private contractor engaged at the developers cost to locate the infrastructure. The location of this infrastructure as shown on the GIS is indicative only.

- (a) A permit is required to work within TasWater's easements or in the vicinity of its infrastructure. Further information can be obtained from TasWater
- (b) TasWater has listed a number of service providers who can provide asset detection and location services should you require it. Visit www.taswater.com.au/Development/Service-location for a list of companies
- (c) TasWater will locate residential water stop taps free of charge
- (d) Sewer drainage plans or Inspection Openings (IO) for residential properties are available from your local council.

56W Consent

The plans submitted with the application for the Certificate for Certifiable Work (Building) and/or (Plumbing) will need to show footings of proposed structures, including the proposed new bridge, located over or within 2.0m from TasWater pipes and will need to be designed by a suitably qualified person to adequately protect the integrity of TasWater's infrastructure, and to TasWater's satisfaction, be in accordance with AS3500 Part 2.2 Section 3.8 to ensure that no loads are transferred to TasWater's pipes. These plans will need to also include a cross sectional view through the footings which clearly shows;

- (a) Existing pipe depth and proposed finished surface levels over the pipe;
- (b) The line of influence from the base of any footing must pass below the invert of the pipe and be clear of the pipe trench and;
- (c) A note on the plan indicating how the pipe location and depth were ascertained.

Declaration

The drawings/documents and conditions stated above constitute TasWater's Submission to Planning Authority Notice.

TasWater Contact Details

Phone	13 6992	Email	development@taswater.com.au
Mail	GPO Box 1393 Hobart TAS 7001	Web	www.taswater.com.au

**7.2.2 2/38A MACFARLANE STREET, SOUTH HOBART - PARTIAL
DEMOLITION, ALTERATIONS AND EXTENSION
PLN-22-271 - FILE REF: F22/81828**

Address: 2/38A MacFarlane Street, South Hobart
Proposal: Partial Demolition, Alterations and Extension
Expiry Date: 27 September 2022
Extension of Time: Not applicable
Author: Mark O'Brien

RECOMMENDATION

That pursuant to the *Hobart Interim Planning Scheme 2015*, the City Planning Committee, in accordance with the delegations contained in its terms of reference, approve the application for partial demolition, alterations and extension at 2/38A MacFarlane Street, South Hobart 7004, for the reasons outlined in the officer's report and a permit containing the following conditions be issued:

GEN

The use and/or development must be substantially in accordance with the documents and drawings that comprise PLN-22-271 - 2/38A MACFARLANE STREET SOUTH HOBART TAS 7004 - Final Planning Documents, except where modified below.

Reason for condition

To clarify the scope of the permit.

PLN s1

Prior to the issue of any approval under the *Building Act 2016*, revised plans must be submitted and approved as a Condition Endorsement showing:

1. design treatments on/near the study windows W6 and W7 that minimise overlooking of the adjoining properties windows and private open space areas.

Works must be completed in accordance with the approved design treatments.

Advice:

This condition requires further information to be submitted as a Condition Endorsement. Refer to the Condition Endorsement advice at the end of this permit.

Reason for condition

To provide reasonable opportunity for privacy for dwellings and private open space.

ENG sw1

All stormwater from the proposed development (including but not limited to: roofed areas, ag drains, retaining wall ag drains and impervious surfaces such as driveways and paved areas) must be drained to the Council's stormwater infrastructure prior to first occupation or commencement of use (whichever occurs first).

Advice:

Under section 23 of the Urban Drainage Act 2013 it is an offence for a property owner to direct stormwater onto a neighbouring property.

Reason for condition

To ensure that stormwater from the site will be discharged to a suitable Council approved outlet.

ENG 1

Any damage to council infrastructure resulting from the implementation of this permit, must, at the discretion of the Council:

1. Be met by the owner by way of reimbursement (cost of repair and reinstatement to be paid by the owner to the Council); or
2. Be repaired and reinstated by the owner to the satisfaction of the Council.

A photographic record of the Council's infrastructure adjacent to the subject site must be provided to the Council prior to any commencement of works.

A photographic record of the Council's infrastructure (e.g. existing property service connection points, roads, buildings, stormwater, footpaths, driveway crossovers and nature strips, including if any, pre-existing damage) will be relied upon to establish the extent of damage caused to the Council's infrastructure during construction. In the event that the owner/developer fails to provide to the Council a photographic record of the Council's infrastructure, then any damage to the Council's infrastructure found on completion of works will be deemed to be the responsibility of the owner.

Reason for condition

To ensure that any of the Council's infrastructure and/or site-related service connections affected by the proposal will be altered and/or reinstated at the owner's full cost.

ENV 1

Sediment and erosion control measures sufficient to prevent sediment from leaving the site must be installed prior to any disturbance of the site, and maintained until all areas of disturbance have been stabilized or re-vegetated.

Advice:

For further guidance in preparing a Soil and Water Management Plan – in accordance with Fact sheet 3 Derwent Estuary Program click [here](#).

Reason for condition

To avoid the sedimentation of roads, drains, natural watercourses, Council land that could be caused by erosion and runoff from the development, and to comply with relevant State legislation.

ADVICE

The following advice is provided to you to assist in the implementation of the planning permit that has been issued subject to the conditions above. The advice is not exhaustive and you must inform yourself of any other legislation, by-laws, regulations, codes or standards that will apply to your development under which you may need to obtain an approval. Visit the Council's [website](#) for further information.

Prior to any commencement of work on the site or commencement of use the following additional permits/approval may be required from the Hobart City Council.

CONDITION ENDORSEMENT

If any condition requires that further documents are submitted and approved, you will need to submit the relevant documentation to satisfy the condition via the Condition Endorsement Submission on Council's [online services e-planning portal](#). Detailed instructions can be found [here](#).

A fee of 2% of the value of the works for new public assets (stormwater infrastructure, roads and related assets) will apply for the condition endorsement application.

Once approved, the Council will respond to you via email that the condition has been endorsed (satisfied).

Where building approval is also required, it is recommended that documentation for condition endorsement be submitted well before submitting documentation for building approval. Failure to address condition endorsement requirements prior to submitting for building approval may result in unexpected delays.

BUILDING PERMIT

You may need building approval in accordance with the *Building Act 2016*. Click [here](#) for more information.

PLUMBING PERMIT

You may need plumbing approval in accordance with the *Building Act 2016*, *Building Regulations 2016* and the National Construction Code. Click [here](#) for more information.

STORMWATER




Please note that in addition to a building and/or plumbing permit, development must be in accordance with the Hobart City Council's Infrastructure By law. Click [here](#) for more information.

FEES AND CHARGES

Click [here](#) for information on the Council's fees and charges.

DIAL BEFORE YOU DIG

Click [here](#) for dial before you dig information.

- | | |
|---------------|---|
| Attachment A: | PLN-22-271 - 2/38A MACFARLANE STREET
SOUTH HOBART TAS 7004 - Planning Committee
or Delegated Report ↓  |
| Attachment B: | PLN-22-271 - 2/38A MACFARLANE STREET
SOUTH HOBART TAS 7004 - CPC Agenda
Documents ↓  |
| Attachment C: | PLN-22-271 - 2/38A MACFARLANE STREET
SOUTH HOBART TAS 7004 - Planning Referral
Officer Cultural Heritage Report ↓  |

**APPLICATION UNDER HOBART INTERIM PLANNING SCHEME 2015**

Type of Report:	Committee
Committee:	22 August 2022
Expiry Date:	27 September 2022
Application No:	PLN-22-271
Address:	2 / 38 A MACFARLANE STREET , SOUTH HOBART
Applicant:	Adelle Drury (studioacd) 3 Star Street
Proposal:	Partial Demolition, Alterations and Extension
Representations:	Five
Performance criteria:	Zone Development Standards; Historic Heritage Code; Parking and Access Code

1. Executive Summary

- 1.1 Planning approval is sought for Partial Demolition, Alterations and Extension at 2/38A Macfarlane Street, South Hobart.
- 1.2 More specifically the proposal includes:
 - a second storey addition to a single storey dwelling.
 - a new study, bedroom and ensuite
 - an additional gross floor area of approximately 34m².
- 1.3 The proposal relies on performance criteria to satisfy the following standards and codes:
 - 1.3.1 Inner Residential Zone - Setbacks and Building Envelope; Privacy
 - 1.3.2 Parking and Access Code - Number of Parking Spaces
 - 1.3.3 Historic Heritage Code - Heritage Precinct
- 1.4 Five (5) representations objecting to the proposal were received within the statutory advertising period between 21 July 2022 and 4 August 2022.
- 1.5 The proposal is recommended for approval subject to conditions.

- 1.6 The final decision is delegated to the City Planning Committee, because 5 representation objecting to the proposal were received and the proposal is recommended for approval.

2. Site Detail

- 2.1 The site at 2/38A Macfarlane Street is part of a strata complex of two detached dwellings with a shared driveway. The site contains a two bedroom, single storey dwelling. The site is in an inner residential neighbourhood bordered by dwellings on all sides.



Figure 1: Aerial image of site, shown in blue outline (source: LISTmap, accessed 9 Aug 2022)

3. Proposal

- 3.1 Planning approval is sought for Partial Demolition, Alterations and Extension at 2/38A Macfarlane Street, South Hobart.

3.2 More specifically the proposal is for:

- a second storey addition to a single storey dwelling.
- a new study, bedroom and ensuite bathroom.
- an additional gross floor area of approximately 34m².

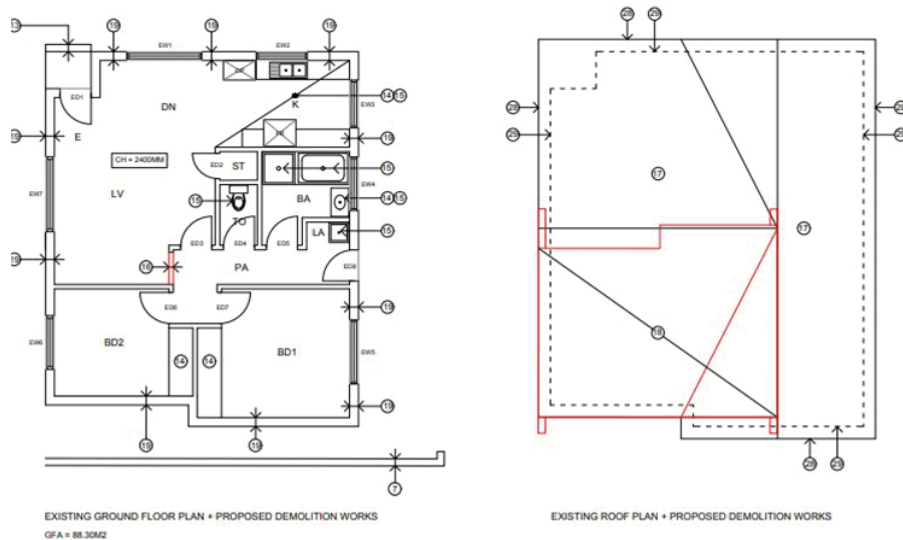


Figure 2: Proposed Demolition Plans (source: Applicant)

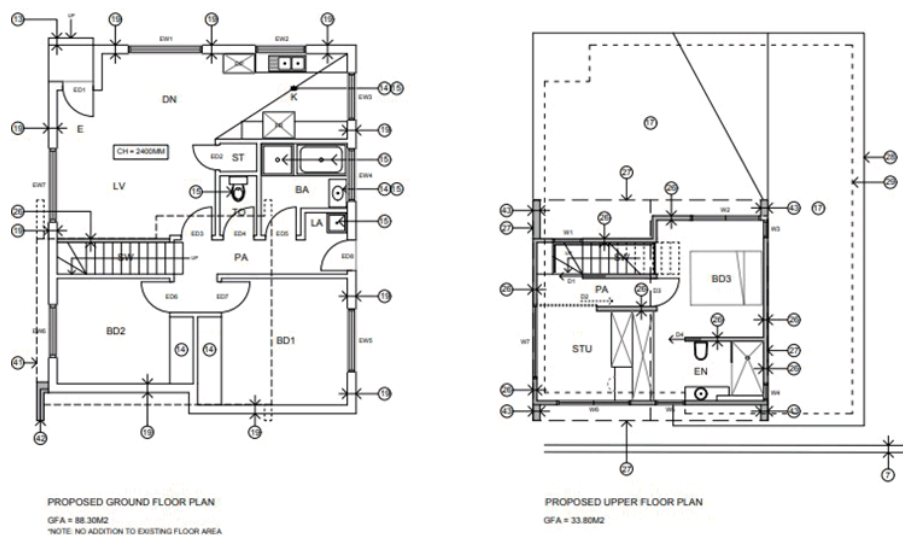


Figure 3: Proposed Floor Plans (source: Applicant)

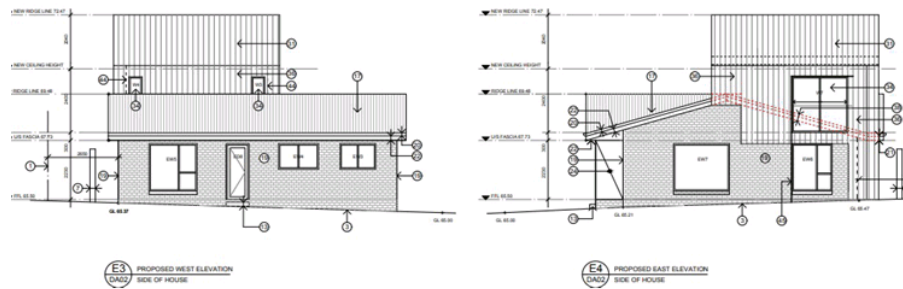


Figure 4: Proposed East/West Elevation Plans (source: Applicant)

4. Background

- 4.1 There is no relevant background for this application.

5. Concerns raised by representors

- 5.1 Five (5) representations objecting to the proposal were received within the statutory advertising period between 21 July 2022 and 4 August 2022.
- 5.2 The following table outlines the concerns raised in the representations received. Those concerns which relate to a discretion invoked by the proposal are addressed in Section 6 of this report.

<p>Heritage</p> <p>Development should be amended to better align with the design aesthetics of other heritage buildings in the area.</p>
<p>Parking and Access</p> <p>The proposal will increase parking and traffic issues in the area as the increased number of bedrooms would lead to more residents and greater demand for parking.</p>
<p>Building Envelope</p> <p>The development should be amended so that the extension is fully contained inside the building envelope.</p> <p>The development will result in significant overshadowing of living areas on adjoining dwellings, resulting in an unreasonable loss of amenity.</p>
<p>Privacy</p> <p>There are windows facing south and west on the first floor extension that are close to boundaries and will negatively impact on privacy of neighbours unless appropriate screening of increased window sill heights are introduced.</p>

6. Assessment

- 6.1 The *Hobart Interim Planning Scheme 2015* is a performance based planning scheme. To meet an applicable standard, a proposal must demonstrate compliance with either an acceptable solution or a performance criterion. Where a proposal complies with a standard by relying on one or more performance criteria, the Council may approve or refuse the proposal on that basis. The ability to approve or refuse the proposal relates only to the performance criteria relied on.
- 6.2 The site is located within the Inner Residential Zone of the *Hobart Interim Planning Scheme 2015*.
- 6.3 The existing and proposed use is residential, which is a permitted use in the zone.

- 6.4 The proposal has been assessed against:
- 6.4.1 Part D - 11 Inner Residential Zone
 - 6.4.2 E5.0 Road and Railway Assets Code
 - 6.4.3 E6.0 Parking and Access Code
 - 6.4.4 E7.0 Stormwater Management Code
 - 6.4.5 E13.0 Historic Heritage Code
- 6.5 The proposal relies on the following performance criteria to comply with the applicable standards:
- 6.5.1 Inner Residential Zone:
 - Setbacks and Building Envelope – Part D 11.4.2 P3*
 - Privacy - Part D 11.4.6 P2*
 - 6.5.2 Parking and Access Code:
 - Number of Parking Spaces - E6.6.1 P1*
 - 6.5.3 Historic Heritage Code:
 - Demolition in a Heritage Precinct - E13.8.1 P1*
 - Building and Works on a Listed Place - E13.8.2 P1; P3*
- 6.6 Each performance criterion is assessed below.
- 6.7 Setbacks and Building Envelope Part D 11.4.2 P3
- 6.7.1 The acceptable solution at clause 11.4.2 A3 requires development to be inside a prescribed building envelope.
 - 6.7.2 The proposal includes a second storey extension that is partly outside the prescribed building envelope.
 - 6.7.3 The proposal does not comply with the acceptable solution; therefore, assessment against the performance criterion is relied on.
 - 6.7.4 The performance criterion at clause 11.4.2 P3 provides as follows:

The siting and scale of a dwelling must:

(a) not cause an unreasonable loss of amenity to adjoining properties, having regard to:

(i) reduction in sunlight to a habitable room (other than a bedroom) of a dwelling on an adjoining property;

(ii) overshadowing the private open space of a dwelling on an adjoining property;

(iii) overshadowing of an adjoining vacant property; and

(iv) visual impacts caused by the apparent scale, bulk or proportions of the dwelling when viewed from an adjoining property; and

(b) provide separation between dwellings on adjoining properties that is consistent with that existing on established properties in the area.

- 6.7.5 The test at clause 11.4.2 P3 requires an assessment of the proposals impact on amenity to adjoining properties. As shown in Figure 5 below, the site is adjoining properties containing dwellings at numbers 1/38B, 2/38B, 1/38A, 1/38, and 2/38 Macfarlane Street, and numbers 55, 57, and 59 Cascade Road. The adjoining dwellings on Macfarlane Street are at a similar elevation to the site, however, the adjoining dwelling on Cascade Road are on higher elevation overlooking the site. The proposals impact on the amenity of these adjoining properties is determined through assessment of overshadowing, visual impact, and separation distances between dwellings.

Overshadowing

Shadow diagrams and three dimensional solar access diagrams have been submitted with the application. These diagrams depict the extent of overshadowing resulting from the proposal, and show a relatively minor increase in overshadowing on the adjoining properties to the east and south, as follows:

- The proposal does not result in overshadowing of the properties at 1/38B, 1/38A, 1/38 and 2/38 Macfarlane Street.
- The proposed results in overshadowing of private open space of the properties at 55, 57, 59 Cascade Road. The minor extent of

overshadowing is predominantly because these adjoining properties are higher in elevation than the site. The overshadowing impacts vary throughout the day but there remains a substantial portion of private open space that remains unfettered at any given point.

- Overshadowing at 2/38B Macfarlane Street occurs most notably in early morning periods, with no overshadowing from around 11am onwards. This morning overshadowing does affect one of the two windows on the eastern facade of the dwelling. However, given the siting of dwellings in the area, it is not unreasonable to expect a level of early morning overshadowing from adjoining dwellings. The property at 2/38B has several areas of private open space with the largest being north of the dwelling. This area is not impacted by overshadowing from the proposal at any time.

Given the above, the proposal introduces overshadowing that is not considered to result in an unreasonable impact on amenity.

Visual impact

When viewed from the adjoining properties, and in context of the surrounding topography containing dwellings at much higher elevations, the proposal presents as a modest second storey addition, similar in scale to many residential dwellings in the surrounding area. In addition, the use of mixed materials and fenestration minimises the apparent bulk by creating a sense of transparency. Moreover, the modest scale of the second storey extension compared to the existing ground floor level, including the simple pitched roof form, ensures that the main bulk of the dwelling remains on ground floor level. In summary, the proposed introduces visual impact that is not considered to result in an unreasonable impact on amenity.

Separation between dwellings

Separation between dwellings on adjoining properties in the surrounding area ranges from approximately 1m (e.g. between 36 and 1/38 Macfarlane Street) to more than 20m (e.g. between the site and dwellings at 55, 57 and 59 Cascade Road). The proposed extension is to be contained within the roof line of the existing dwelling. Therefore, no change will occur to the existing separation between dwellings on adjoining properties. At its closest point, the dwelling on the site is approximately 2m from the nearest dwelling on the adjoining property at 2/38B. This is inside the range that prevails in the surrounding area.

In summary, the proposal presents a level of overshadowing and visual impact that is not unreasonable, and provides for separation between dwellings on adjoining properties that is consistent with that prevailing in the surrounding area.



Figure 5: Aerial image of site showing adjoining properties and dwellings (source: LISTmap, accessed 11 August 2022)

6.7.6 The proposal complies with the performance criterion.

6.8 Privacy - Part D 11.4.6 P2

6.8.1 The acceptable solution at clause 11.4.6 A2 requires the first floor window on the western elevation to be offset by 1.5 from the neighbours window, or have a sill height or screening to a height not less than 1.7 above finished floor level.

6.8.2 The proposal includes a first floor window on the western elevation that is not offset, has a sill height less than 1.7m. and is not screened.

- 6.8.3 The proposal does not comply with the acceptable solution; therefore, assessment against the performance criterion is relied on.
- 6.8.4 The performance criterion at clause 11.4.6 P2 provides as follows:
- A window or glazed door, to a habitable room of dwelling, that has a floor level more than 1m above existing ground level, must be screened, or otherwise located or designed, to minimise direct views to:*
- (a) a window or glazed door, to a habitable room of another dwelling; and*
- (b) the private open space of another dwelling.*
- 6.8.5 The west and south facing windows to the second storey study area have the potential to introduce some overlooking of neighbouring properties. The window on the southern facade overlooks the adjoining private open space at 57 Cascade Road. The window on the western facade overlooks the adjoining windows and courtyard at 2/38B Macfarlane Street. Neither of these windows have been screened or otherwise designed to minimise overlooking potential. Therefore, it is recommended that a condition be placed on any planning permit granted to ensure that these windows include additional design treatments such as increased sill heights, frosted glazing, or fixed screens, to minimise opportunities for direct overlooking. There is no requirement to alter the highlight windows near the roof pitch.
- 6.8.6 The proposal complies with the performance criterion, subject to conditions.
- 6.9 Number of Parking Spaces - E6.6.1 P1
- 6.9.1 The acceptable solution at clause E6.6.1 A1 requires the dwelling to have two onsite parking spaces.
- 6.9.2 The proposal has one onsite parking space and includes an increase from two to three bedrooms.
- 6.9.3 The proposal does not comply with the acceptable solution; therefore, assessment against the performance criterion is relied on.
- 6.9.4 The performance criterion at clause E6.6.1 P1 provides as follows:
- The number of on-site car parking spaces must be sufficient to meet the*

reasonable needs of users, having regard to all of the following:

- (a) car parking demand;*
- (b) the availability of on-street and public car parking in the locality;*
- (c) the availability and frequency of public transport within a 400m walking distance of the site;*
- (d) the availability and likely use of other modes of transport;*
- (e) the availability and suitability of alternative arrangements for car parking provision;*
- (f) any reduction in car parking demand due to the sharing of car parking spaces by multiple uses, either because of variation of car parking demand over time or because of efficiencies gained from the consolidation of shared car parking spaces;*
- (g) any car parking deficiency or surplus associated with the existing use of the land;*
- (h) any credit which should be allowed for a car parking demand deemed to have been provided in association with a use which existed before the change of parking requirement, except in the case of substantial redevelopment of a site;*
- (i) the appropriateness of a financial contribution in lieu of parking towards the cost of parking facilities or other transport facilities, where such facilities exist or are planned in the vicinity;*
- (j) any verified prior payment of a financial contribution in lieu of parking for the land;*
- (k) any relevant parking plan for the area adopted by Council;*
- (l) the impact on the historic cultural heritage significance of the site if subject to the Local Heritage Code;*
- (m) whether the provision of the parking would result in the loss, directly or indirectly, of one or more significant trees listed in the Significant Trees Code.*

- 6.9.5 The application has been referred to Council's Development Engineer, who raised no objection to the existing parking and access arrangements for the site. Despite the additional of a between, the change from a two to a three bedroom dwelling does not increase the theoretical parking demand for the site. The existing parking bay is considered to meet the reasonable needs of an inner residential dwelling.
- 6.9.6 The proposal complies with the performance criterion.
- 6.10 Demolition in a Heritage Precinct - E13.8.1 P1
- 6.10.1 There is no acceptable solution for clause E13.8.1 A1.
- 6.10.2 The proposal includes partial demolition in a heritage precinct.
- 6.10.3 There is no acceptable solution; therefore, assessment against the performance criterion is relied on.
- 6.10.4 The performance criterion at clause E13.8.1 P1 provides as follows:
- Demolition must not result in the loss of any of the following:*
- (a) buildings or works that contribute to the historic cultural heritage significance of the precinct;*
- (b) fabric or landscape elements, including plants, trees, fences, paths, outbuildings and other items, that contribute to the historic cultural heritage significance of the precinct;*
unless all of the following apply;
- (i) there are, environmental, social, economic or safety reasons of greater value to the community than the historic cultural heritage values of the place;*
- (ii) there are no prudent or feasible alternatives;*
- (iii) opportunity is created for a replacement building that will be more complementary to the heritage values of the precinct.*
- 6.10.5 The application has been referred to Council's Cultural Heritage Officer, who provided the following assessment:
- "The proposed demolition includes the southern roof plane in the location

of the proposed addition. There is no demolition affecting the front of the dwelling. As the dwelling does not contribute historical heritage significance to the precinct, the demolition will not affect fabric of heritage significance."

6.10.6 The proposal complies with the performance criterion.

6.11 Building and Works on a Listed Place - E13.8.2 P1; P3

6.11.1 There is no acceptable solution for clause E13.8.2 A1; A3.

6.11.2 The proposal includes building works in a heritage precinct.

6.11.3 There is no acceptable solution; therefore, assessment against the performance criterion is relied on.

6.11.4 The performance criterion at clause E13.8.2 P1; P3 provides as follows:

P1

Design and siting of buildings and works must not result in detriment to the historic cultural heritage significance of the precinct, as listed in Table E13.2.

P3

Extensions to existing buildings must not detract from the historic cultural heritage significance of the precinct.

6.11.5 The application has been referred to Council's Cultural Heritage Officer, who provided the following assessment:

"The proposed works include the construction of a pop-top second storey addition to a single storey dwelling. The existing dwelling is not of heritage significance nor does it contribute historic fabric or heritage significance to the precinct.

The addition will be sited at the rear of the dwelling (which does not have a direct street frontage and is located behind another dwelling), reducing the perceived dominance of the form in the streetscape. View corridors along driveways will likely be the main point of view due to the setback of the addition from the street, although there will be a 2.95 m increase in ridge height. Glazing to both gable ends will increase the transparency

and contribute towards reducing the perceived bulk.

The topography of the surrounding area also creates an appearance of staggered building heights, some appear higher despite the number of single storey dwellings along the eastern end of MacFarlane Street and throughout the precinct.

The design is a contemporary intervention and does not mimic historic features of the precinct. A second storey is acceptable in this instance, due to the existing context and the limited degree of historic heritage significance of the existing dwelling.

The use of James Hardie Axon vertical cladding and roofing is appropriate for the setting as it will not introduce additional dominant, heavy materiality. It is noted that the colour Monument (or similar dark grey) and other non-traditional colours have been used in other areas of the precinct. As the proposed addition is sited to the rear of the dwelling, which is set back from the street and behind another dwelling, it is therefore acceptable to use Monument in this instance, without significantly detracting from the Rivulet setting.

It is noted that the dwelling is identified as non-contributory within the HR1 Heritage Precinct. Buildings of historical significance are not in the immediate surrounds, with numerous other dwellings of a later era located between. The proposed addition will therefore not enhance or detract from the heritage significance of the existing dwelling and its setting within the Precinct."

6.12.6 The proposal complies with the performance criterion.

7. Discussion

- 7.1 Planning approval is sought for Partial Demolition, Alterations and Extension at 2/38A Macfarlane Street, South Hobart.
- 7.2 The application was advertised and received five representations. The representations raised concerns including heritage, parking and access, building envelope, and privacy.
- 7.3 The proposal has been assessed against the relevant provisions of the planning scheme and is considered to perform well.

- 7.4 The proposal has been assessed by other Council officers, including the Council's Development Engineer and Cultural Heritage Officer. The officers have raised no objection to the proposal, subject to conditions.
- 7.5 The proposal is recommended for approval.

8. Conclusion

- 8.1 The proposed Partial Demolition, Alterations and Extension at 2/38A Macfarlane Street, South Hobart, satisfies the relevant provisions of the *Hobart Interim Planning Scheme 2015*, and as such is recommended for approval.

9. Recommendations

That: Pursuant to the *Hobart Interim Planning Scheme 2015*, the City Planning Committee, in accordance with the delegations contained in its terms of reference, approve the application for Partial Demolition, Alterations and Extension at 2/38A Macfarlane Street, South Hobart, for the reasons outlined in the officer's report and a permit containing the following conditions be issued:

GEN

The use and/or development must be substantially in accordance with the documents and drawings that comprise PLN-22-271 - 2/38A MACFARLANE STREET SOUTH HOBART TAS 7004 - Final Planning Documents, except where modified below.

Reason for condition

To clarify the scope of the permit.

PLN s1

Prior to the issue of any approval under the *Building Act 2016*, revised plans must be submitted and approved as a Condition Endorsement showing:

1. **design treatments on/near the study windows W6 and W7 that minimise overlooking of the adjoining properties windows and private open space areas.**

Works must be completed in accordance with the approved design treatments.

Advice:

This condition requires further information to be submitted as a Condition Endorsement. Refer to the Condition Endorsement advice at the end of this permit.

Reason for condition

To provide reasonable opportunity for privacy for dwellings and private open space.

ENG sw1

All stormwater from the proposed development (including but not limited to: roofed areas, ag drains, retaining wall ag drains and impervious surfaces such as driveways and paved areas) must be drained to the Council's stormwater infrastructure prior to first occupation or commencement of use (whichever occurs first).

Advice:

Under section 23 of the Urban Drainage Act 2013 it is an offence for a property owner to direct stormwater onto a neighbouring property.

Reason for condition

To ensure that stormwater from the site will be discharged to a suitable Council approved outlet.

ENG 1

Any damage to council infrastructure resulting from the implementation of this permit, must, at the discretion of the Council:

1. **Be met by the owner by way of reimbursement (cost of repair and reinstatement to be paid by the owner to the Council); or**
2. **Be repaired and reinstated by the owner to the satisfaction of the Council.**

A photographic record of the Council's infrastructure adjacent to the subject site must be provided to the Council prior to any commencement of works.

A photographic record of the Council's infrastructure (e.g. existing property service connection points, roads, buildings, stormwater, footpaths, driveway crossovers and nature strips, including if any, pre-existing damage) will be relied upon to establish the extent of damage caused to the Council's infrastructure during construction. In the event that the owner/developer fails to provide to the Council a photographic record of the Council's infrastructure, then any damage to the Council's infrastructure found on completion of works will be deemed to be the responsibility of the owner.

Reason for condition

To ensure that any of the Council's infrastructure and/or site-related service connections affected by the proposal will be altered and/or reinstated at the owner's full cost.

ENV 1

Sediment and erosion control measures sufficient to prevent sediment from leaving the site must be installed prior to any disturbance of the site, and maintained until all areas of disturbance have been stabilized or re-vegetated.

Advice:

For further guidance in preparing a Soil and Water Management Plan – in accordance with Fact sheet 3 Derwent Estuary Program click [here](#).

Reason for condition

To avoid the sedimentation of roads, drains, natural watercourses, Council land that could be caused by erosion and runoff from the development, and to comply with relevant State legislation.

ADVICE

The following advice is provided to you to assist in the implementation of the planning permit that has been issued subject to the conditions above. The advice is not exhaustive and you must inform yourself of any other legislation, by-laws, regulations, codes or standards that will apply to your development under which you may need to obtain an approval. Visit the Council's [website](#) for further information.

Prior to any commencement of work on the site or commencement of use the following additional permits/approval may be required from the Hobart City Council.

CONDITION ENDORSEMENT

If any condition requires that further documents are submitted and approved, you will need to submit the relevant documentation to satisfy the condition via the Condition Endorsement Submission on Council's [online services e-planning portal](#). Detailed instructions can be found [here](#).

A fee of 2% of the value of the works for new public assets (stormwater infrastructure, roads and related assets) will apply for the condition endorsement application.

Once approved, the Council will respond to you via email that the condition has been endorsed (satisfied).

Where building approval is also required, it is recommended that documentation for condition endorsement be submitted well before submitting documentation for building

approval. Failure to address condition endorsement requirements prior to submitting for building approval may result in unexpected delays.

BUILDING PERMIT

You may need building approval in accordance with the *Building Act 2016*. Click [here](#) for more information.

PLUMBING PERMIT

You may need plumbing approval in accordance with the *Building Act 2016*, *Building Regulations 2016* and the National Construction Code. Click [here](#) for more information.

STORMWATER

Please note that in addition to a building and/or plumbing permit, development must be in accordance with the Hobart City Council's Infrastructure By law. Click [here](#) for more information.

FEES AND CHARGES

Click [here](#) for information on the Council's fees and charges.

DIAL BEFORE YOU DIG

Click [here](#) for dial before you dig information.



(Mark O'Brien)

As signatory to this report, I certify that, pursuant to Section 55(1) of the Local Government Act 1993, I hold no interest, as referred to in Section 49 of the Local Government Act 1993, in matters contained in this report.



(Karen Abey)

Manager Development Appraisal

As signatory to this report, I certify that, pursuant to Section 55(1) of the Local Government Act 1993, I hold no interest, as referred to in Section 49 of the Local Government Act 1993, in matters contained in this report.

Date of Report: 15 August 2022

Attachment(s):

Attachment B - CPC Agenda Documents

Attachment C - Referral Officer Report



DRAWING SCHEDULE

- DA00 INDEX PAGE + LOCALITY PLAN
- DA01 DETAILED SITE SURVEY PLAN
- DA02 SITE PLAN
- DA03 EXISTING FLOOR + ROOF PLANS + PROPOSED DEMOLITION WORKS
- DA04 EXISTING ELEVATIONS
- DA05 EXISTING ELEVATIONS
- DA06 PROPOSED FLOOR PLANS
- DA07 PROPOSED ROOF PLAN
- DA08 PROPOSED ELEVATIONS
- DA09 PROPOSED ELEVATIONS
- DA10 PROPOSED BUILDING ENVELOPE DIAGRAMS
- DA11 PROPOSED BUILDING ENVELOPE DIAGRAMS

SITE LOCALITY AREA
APPROXIMATE ONLY

SITE AREA (OVERALL) = 535.63M2
EXISTING SITE COVERAGE (UNITS 1 + 2) = 175.40M2 / 32.75%
PROPOSED SITE COVERAGE (UNITS 1 + 2) = 178.69M2 / 33.36%



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PROJECT:
PARTIAL DEMOLITION, ALTERATIONS + ADDITIONS
MACFARLANE HOUSE
2/38A MACFARLANE STREET, SOUTH HOBBART TAS 7004

CLIENT:
ANITA MENDAY + PIXIE GERBER

DRAWING:
DA00
INDEX PAGE + LOCALITY PLAN

SCALE: DATE: REVISION:
- APR 2022 A

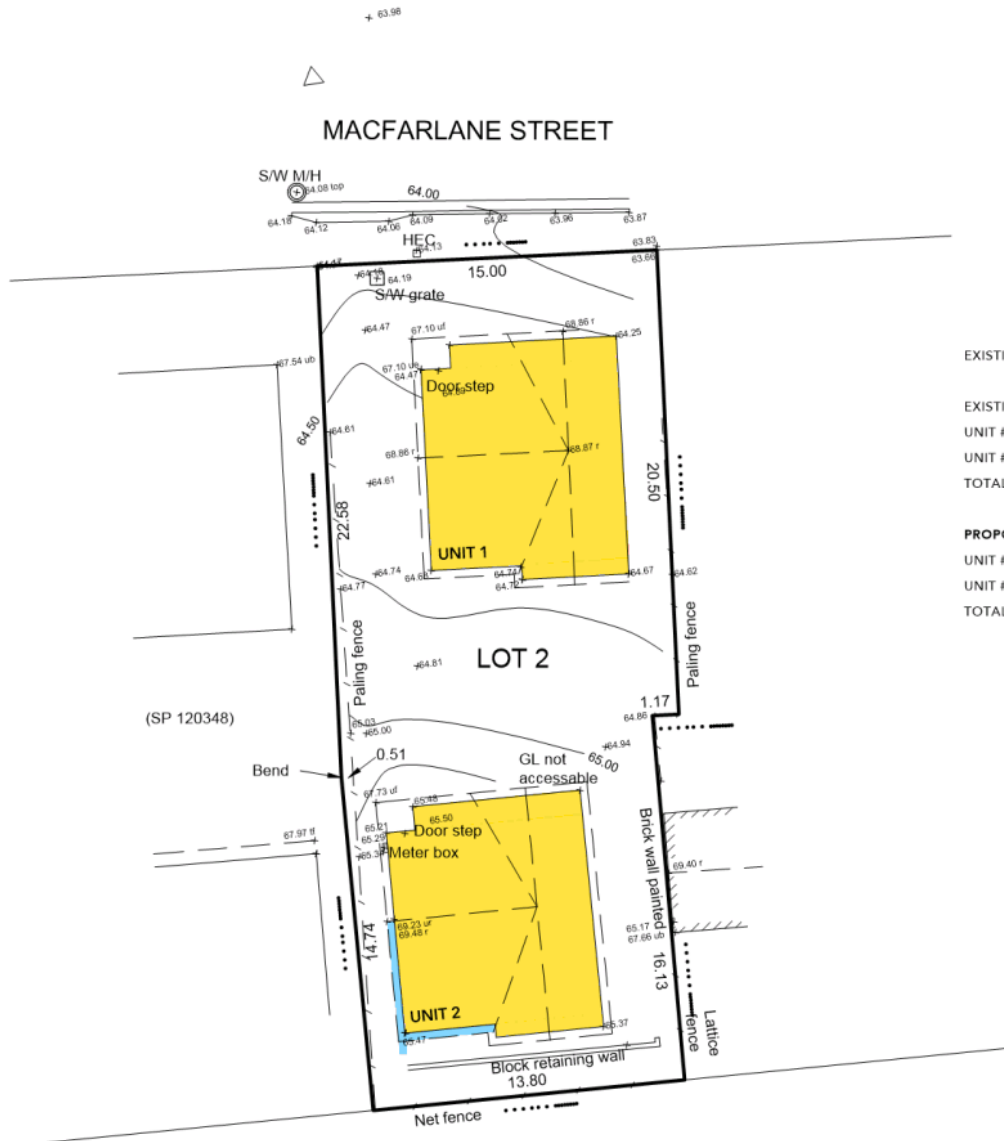
0 5M

REVISIONS:

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CONSTRUCTION PURPOSES

DRAWN: CHECKED:
AD MD

NOTES:
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FEATURES AND INTENDED WORKS.
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EXISTING SITE AREA: 535.63M2

EXISTING SITE COVERAGES:

UNIT #1: 87.50M2 (16.35%)

UNIT #2: 87.96M2 (16.42%)

TOTAL: 175.40M2 (32.75%)

PROPOSED ADDITION TO SITE COVERAGES

UNIT #1: 87.50M2 (16.35%) NO CHANGE

UNIT #2: 91.25M2 (17.05%) REFER DRAWING DA02

TOTAL: 178.69M2 (39.07%)



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DRAWING:
DA01
SITE DETAILED SURVEY PLAN

SCALE: DATE: REVISION:
1:200 APR 2022 A

0 10M

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NOTES:

1. DATUM FOR HEIGHTS IS APPROXIMATE AHD FROM LIST CONTOUR.
2. CONTOUR INTERVAL IS 0.25 METRE
3. BEARINGS AS PER SP 120348 - NOT ON MGA

THE INFORMATION SUPPLIED WITH THIS FILE
MAY BE USED PROVIDING THE AUTHOR IS
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C.L. ANDREWS & ASSOC.
LAND & ENGINEERING SURVEYORS
57 MT RUMNEY ROAD, MT RUMNEY 7170
PHONE: 03 6348 5007
EMAIL: clandrews57@gmail.com

DETAIL SURVEY - C.T. 130480-0
2/38 MACFARLANE STREET, SOUTH HOBART
FOR ADELLE DRURY

SCALE: 1: 200 (A3) DATE: December 2021 DRAWN: IDS/CLA DWG No. 21078



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CLIENT:
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DRAWING:
DA02
SITE PLAN

SCALE: DATE: REVISION:
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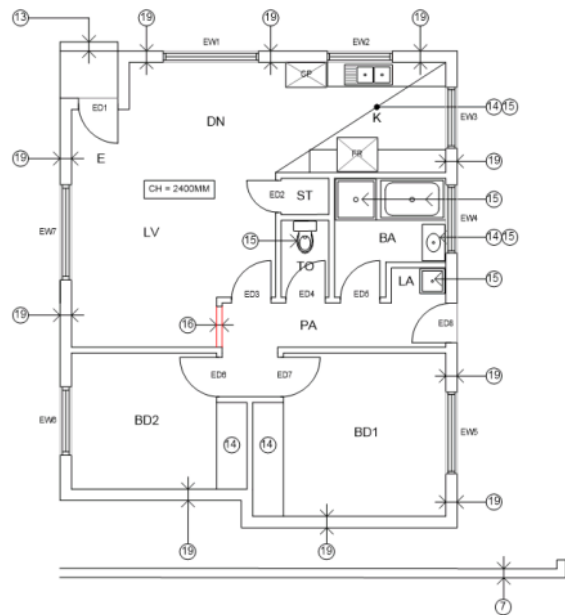
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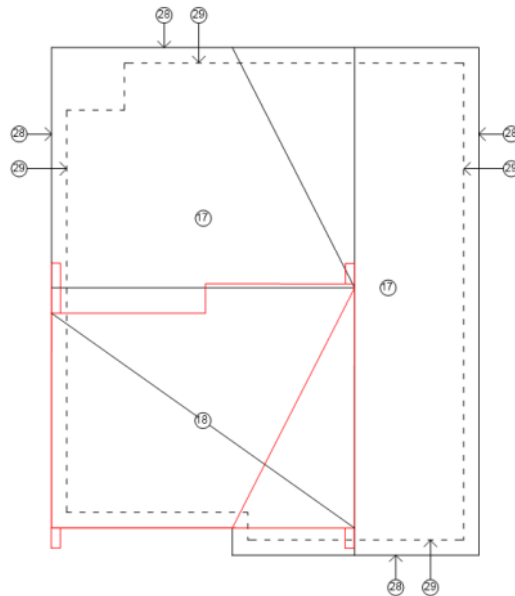
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EXISTING GROUND FLOOR PLAN + PROPOSED DEMOLITION WORKS
GFA = 88.30M2



EXISTING ROOF PLAN + PROPOSED DEMOLITION WORKS



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CLIENT:
ANITA MENDAY + PIXIE GERBER

DRAWING:
DA03
EXISTING GROUND FLOOR +
ROOF PLANS

SCALE: DATE: REVISION:
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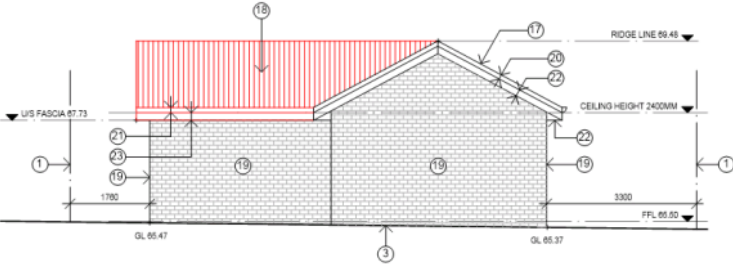
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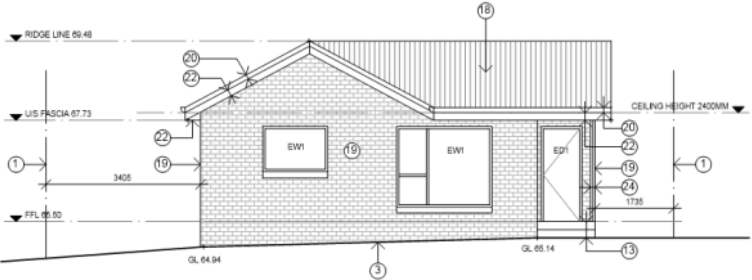
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E1 EXISTING SOUTH ELEVATION +
PROPOSED DEMOLITION WORKS
DA02 REAR OF HOUSE



E2 EXISTING NORTH ELEVATION +
PROPOSED DEMOLITION WORKS
DA02 FRONT OF HOUSE



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CLIENT:
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DRAWING:
DA04
EXISTING ELEVATIONS

SCALE: DATE: REVISION:
1:100 APR 2022 A

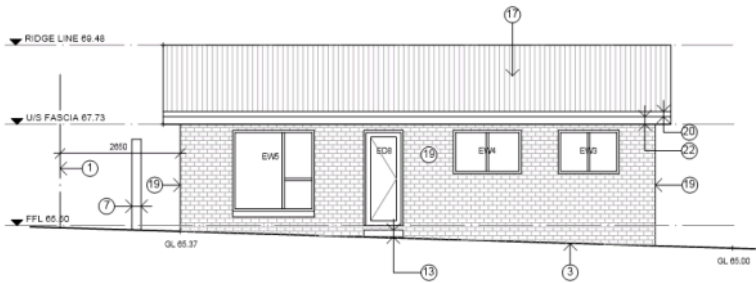
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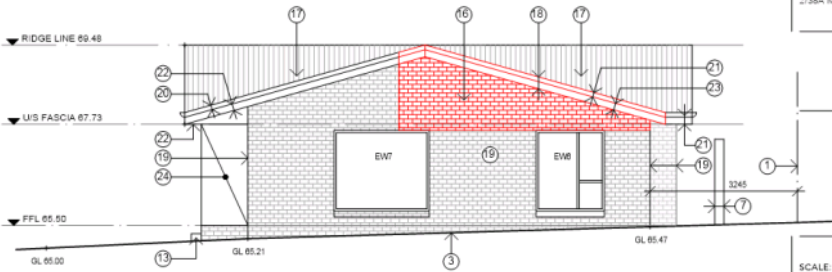
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E3
DA02
EXISTING WEST ELEVATION +
PROPOSED DEMOLITION WORKS
SIDE OF HOUSE



E4
DA02
EXISTING EAST ELEVATION +
PROPOSED DEMOLITION WORKS
SIDE OF HOUSE



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CLIENT:
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DRAWING:
DA05
EXISTING ELEVATIONS

SCALE: 1:100
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0 5M

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PROPOSED GROUND FLOOR PLAN
GFA = 88.30M²
*NOTE: NO ADDITION TO EXISTING FLOOR AREA

PROPOSED UPPER FLOOR PLAN
GFA = 33.80M2



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PROJECT:
PARTIAL DEMOLITION, ALTERATIONS + ADDITIONS

MACFARLANE HOUSE

2/384 MACFARLANE STREET, SOUTH HOBART TAS 7004

CLIENT:
ANITA MENDAY + PIXIE GERBER

DRAWING:

DA06
PROPOSED FLOOR PLANS

SCALE:	DATE:	REVISION:
1:100	APR 2022	A



A diagram of a rectangular pulse function $f(t)$ on a time axis. The axis is labeled from 0 to $5M$. The function is defined as $f(t) = 1$ for $0 \leq t \leq 2M$ and $f(t) = 0$ for $t < 0$ and $t > 2M$. The pulse is represented by a horizontal line at height 1 from $t = 0$ to $t = 2M$, and a horizontal line at height 0 elsewhere.

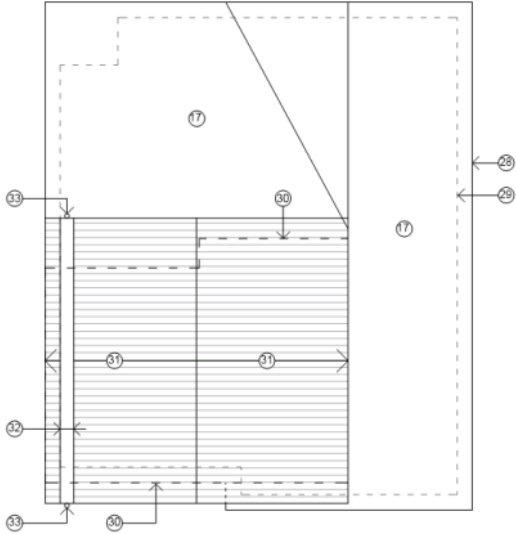
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PROPOSED ROOF PLAN



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PROJECT:
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CLIENT:
ANITA MENDAY + PIXIE GERBER

DRAWING:
DA07
PROPOSED ROOF PLAN

SCALE: 1:100 DATE: APR 2022 REVISION: A

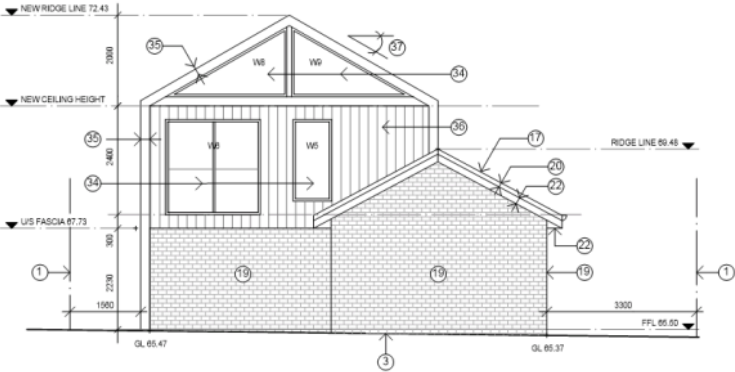


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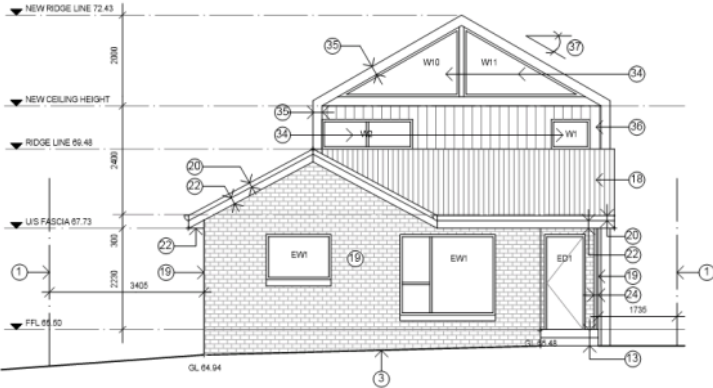
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FEATURES AND INTENDED WORKS.



E1 PROPOSED SOUTH ELEVATION
DA02 REAR OF HOUSE



E2 PROPOSED NORTH ELEVATION
DA02 FRONT OF HOUSE



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CLIENT:
ANITA MENDAY + PIXIE GERBER

DRAWING:
DA08
PROPOSED ELEVATIONS

SCALE: DATE: REVISION:
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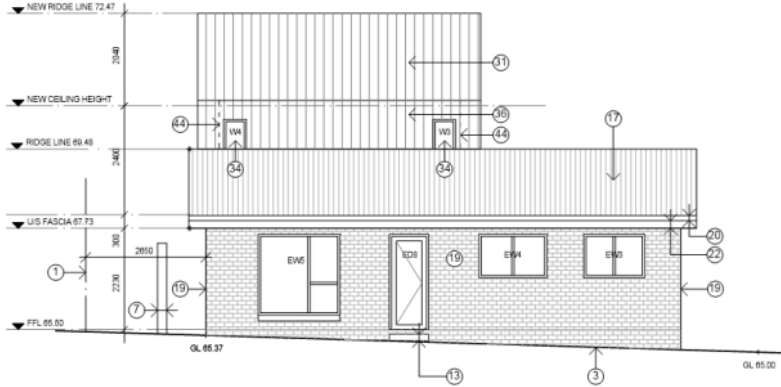
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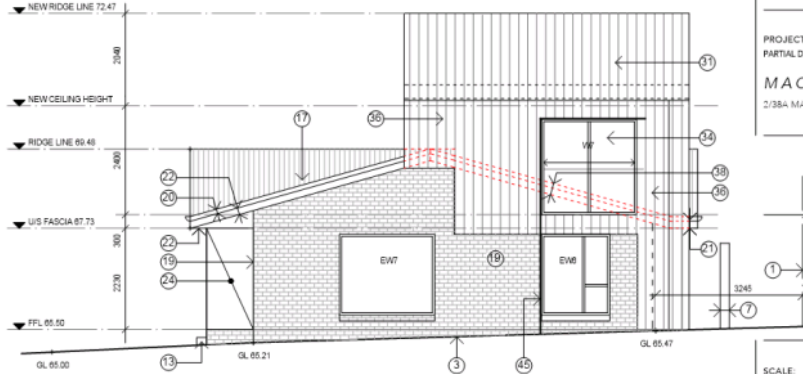
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FEATURES AND INTENDED WORKS.



E3 PROPOSED WEST ELEVATION
DA02 SIDE OF HOUSE



E4 PROPOSED EAST ELEVATION
DA02 SIDE OF HOUSE



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CLIENT:
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DRAWING:
DA09
PROPOSED ELEVATIONS

SCALE: 1:100
DATE: APR 2022
REVISION: A

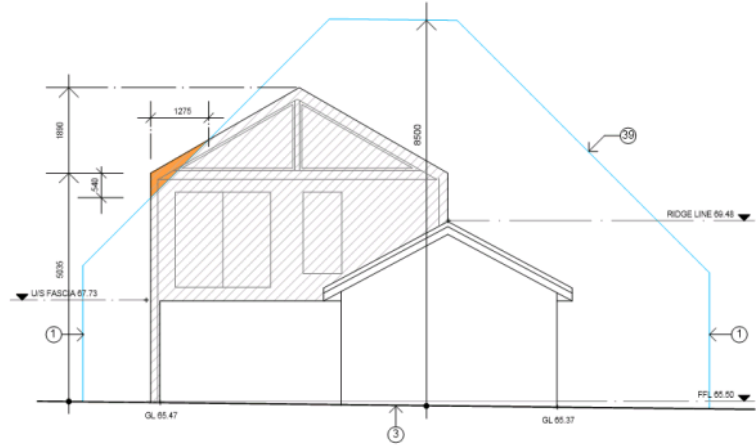
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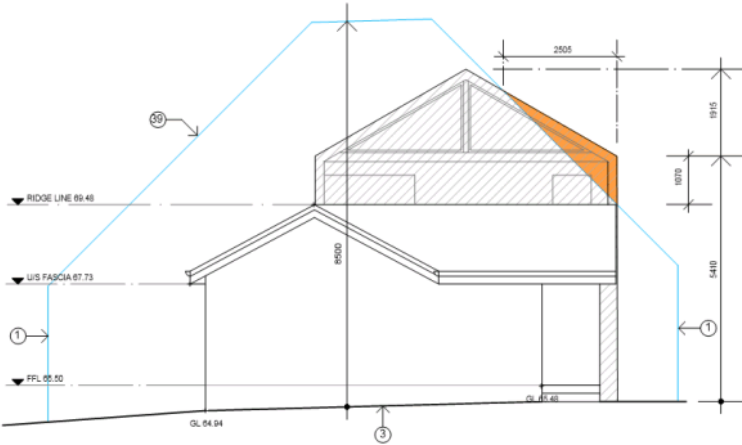
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FEATURES AND INTENDED WORKS.



BE1 BUILDING ENVELOPE DIAGRAM 1
DA02 SOUTH - REAR OF HOUSE



BE2 BUILDING ENVELOPE DIAGRAM 2
DA02 NORTH - FRONT OF HOUSE

BUILDING ENVELOPE DIAGRAM

PROPOSED ADDITION'S
ENCROACHMENT OUTSIDE OF
BUILDING ENVELOPE DIAGRAM



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CLIENT:
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DRAWING:
DA10
PROPOSED BUILDING ENVELOPE
DIAGRAMS

SCALE: DATE: REVISION:
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0 5M

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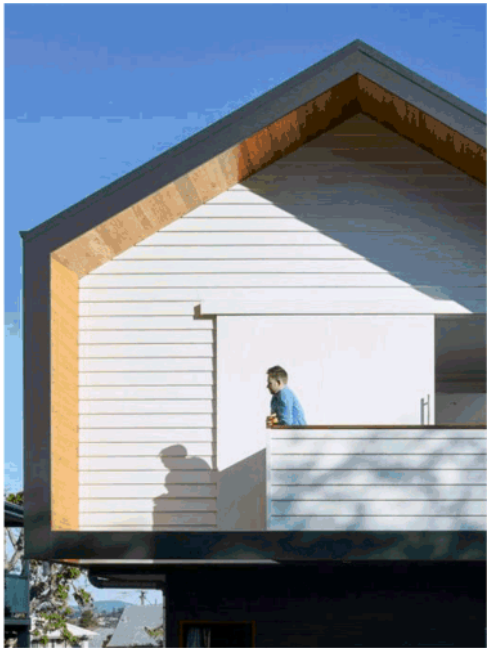
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NORTHCOTE BUNGALOW / MLS BUILT
UPPER STOREY MODERN 'BOX' EXTENSION



EASTWELL HOUSE / TECHNE ARCHITECTURE
REAR DOUBLE STOREY MODERN EXTENSION



BOX HOUSE / PAUL TILSE ARCHITECTS
UPPER STOREY MODERN 'BOX' EXTENSION



WORKERS COTTAGE / MARK SZCZERBICKI DESIGN STUDIO
UPPER STOREY EXTENSION FORMAT



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CLIENT:
ANITA MENDAY + PIXIE GERBER

DRAWING:
DA12
PRECEDENTS + CONCEPT
DESIGN IMAGES

SCALE: DATE: REVISION:
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0 5M

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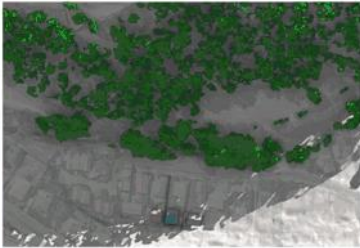


PLAN VIEW - EXISTING



PLAN VIEW - PROPOSED

- NOTES
- LATITUDE: -42° 54'
 - LONGITUDE: 147° 18'
 - Surrounding Terrain and vegetation has been included.
 - Existing conditions derived from LASER SCAN DATA collected by Another Perspective Pty Ltd.

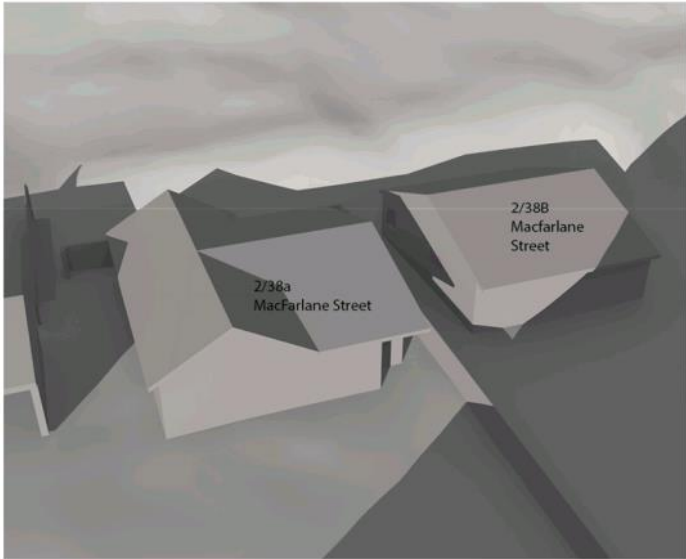


OVERALL
With Terrain & Vegetation
(approximate only)

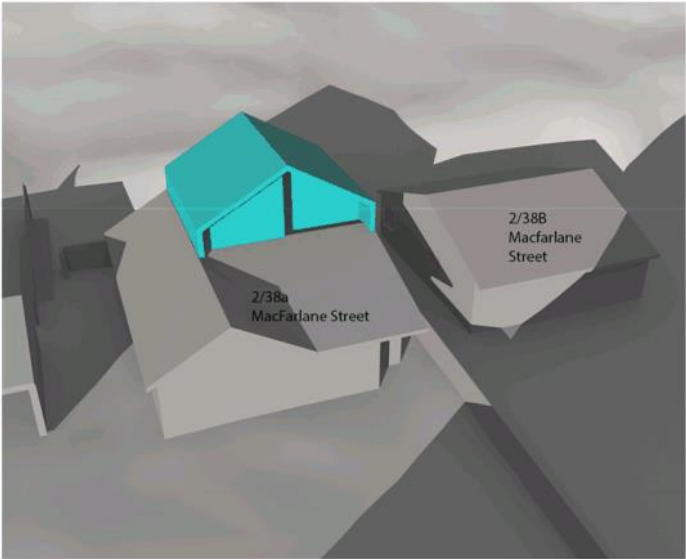
NOTE: Only unit 2/388 MacFarlane Street has windows facing the proposed development site (highlighted in magenta on the perspective views)



Shadow Diagrams Prepared By:
Another Perspective Pty Ltd
Level 1, Biggins Building
67 Letitia Street
North Hobart TAS 7000



PERSPECTIVE VIEW - EXISTING



PERSPECTIVE VIEW - PROPOSED

**another perspective**
|drafting&design|

SHADOW DIAGRAMS
PROPOSED ADDITIONS
2/38a MacFarlane Street
SOUTH HOBART

21/06/2022 9:00:00AM

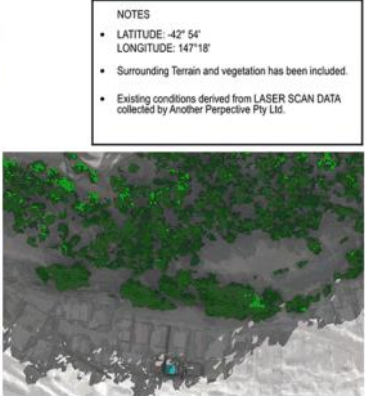
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Date	V1 09/07/2022	Sheet
Scale	Not to scale	



PLAN VIEW - EXISTING



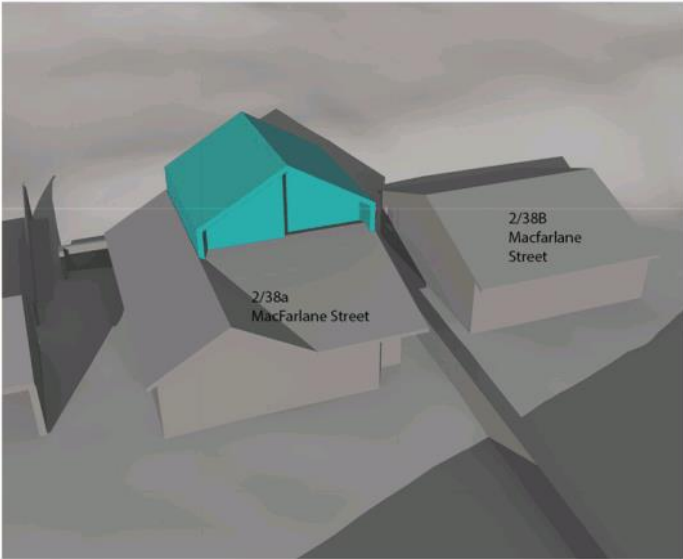
PLAN VIEW - PROPOSED



OVERALL
With Terrain & Vegetation
(approximate only)



PERSPECTIVE VIEW - EXISTING



PERSPECTIVE VIEW - PROPOSED

NOTE: Only unit 2/388 MacFarlane Street has windows facing the proposed development site (highlighted in magenta on the perspective views)



Shadow Diagrams Prepared By:
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North Hobart TAS 7000



SHADOW DIAGRAMS
PROPOSED ADDITIONS
2/38a MacFarlane Street
SOUTH HOBART

21/06/2022 10:00:00AM

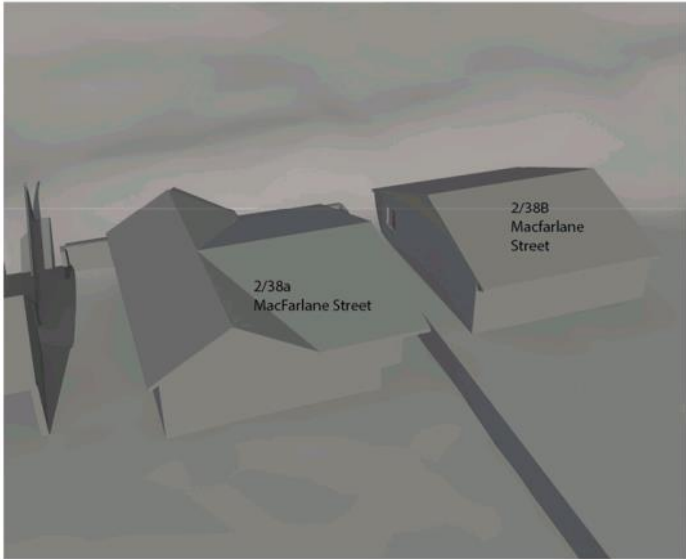
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Date	V1 09/07/2022	Sheet
Scale	Not to scale	



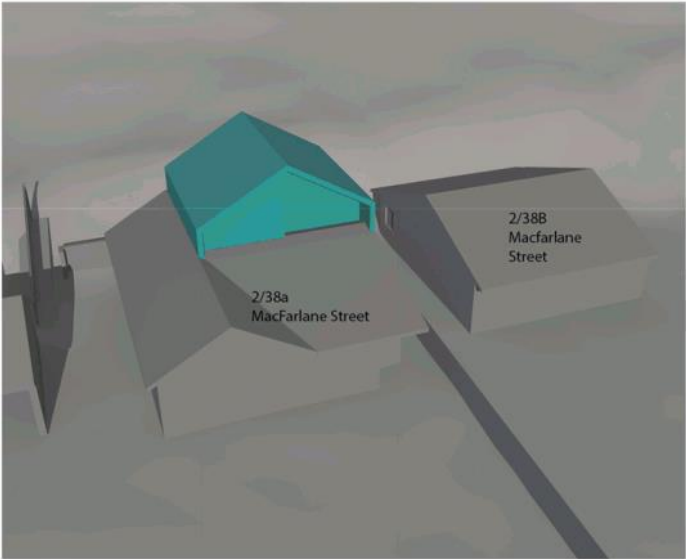
PLAN VIEW - EXISTING



PLAN VIEW - PROPOSED

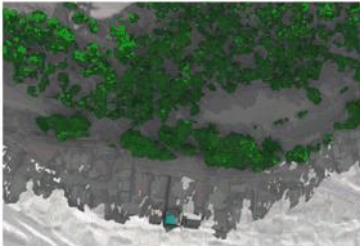


PERSPECTIVE VIEW - EXISTING



PERSPECTIVE VIEW - PROPOSED

- NOTES
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 - LONGITUDE: 147° 18'
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OVERALL
With Terrain & Vegetation
(approximate only)

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Shadow Diagrams Prepared By:
Another Perspective Pty Ltd
Level 1, Biggins Building
67 Letitia Street
North Hobart TAS 7000



SHADOW DIAGRAMS
PROPOSED ADDITIONS
2/38a MacFarlane Street
SOUTH HOBART

21/06/2022 11:00:00AM

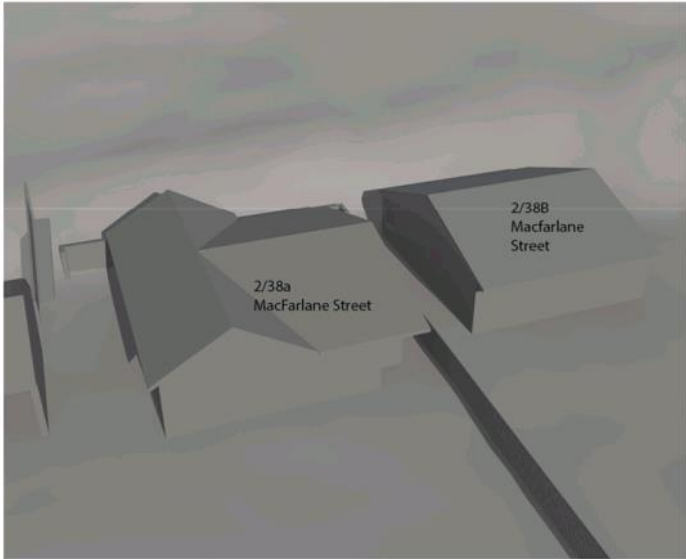
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Date	V1 09/07/2022	Sheet
Scale	Not to scale	



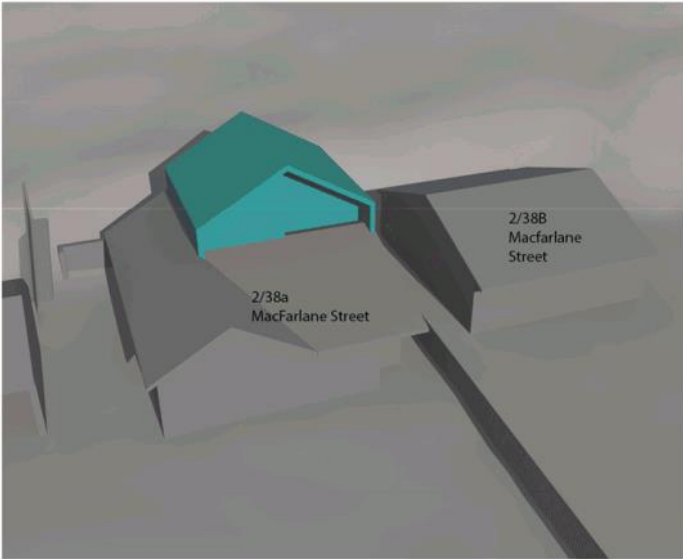
PLAN VIEW - EXISTING



PLAN VIEW - PROPOSED

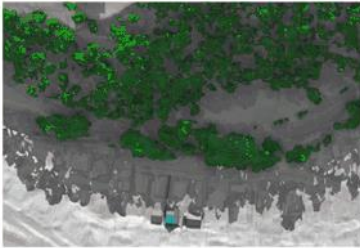


PERSPECTIVE VIEW - EXISTING



PERSPECTIVE VIEW - PROPOSED

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OVERALL
With Terrain & Vegetation
(approximate only)

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Shadow Diagrams Prepared By:
Another Perspective Pty Ltd
Level 1, Biggins Building
67 Letitia Street
North Hobart TAS 7000



SHADOW DIAGRAMS
PROPOSED ADDITIONS
2/38a MacFarlane Street
SOUTH HOBART

21/06/2022 12:00:00PM

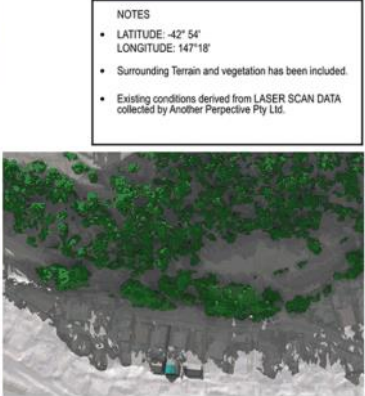
Drawn	AS	AP2022-2112
Date	V1 09/07/2022	Sheet
Scale	Not to scale	



PLAN VIEW - EXISTING



PLAN VIEW - PROPOSED

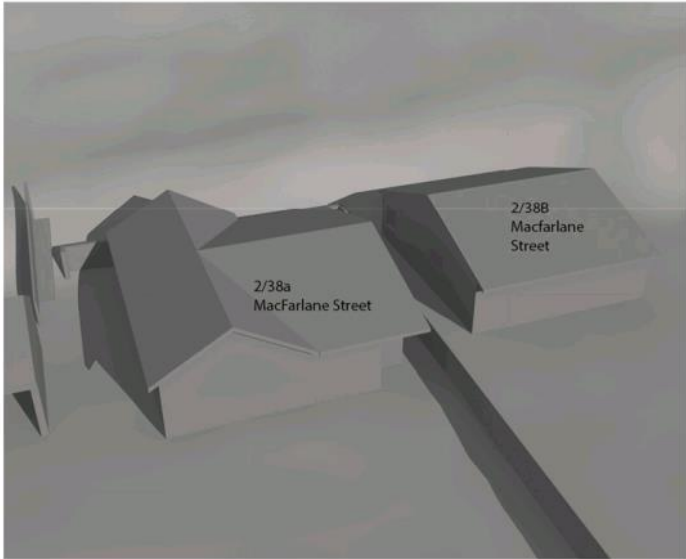


OVERALL
With Terrain & Vegetation
(approximate only)

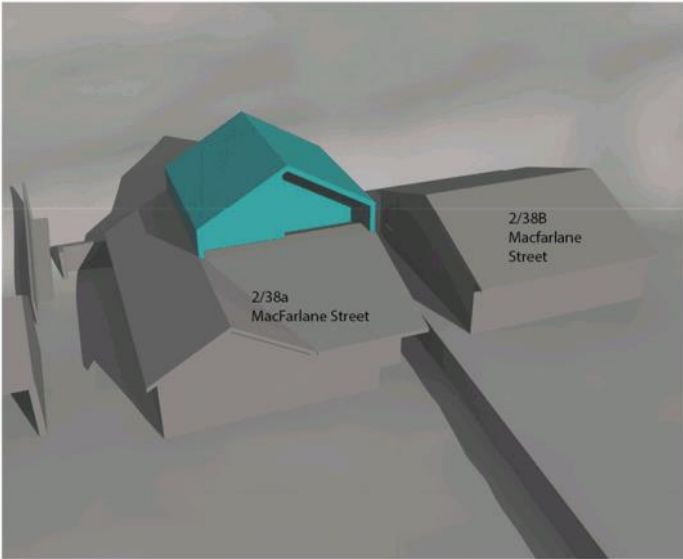
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Shadow Diagrams Prepared By:
Another Perspective Pty Ltd
Level 1, Biggins Building
67 Letitia Street
North Hobart TAS 7000



PERSPECTIVE VIEW - EXISTING



PERSPECTIVE VIEW - PROPOSED



SHADOW DIAGRAMS
PROPOSED ADDITIONS
2/38a MacFarlane Street
SOUTH HOBART

21/06/2022 1:00:00PM

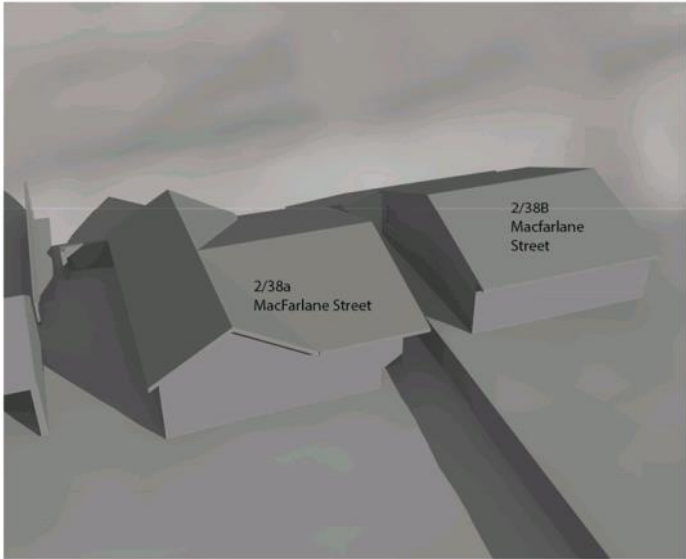
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Date	v1 09/07/2022	Sheet
Scale	Not to scale	



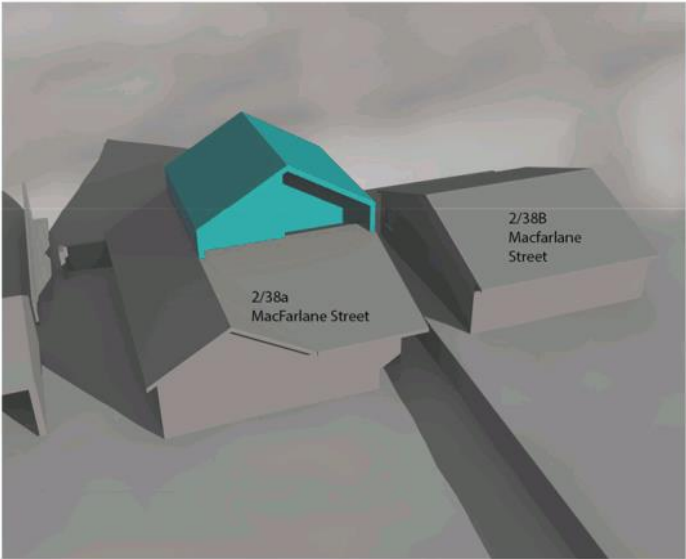
PLAN VIEW - EXISTING



PLAN VIEW - PROPOSED

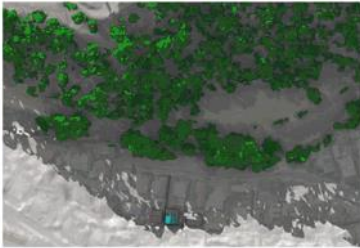


PERSPECTIVE VIEW - EXISTING



PERSPECTIVE VIEW - PROPOSED

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OVERALL
With Terrain & Vegetation
(approximate only)

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North Hobart TAS 7000



SHADOW DIAGRAMS
PROPOSED ADDITIONS
2/38a MacFarlane Street
SOUTH HOBART

21/06/2022 2:00:00PM

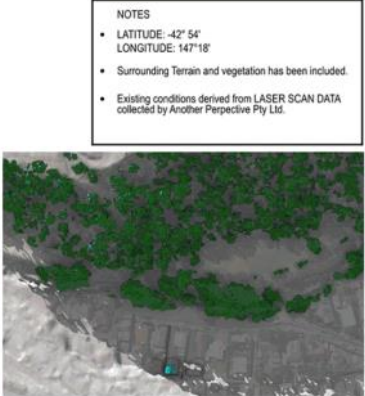
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Date	v1 09/07/2022	Sheet
Scale	Not to scale	



PLAN VIEW - EXISTING



PLAN VIEW - PROPOSED

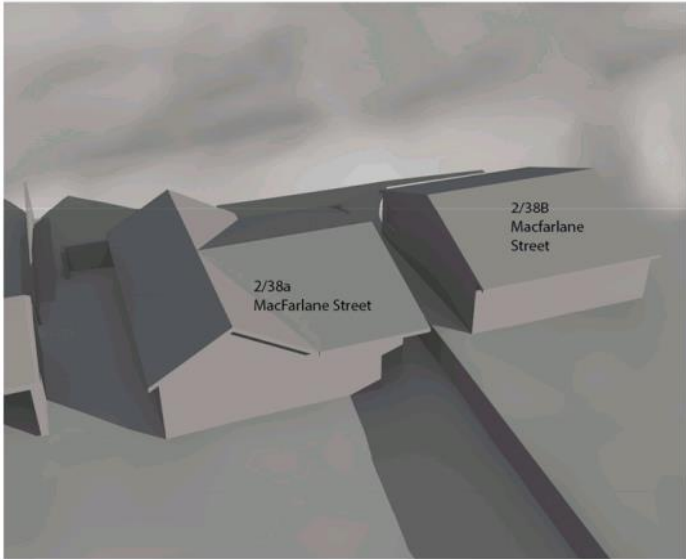


OVERALL
With Terrain & Vegetation
(approximate only)

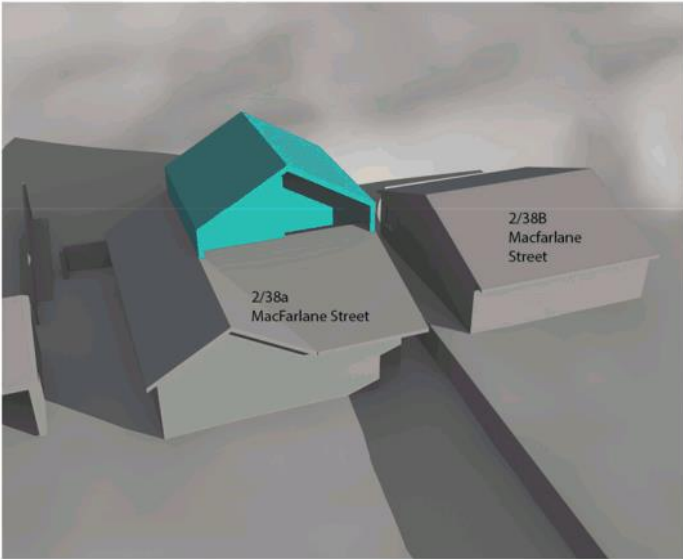
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Another Perspective Pty Ltd
Level 1, Biggins Building
67 Letitia Street
North Hobart TAS 7000



PERSPECTIVE VIEW - EXISTING



PERSPECTIVE VIEW - PROPOSED



SHADOW DIAGRAMS
PROPOSED ADDITIONS
2/38a MacFarlane Street
SOUTH HOBART

21/06/2022 3:00:00PM

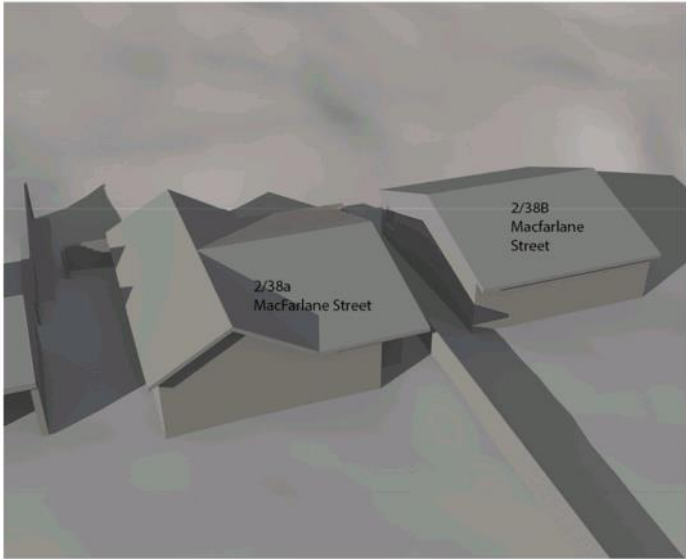
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Scale	Not to scale	



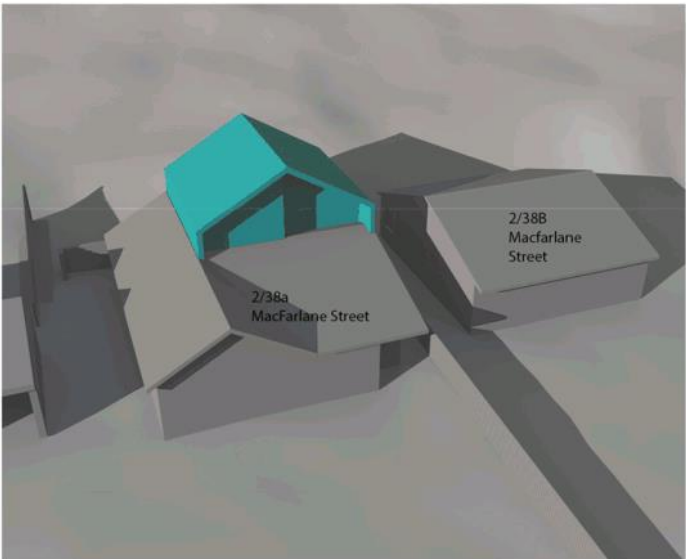
PLAN VIEW - EXISTING



PLAN VIEW - PROPOSED



PERSPECTIVE VIEW - EXISTING



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67 Letitia Street
North Hobart TAS 7000



SHADOW DIAGRAMS
PROPOSED ADDITIONS
2/38a MacFarlane Street
SOUTH HOBART

21/03/2022 9:00:00AM

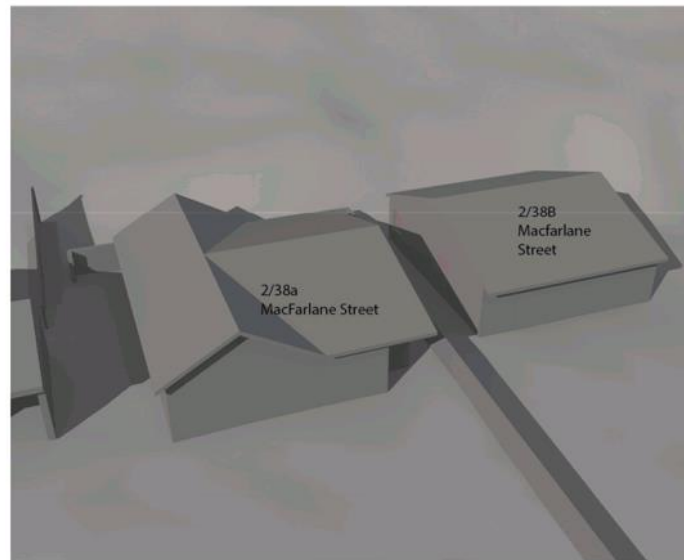
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Date	V1 09/07/2022	Sheet
Scale	Not to scale	



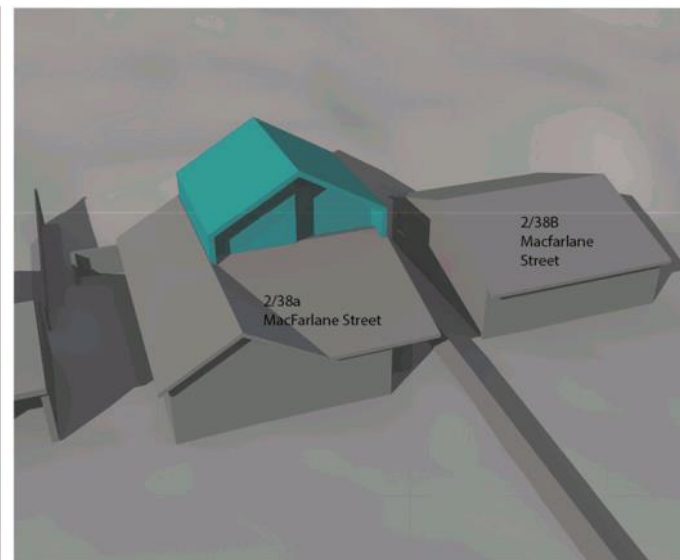
PLAN VIEW - EXISTING



PLAN VIEW - PROPOSED



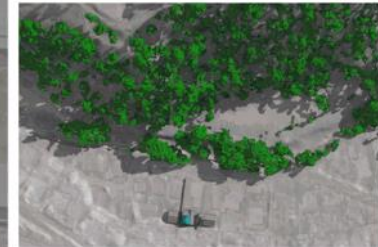
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PERSPECTIVE VIEW - PROPOSED

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PROPOSED ADDITIONS
2/38a MacFarlane Street
SOUTH HOBART

21/03/2022 10:00:00AM

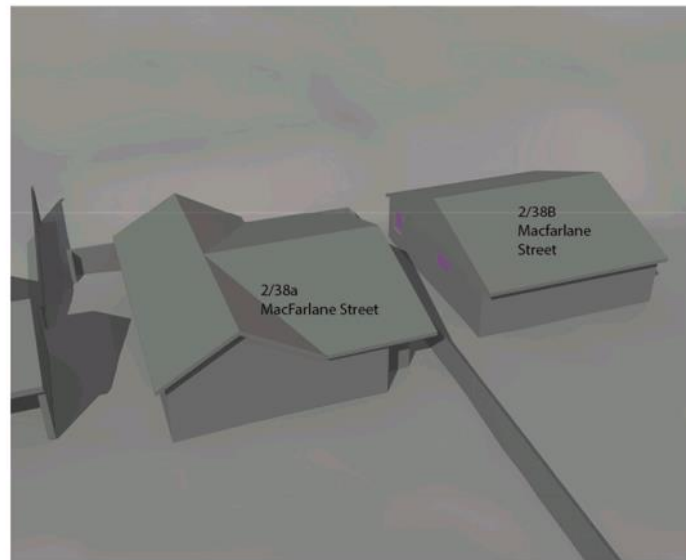
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Date	V1 09/07/2022	Sheet
Scale	Not to scale	



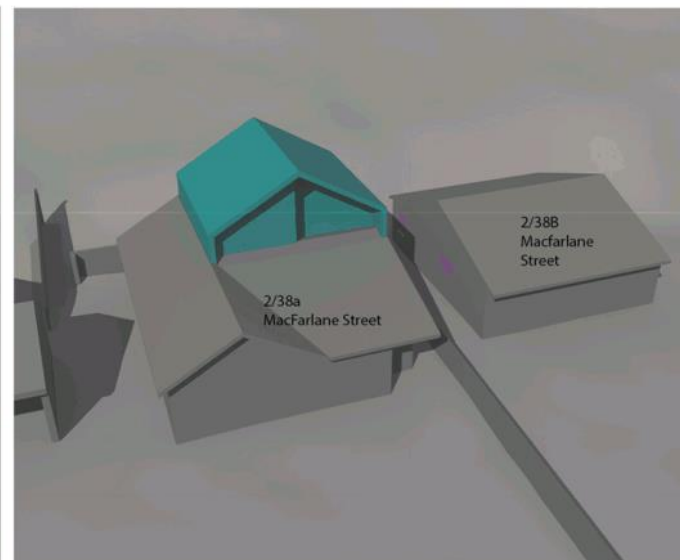
PLAN VIEW - EXISTING



PLAN VIEW - PROPOSED



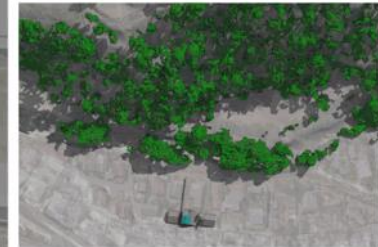
PERSPECTIVE VIEW - EXISTING



PERSPECTIVE VIEW - PROPOSED

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SHADOW DIAGRAMS
PROPOSED ADDITIONS
2/38a MacFarlane Street
SOUTH HOBART

21/03/2022 11:00:00AM

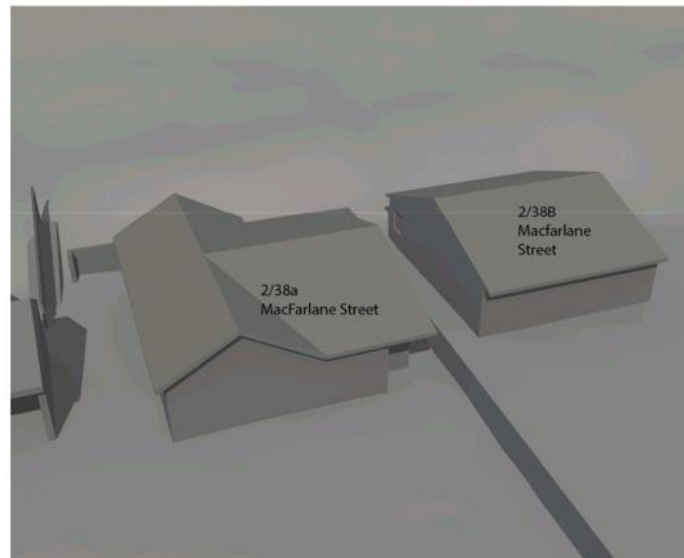
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Date	V1 09/07/2022	Sheet
Scale	Not to scale	



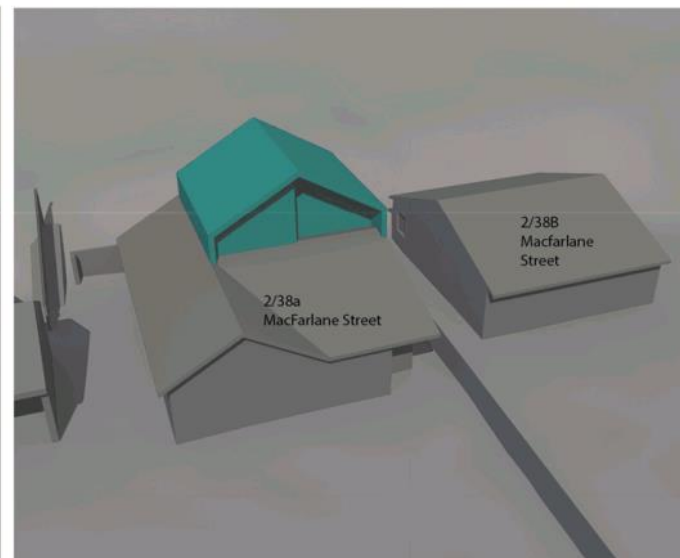
PLAN VIEW - EXISTING



PLAN VIEW - PROPOSED



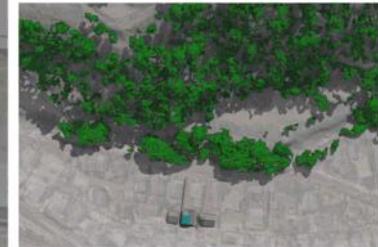
PERSPECTIVE VIEW - EXISTING



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SHADOW DIAGRAMS
PROPOSED ADDITIONS
2/38a MacFarlane Street
SOUTH HOBART

21/03/2022 12:00:00PM

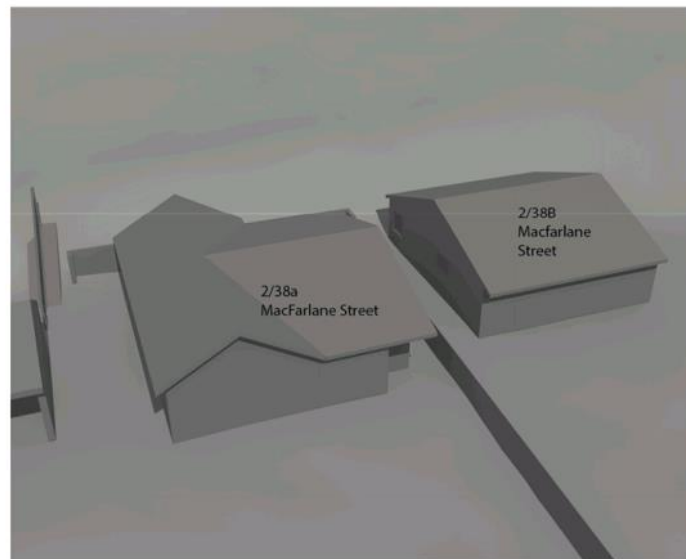
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Date	V1 09/07/2022	Sheet
Scale	Not to scale	



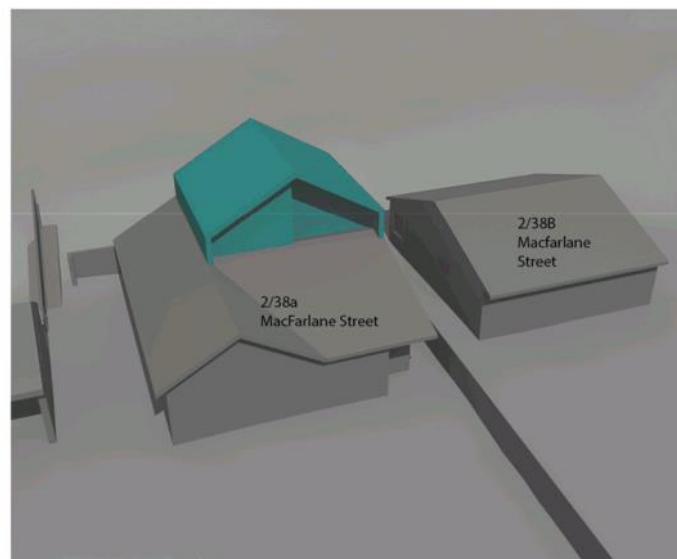
PLAN VIEW - EXISTING



PLAN VIEW - PROPOSED



PERSPECTIVE VIEW - EXISTING



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PROPOSED ADDITIONS
2/38a MacFarlane Street
SOUTH HOBART

21/03/2022 1:00:00PM

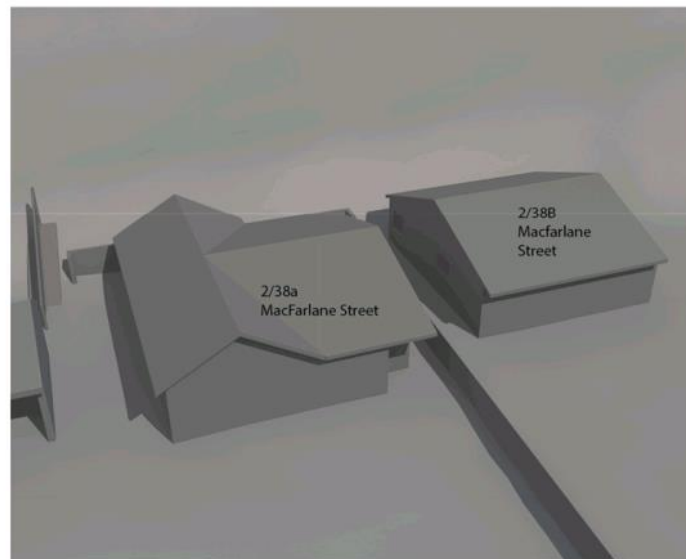
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Date	V1 09/07/2022	Sheet
Scale	Not to scale	



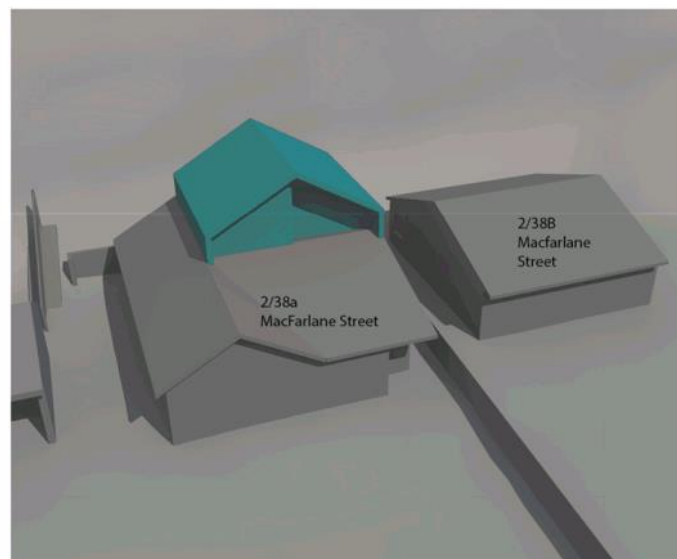
PLAN VIEW - EXISTING



PLAN VIEW - PROPOSED



PERSPECTIVE VIEW - EXISTING



PERSPECTIVE VIEW - PROPOSED

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SHADOW DIAGRAMS
PROPOSED ADDITIONS
2/38a MacFarlane Street
SOUTH HOBART

21/03/2022 2:00:00PM

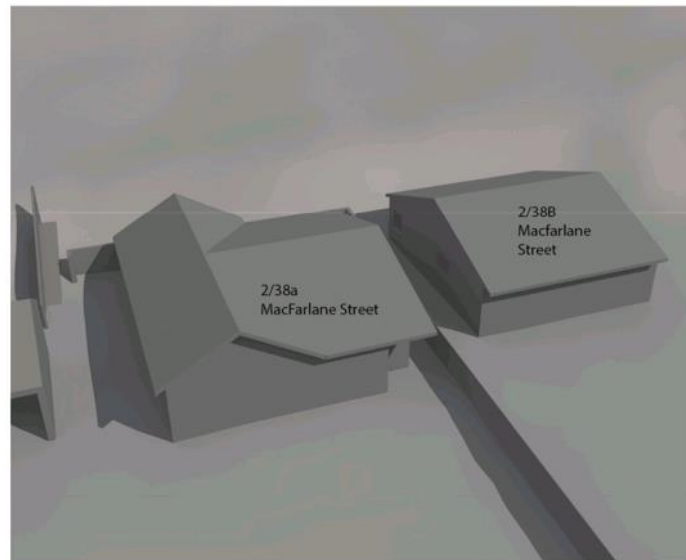
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Date	V1 09/07/2022	Sheet
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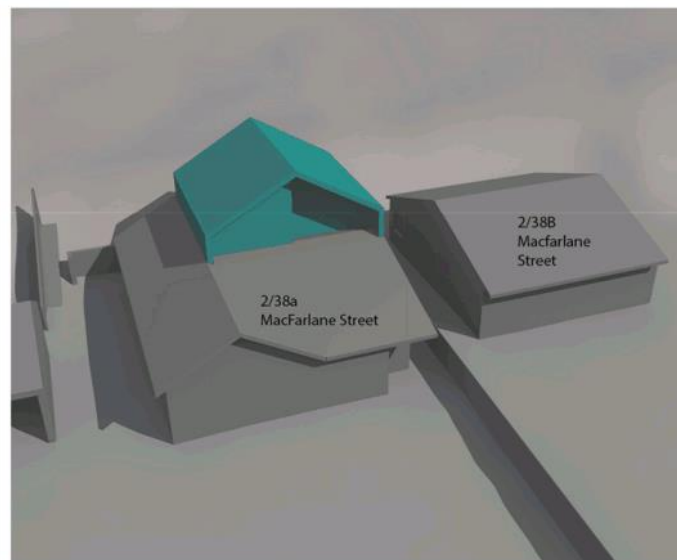
PLAN VIEW - EXISTING



PLAN VIEW - PROPOSED



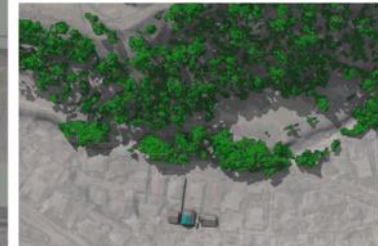
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SHADOW DIAGRAMS
PROPOSED ADDITIONS
2/38a MacFarlane Street
SOUTH HOBART

21/03/2022 3:00:00PM

Drawn	AS	AP2022-2112
Date	V1 09/07/2022	Sheet
Scale	Not to scale	

Please see below the response to satisfy item as part of request for information from Hobart City Council on PLN-22-271:

Heritage Code HER Fi:

Item 1 - The proposed colour scheme of the James Hardie Axon Vertical Roof cladding and gable roof is to be Monument Grey. A dark charcoal colour which is in line with the heritage colour scheme and acts as a contrast and point of difference to the existing house.

Signed:
Adelle Drury

SCHEDULE CODE DOCUMENT
TO BE READ IN CONJUNCTION WITH DRAWINGS DA00-DA12 INCLUSIVE

2/38A MACFARLANE STREET, SOUTH HOBART
PROPOSED ALTERATIONS + ADDITIONS
Prepared by: studio**ACD**
14/04/2022

DRAWING SCHEDULE

DA00	INDEX PAGE AND LOCALITY PLAN
DA01	DETAILED SITE SURVEY PLAN
DA02	SITE PLAN
DA03	EXISTING FLOOR AND ROOF PLANS AND PROPOSED DEMOLITION WORKS
DA04	EXISTING ELEVATIONS AND PROPOSED DEMOLITION WORKS
DA05	EXISTING ELEVATIONS AND PROPOSED DEMOLITION WORKS
DA06	PROPOSED FLOOR PLANS
DA07	PROPOSED ROOF PLAN
DA08	PROPOSED ELEVATIONS
DA09	PROPOSED ELEVATIONS
DA10	PROPOSED BUILDING ENVELOPE DIAGRAMS
DA11	PROPOSED BUILDING ENVELOPE DIAGRAMS
DA12	PRECEDENTS + CONCEPT DESIGN IMAGES

SCHEDULE TO CODES ON DRAWINGS DA00 - DA11

1. SITE BOUNDARY LINE
2. EXISTING SITE BOUNDARY PAILING FENCE
3. NATURAL GROUND LINE
4. SHARED DRIVEWAY + PARKING SPACE
5. PRIVATE COURTYARD / OUTDOOR SPACE
6. EXISTING EXTERNAL BRICK WALL OF NEIGHBOURING HOUSE
7. EXISTING BLOCK RETAINING WALL
8. EXISTING SITE PICKET FENCE / GATE
9. FRONT NEIGHBOURING UNIT
10. SURROUNDING NEIGHBOURING PROPERTIES
11. -
12. MAIN HOUSE
13. EXISTING STEPS
14. EXISTING JOINERY TO REMAIN
15. EXISTING FIXTURES TO REMAIN
16. EXISTING WALLS TO BE REMOVED
17. EXISTING GABLE ROOF
18. EXISTING ROOF SECTION TO BE REMOVED FOR ADDITION
19. EXISTING DOUBLE BRICK WALLS TO REMAIN
20. EXISTING GUTTER + FASCIA
21. EXISTING GUTTER + FASCIA TO BE REMOVED
22. EXISTING ROOF EAVES
23. EXISTING ROOF EAVES TO BE REMOVED
24. EXISTING PATIO WALL TO REMAIN
25. PROPOSED ADDITION
26. NEW WALLS
27. NEW ROOF LINE EDGE
28. LINE OF EXISTING ROOF EDGE
29. LINE OF EXISTING WALL BELOW
30. LINE OF PROPOSED ADDITION WALL BELOW
31. PROPOSED GABLE ROOF, CLAD TO MATCH PROPOSED WALL CLADDING (REFER CODE 36)
32. NEW ROOF BUTTERFLY GUTTER
33. NEW DOWNPIPES
34. NEW FENESTRATION
35. NEW COLORBOND FASCIA
36. PROPOSED EXTERNAL CLADDING, JAMIES HARDIE AXON VERTICAL GROOVE TO SELECT PAINT COLOUR + FINISH
37. ROOF PITCH TO MATCH EXISTING
38. LINE OF EXISTING ROOF TO BE REMOVED
39. BUILDING ENVELOPE OUTLINE
40. LINE OF NEW ROOF LINE ABOVE
41. OUTLINE OF PROPOSED UPPER FLOOR ADDITION ABOVE
42. NEW BUTTRESS
43. NEW NIB WALL
44. LINE OF WALL BEHIND
45. NEW STEEL SHROUD AROUND PROPOSED GLAZING

**RESULT OF SEARCH**

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



SEARCH OF TORRENS TITLE

VOLUME 130480	FOLIO 2
EDITION 9	DATE OF ISSUE 05-May-2020

SEARCH DATE : 02-May-2022

SEARCH TIME : 11.31 AM

DESCRIPTION OF LAND

City of HOBART

Lot 2 on Strata Plan 130480 and a general unit entitlement
operating for all purposes of the Strata Scheme being a 50
undivided 1/100 interest

Derived from Strata Plan 130480

Derivation : Part of 25A-3R-34Ps. Gtd. to C. Swanston & Anor.
and Part of 299 Acres Gtd. to R.L. MurraySCHEDULE 1M811488 TRANSFER to ANITA MARGARET MENDAY Registered
05-May-2020 at 12.01 PMSCHEDULE 2Reservations and conditions in the Crown Grant if any
The registered proprietor holds the lot and unit entitlement
subject to any interest noted on common property
Folio of the Register volume 130480 folio 0

SP 120348 EASEMENTS in Schedule of Easements

SP 120348 FENCING PROVISION in Schedule of Easements

A13370 FENCING CONDITION in Transfer

E219487 MORTGAGE to AFSH Nominees Pty Ltd Registered
05-May-2020 at 12.02 PMUNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations



FOLIO PLAN

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



CITY/TOWN HOBART SUBURB/LOCALITY SOUTH HOBART FOLIO REFERENCE 120348/2 SITE COMPRISES THE WHOLE OF LOT 2 ON PLAN No. SP 120348		STRATA PLAN SHEET 1 OF 3 SHEETS		REGISTERED NUMBER 130480
NAME OF STRATA SCHEME 38a MACFARLANE STREET, SOUTH HOBART		STRATA TITLES ACT 1998 REGISTERED 16 JUL 1998 <i>[Signature]</i>		
MAPSHEET MUNICIPAL CODE No 114/5225	LAST UPI No —	SCALE 1:200	LENGTHS IN METRES	

SITE PLAN

MACFARLANE STREET

2
536m²

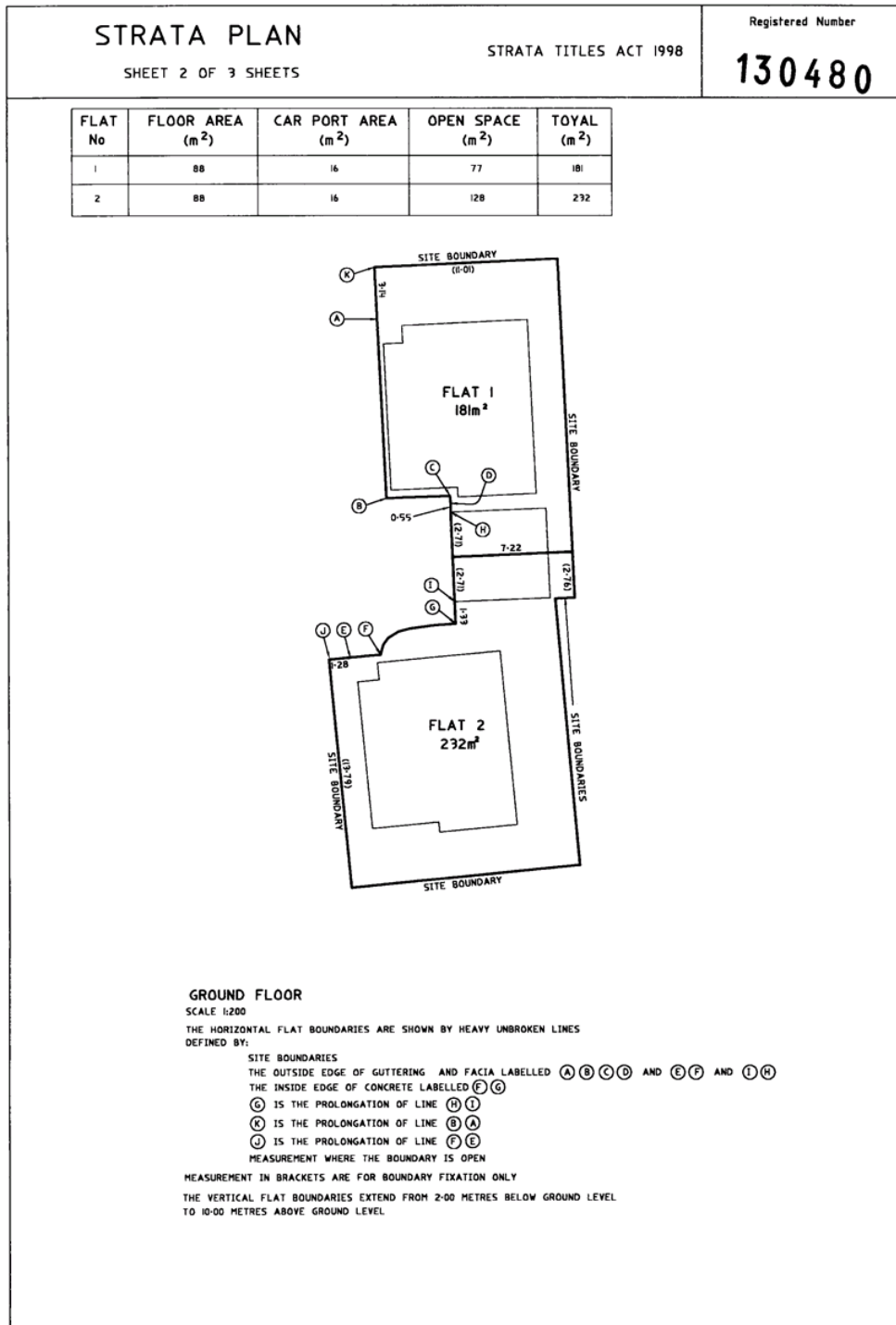
(D 71784) (SP 120348) (D 71784) (279/34 D)

NOTES: (i) ALL BUILDINGS ON THE SITE TO BE SHOWN ON SHEET 1 (ii) BUILDING TO SITE BOUNDARY OFFSETS OF LESS THAN 2.00 METRES TO BE SHOWN ON SHEET 1 (iii) LOT FOLIOS ARE HELD SUBJECT TO COMMON PROPETRY FOLIO INTERESTS (iv) THE SURVEYORS CERTIFICATE MUST CERTIFY THAT ANY BUILDING ENCROACHMENT BEYOND THE SITE BDRY IS AUTHORISED ACCORDING TO LAW	STAGED/COMMUNITY DEVELOPMENT SCHEME No (IF APPLICABLE) LODGED BY DOCKING & ASSOCIATES
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**FOLIO PLAN**

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980





FOLIO PLAN

RECORDED OF TITLES

Issued Pursuant to the Land Titles Act 1980

[illegible]

7/18/22, 10:59 AM

Icon Software Administration

 PLN-22-271 - 2 / 38 A MACFARLANE STREET

Application Information

▼ Application Details PLN-22-271 Partial Demolition, Alterations, and Extension 

Submitted on: 04/05/2022
 Accepted as Valid on: 04/05/2022
 Target Time Frame: 42 Days.
 Elapsed Time: 75 Days (*Stopped: 66 Days*) = 9 Days Expiry date: 20/08/2022
 Officer: Senior Statutory Planner

Have you obtained pre application advice?

☒ No

If YES please provide the pre application advice number eg PAE-17-xx

Are you applying for permitted visitor accommodation as defined by the State Government Visitor Accommodation information button for definition. *

☒ No

Is the application for SIGNAGE ONLY? If yes, please enter \$0 in the cost of development, and you must enter the Other Details below. *

☒ No

If this application is related to an enforcement action please enter Enforcement Number

Details

What is the current approved use of the land / building(s)? *

Residential

Please provide a full description of the proposed use or development (i.e. demolition and new dwelling, swimming and garage) *

Proposed alterations and additions

Estimated cost of development *

125000.00

Existing floor area (m2)

88.30

Proposed floor area (m2)

122.10

Site area (m2)

536

Carparking on Site

7/18/22, 10:59 AM

Icon Software Administration

Total parking spaces	Existing parking spaces	N/A
<input type="text" value="1"/>	<input type="text" value="1"/>	<input type="button" value="Other (no selection chosen)"/>

Other Details

Does the application include signage? *

How many signs, please enter 0 if there are none involved in this application? *

Tasmania Heritage Register

Is this property on the Tasmanian Heritage Register?

Application Referral Cultural Heritage - Response

From:	Nicole Manley
Recommendation:	Proposal is acceptable without conditions.
Date Completed:	
Address:	2 / 38 A MACFARLANE STREET, SOUTH HOBART
Proposal:	Partial Demolition, Alterations and Extension
Application No:	PLN-22-271
Assessment Officer:	Mark O'Brien,

Referral Officer comments:

2/38A MacFarlane Street, South Hobart is located within the Hobart Rivulet 1 Heritage Precinct. It is not individually listed heritage place in Table E13.1 of the *Hobart Interim Planning Scheme 2015*.

The dwelling does not have a street frontage as it is located at the rear of the original allotment, behind the dwelling at 1/38A MacFarlane Street. It is a blond brick dwelling that does not contribute historical heritage significance to the precinct.

Heritage Significance

This precinct is significant for reasons including:

1. *The numerous remaining buildings, complexes, intact infrastructure and archaeological features which demonstrate the importance of the Rivulet in the development of early Hobart industrial activity and settlement.*
2. *The significant former Female Factory complex of structures and features which are contained within an important visual and physical setting.*
3. *The contribution by the Rivulet to the aesthetic and visual qualities of the Precinct and wider Hobart area through its diverse setting and structures along its length.*
4. *Its representation of a multitude of integrated historical themes, a complex history and a wide variety of elements and physical features.*



Figure 1: Photograph taken of the driveway to the western side of 38A MacFarlane Street, showing the view corridor towards Unit 2 at the rear. The carport cover of Unit 2 is visible.

Source: Cultural Heritage Officer, 16th July 2022.

Proposal

Construction of new second storey addition to an existing single storey dwelling:

- Demolition of a portion of the roof at the rear to facilitate the addition.
- No demolition or construction works to the front façade.
- Addition to be clad and roofed in James Hardie Axon vertical groove cladding in Monument.

Representations

Five (5) representations were received during the advertising period. One representation addressed concerns related to heritage matters.

Heritage concerns within the representation have been summarised below:

- *The property lays within a heritage precinct. Design aesthetics of the proposed do not align with heritage buildings in the area.*
- *A simple square-box-on-top extension is not appropriate for the heritage setting.*

In response, it is noted that the dwelling is identified as non-contributory within the HR1 Heritage Precinct. Buildings of historical significance are not in the immediate surrounds, with numerous other dwellings of a later era located between. The proposed addition will therefore not enhance or detract from the heritage significance of the existing dwelling and its setting within the Precinct.

Assessment

E13.8.1 Demolition

Demolition must not result in the loss of any of the following:

- a) buildings or works that contribute to the historic cultural heritage significance of the precinct;*
 - b) fabric or landscape elements, including plants, trees, fences, paths, outbuildings and other items, that contribute to the historic cultural heritage significance of the precinct; unless all of the following apply;*
- 1. there are, environmental, social, economic or safety reasons of greater value to the community than the historic cultural heritage values of the place;*
 - 2. there are no prudent or feasible alternatives;*
 - 3. opportunity is created for a replacement building that will be more complementary to the heritage values of the precinct.*

The proposed demolition includes the southern roof plane in the location of the proposed addition. There is no demolition affecting the front of the dwelling. As the dwelling does not contribute historical heritage significance to the precinct, the demolition will not affect fabric of heritage significance.

The proposed demolition therefore satisfies E13.8.1 P1.

E13.8.1 Buildings and Works other than Demolition

P1 Design and siting of buildings and works must not result in detriment to the historic cultural heritage significance of the precinct, as listed in Table E13.2.

P3 Extensions to existing buildings must not detract from the historic cultural heritage significance of the precinct.

The proposed works include the construction of a pop-top second storey addition to a single storey dwelling. The existing dwelling is not of individual heritage significance nor does it contribute historic fabric or heritage significance to the precinct.

The addition will be sited at the rear of the dwelling (which does not have a direct street

frontage and is located behind the dwelling at 1/38A MacFarlane Street), reducing the perceived dominance of the form in the streetscape. View corridors along driveways will likely be the main point of view due to the setback of the addition from the street, although there will be a 2.95 m increase in ridge height. Glazing to both gable ends will increase the transparency and contribute towards reducing the perceived bulk.



Figure 2: Photograph showing the limited view corridor towards 2/38A MacFarlane Street. 38B MacFarlane Street (painted red) is in the foreground, 2/38A MacFarlane Street is located behind the blond brick dwelling to the left and is not visible in this image. Source: Cultural Heritage Officer, 16th July 2022.



Figure 3: Photograph showing the view corridor towards 2/38A MacFarlane Street, behind the blonde brick 1/38A MacFarlane Street. The roof form of Unit 2 is visible. Source: Cultural Heritage Officer, 16th July 2022.

The topography of the surrounding area also creates an appearance of staggered building heights, some appear higher despite the number of single storey dwellings along the eastern end of MacFarlane Street and throughout the precinct.



Figure 4: Photograph showing the MacFarlane Street context, looking towards the western end of the street. Source: Cultural Heritage Officer, 16th July 2022.



Figure 5: Photograph showing the MacFarlane Street context, of staggered heights along the western end of the street. These buildings are Source: Cultural Heritage Officer, 16th July 2022.

The design is a contemporary intervention and does not mimic historic features of the precinct. A second storey is acceptable in this instance, due to the existing context and the limited degree of historic heritage significance of the existing dwelling.

The use of James Hardie Axon vertical cladding and roofing is appropriate for the setting as it will not introduce additional dominant, heavy materiality. It is noted that the colour Monument (or similar dark grey) and other non-traditional colours have been used in other areas of the precinct. As the proposed addition is sited to the rear of the dwelling, which is set back from the street and behind the dwelling at 1/38A MacFarlane Street, it is therefore acceptable to use Monument in this instance, without significantly detracting from the Rivulet setting.

The proposed works therefore comply with E13.8.2 P1 and P3.

Conclusion

The proposal is considered to satisfy the above provisions of the Historic Heritage Code of the Scheme.

Nicole Manley
Graduate Cultural Heritage Officer
11th of August 2022

**7.2.3 98 AUGUSTA ROAD, 100 AUGUSTA ROAD, LENA VALLEY -
PARTIAL DEMOLITION AND ALTERATIONS
PLN-22-236 - FILE REF: F22/82734**

Address: 98 Augusta Road, 100 Augusta Road, Lenah Valley

Proposal: Partial Demolition and Alterations

Expiry Date: 31 August 2022

Extension of Time: Not applicable

Author: Helen Ayers

RECOMMENDATION

That pursuant to the *Hobart Interim Planning Scheme 2015*, the Council approve the application for partial demolition and alterations at 98 and 100 Augusta Road, Lenah Valley 7008 for the reasons outlined in the officer's report and a permit containing the following conditions be issued:

GEN

The use and/or development must be substantially in accordance with the documents and drawings that comprise PLN-22-236 - 98 and 100 AUGUSTA ROAD LENA VALLEY TAS 7008 - Final Planning Documents, except where modified below.

Reason for condition

To clarify the scope of the permit.

PLN 10

All illuminated signs must not be flashing or intermittently illuminated. Signs are only permitted to be illuminated during the permitted opening hours of the site, and must be switched off at all other times.

Reason for condition

To clarify the scope of the permit.

PLN 11

The Sky Sign is not approved and must be omitted from the final signage scheme for the site.

Reason for condition

To ensure compliance with the Signs Code of the *Hobart Interim Planning Scheme 2015*.

PLN 14

The noise generated by the use of the site must not cause environmental harm when measured at the site's southern and eastern boundaries.

Reason for the condition

To ensure noise emissions do not cause environmental harm and do not have an unreasonable impact on residential amenity.

PLN 17

All external lighting on the site must operate in accordance with Australian Standard AS 4282 - Control of the obtrusive effects of outdoor lighting.

External lighting (other than security lighting) must only be illuminated during the approved hours of operation (7:00am to 9:30pm Monday to Sunday). External lighting must be turned off at all other times.

Reason for condition

To ensure that the non-residential use does not unreasonably impact residential amenity.

PLN 6

The approved hours of operation are Monday – Sunday 6am – 6pm.

Advice:

The planning scheme defines 'hours of operation' as 'the hours that a business is open to the public or conducting activities related to the business, not including routine activities normally associated with opening and closing for business'.

Reason for condition

To ensure that non-residential use does not unreasonably impact on residential amenity

PLN s2

Commercial deliveries to, and garbage collection from, the premises are prohibited:

before 7:00am and after 6:00pm Monday to Friday, and
before 9:00am and after 6:00pm on weekends and public holidays.

Reason for condition

To avoid unreasonable impact upon the residential amenity through commercial vehicle movements that are unreasonable in their timing, duration or extent, consistent with Clause 11.3.1 P1 and P4 of the Hobart Interim Planning Scheme 2015.

PLN s3

The removal of hard waste (e.g glass and cans, etc) to garbage receptacles located outside the building is prohibited before 7:00am and after 6:00pm Monday to Friday and before 9:00am and after 6:00pm on weekends and public holidays.

Reason for condition

To avoid unreasonable impact upon surrounding residential amenity through noise emissions that are unreasonable in their timing, duration or extent, consistent with Clause 11.3.1 P1 of the Hobart Interim Planning Scheme 2015.

ENG sw1

All stormwater from the proposed development (including but not limited to: roofed areas, ag drains, retaining wall ag drains and

impervious surfaces such as driveways and paved areas) must be drained to the Council's stormwater infrastructure prior to first occupation or commencement of use (whichever occurs first).

Any private or private shared stormwater system passing through third-party land must have sufficient receiving capacity.

Advice:

Under section 23 of the Urban Drainage Act 2013 it is an offence for a property owner to direct stormwater onto a neighbouring property.

Reason for condition

To ensure that stormwater from the site will be discharged to a suitable Council approved outlet.

ENG 3a

The on site car parking spaces layout area must be provided in accordance with the following documentation which forms part of this permit: Associated Projects Drawings A02 version 7 and A04 version 7 dated 6 July 2022 received by the Council on 6 July 2022.

Any departure from that documentation and any works which are not detailed in the documentation must be either:

- a) approved by the Director City Life, via a condition endorsement application; or
- b) designed and provided in accordance with Australian Standard AS/NZ 2890.1:2004.

The works required by this condition must be completed prior to commencement of use.

Reason for condition

To ensure the safety of users of the access and parking module, and compliance with the relevant Australian Standard.

ENG 4

The parking module (car parking spaces, aisles and manoeuvring area) provided must be sealed (spray seal, asphalt, concrete, pavers or equivalent Council approved) and surface drained to the Council's stormwater infrastructure prior to the commencement of use.

Reason for condition

To ensure the safety of users of the access driveway and parking module, and that it does not detract from the amenity of users, adjoining occupiers or the environment by preventing dust, mud and sediment transport.

ENG 5

The number of car parking spaces to be provided on the site is five (5) unless approved otherwise. The on site car parking spaces provided are to be for employee use only.

Prior to commencement of use parking spaces must be delineated by means of white or yellow lines 80mm to 100mm wide, or white or yellow pavement markers in accordance with Australian Standards AS/NZS 2890.1 2004.

Reason for condition

To ensure safe and efficient parking adequate to provided for the use.

ENG 7

The number of bicycle parking spaces to be provided on the site is six (6) unless approved otherwise. Four (4) of the spaces are for employee use and two (2) spaces are for customer use.

Bicycle parking spaces shall be in accordance with AS 2890.3-2015 and provided prior to commencement of use.

Reason for condition

To ensure suitable bicycle parking facilities are provided.

ENG 1

Any damage to council infrastructure resulting from the implementation of this permit, must, at the discretion of the Council:

1. Be met by the owner by way of reimbursement (cost of repair and reinstatement to be paid by the owner to the Council); or
2. Be repaired and reinstated by the owner to the satisfaction of the Council.

A photographic record of the Council's infrastructure adjacent to the subject site must be provided to the Council prior to any commencement of works.

A photographic record of the Council's infrastructure (e.g. existing property service connection points, roads, buildings, stormwater, footpaths, driveway crossovers and nature strips, including if any, pre-existing damage) will be relied upon to establish the extent of damage caused to the Council's infrastructure during construction. In the event that the owner/developer fails to provide to the Council a photographic record of the Council's infrastructure, then any damage to the Council's infrastructure found on completion of works will be deemed to be the responsibility of the owner.

Reason for condition

To ensure that any of the Council's infrastructure and/or site-related service connections affected by the proposal will be altered and/or reinstated at the owner's full cost.

ENV 1

Sediment and erosion control measures sufficient to prevent sediment from leaving the site must be installed prior to any disturbance of the site, and maintained until all areas of disturbance have been stabilized or re-vegetated.

Advice:

For further guidance in preparing a Soil and Water Management Plan – in accordance with Fact sheet 3 Derwent Estuary Program click [here](#).

Reason for condition

To avoid the sedimentation of roads, drains, natural watercourses, Council land that could be caused by erosion and runoff from the development, and to comply with relevant State legislation.

ADVICE

The following advice is provided to you to assist in the implementation of the planning permit that has been issued subject to the conditions above. The advice is not exhaustive and you must inform yourself of any other legislation, by-laws, regulations, codes or standards that will apply to your development under which you may need to obtain an approval. Visit the Council's [website](#) for further information.

Prior to any commencement of work on the site or commencement of use the following additional permits/approval may be required from the Hobart City Council.

CONDITION ENDORSEMENT

If any condition requires that further documents are submitted and approved, you will need to submit the relevant documentation to satisfy the condition via the Condition Endorsement Submission on Council's [online services e-planning portal](#). Detailed instructions can be found [here](#).

A fee of 2% of the value of the works for new public assets (stormwater infrastructure, roads and related assets) will apply for the condition endorsement application.

Once approved, the Council will respond to you via email that the condition has been endorsed (satisfied).

Where building approval is also required, it is recommended that documentation for condition endorsement be submitted well before submitting documentation for building approval. Failure to address condition endorsement requirements prior to submitting for building approval may result in unexpected delays.

BUILDING PERMIT

You may need building approval in accordance with the *Building Act 2016*. Click [here](#) for more information.

This is a Discretionary Planning Permit issued in accordance with section 57 of the *Land Use Planning and Approvals Act 1993*.

PLUMBING PERMIT

You may need plumbing approval in accordance with the *Building Act 2016*, *Building Regulations 2016* and the National Construction Code. Click [here](#) for more information.

STORMWATER

Please note that in addition to a building and/or plumbing permit, development must be in accordance with the Hobart City Council's Infrastructure By law. Click [here](#) for more information.

RIGHT OF WAY

The private right of way must not be reduced, restricted or impeded in any way, and all beneficiaries must have complete and unrestricted access at all times.

You should inform yourself as to your rights and responsibilities in respect to the private right of way particularly reducing, restricting or impeding the right during and after construction.

NOISE REGULATIONS

Click [here](#) for information with respect to noise nuisances in residential areas.

WASTE DISPOSAL

It is recommended that the developer liaise with the Council's Cleansing and Solid Waste Unit regarding reducing, reusing and recycling materials associated with demolition on the site to minimise solid waste being directed to landfill.


Further information regarding waste disposal can also be found on the Council's [website](#).


FEES AND CHARGES

Click [here](#) for information on the Council's fees and charges.

DIAL BEFORE YOU DIG

Click [here](#) for dial before you dig information.

Attachment A: PLN-22-236 - 98 AUGUSTA ROAD LENA
VALLEY TAS 7008 - Planning Committee or
Delegated Report ↓ 

Attachment B: PLN-22-236 - 98 and 100 AUGUSTA ROAD
LENAH VALLEY TAS 7008 - CPC Agenda
Documents ↓ 

**APPLICATION UNDER HOBART INTERIM PLANNING SCHEME 2015**

Type of Report: Committee
Council: 22 August 2022
Expiry Date: 31 August 2022
Application No: PLN-22-236
Address: 98 AUGUSTA ROAD , LENA VALLEY
100 AUGUSTA ROAD , LENA VALLEY
Applicant: AIMEE HOWELL
98 AUGUSTA ROAD
Proposal: Partial Demolition and Alterations
Representations: Six (6)
Performance criteria: Inner Residential Zone Use and Development Standards, Parking and Access Code, Signs Code

1. Executive Summary

- 1.1 Planning approval is sought for Partial Demolition and Alterations, at 98 and 100 Augusta Road, Lenah Valley.
- 1.2 More specifically the proposal includes:
- A change of the trading hours to between 6am and 6pm Monday to Friday.
 - Minor external alterations including replacing a window with a door, and a minor alteration to an external store room wall.
 - Internal Fit out in line with new tenant requirements.
 - 21 new signs.
- 1.3 The proposal relies on performance criteria to satisfy the following standards and codes:
- 1.3.1 Inner Residential Zone - Building Envelope, Non-Residential Use
- 1.3.2 Parking and Access Code - Number of Parking Spaces, Layout of Parking Areas, Design of Bicycle Parking Area, Facilities for Commercial Vehicles
- 1.3.3 Signs Code - Use of Signs, Standards for Signs

- 1.4 Six (6) representations objecting to the proposal were received within the statutory advertising period between 13 and 27 July 2022.
- 1.5 The proposal is recommended for approval subject to conditions.
- 1.6 The final decision is delegated to the Council, because six (6) representations were received.

2. Site Detail

- 2.1 The subject site is located on the southern side of Augusta Road, opposite Courtney Street, within a 'strip' of commercial uses that service the surrounding residential area and beyond. These uses include a medical centre, a newsagent and post office, shops, pharmacies, cafes/restaurants and a service station. There are residential properties interspersed within the commercial strip and surrounding it. The site itself contains an existing commercial building, which is currently approved for food services but is vacant.
- 2.2 The application site also relies on the common land of the adjacent strata for access to the rear carpark.



Figure 1: Both the Site of the change of use and works and the land relied upon for right of way rear access are highlighted in orange

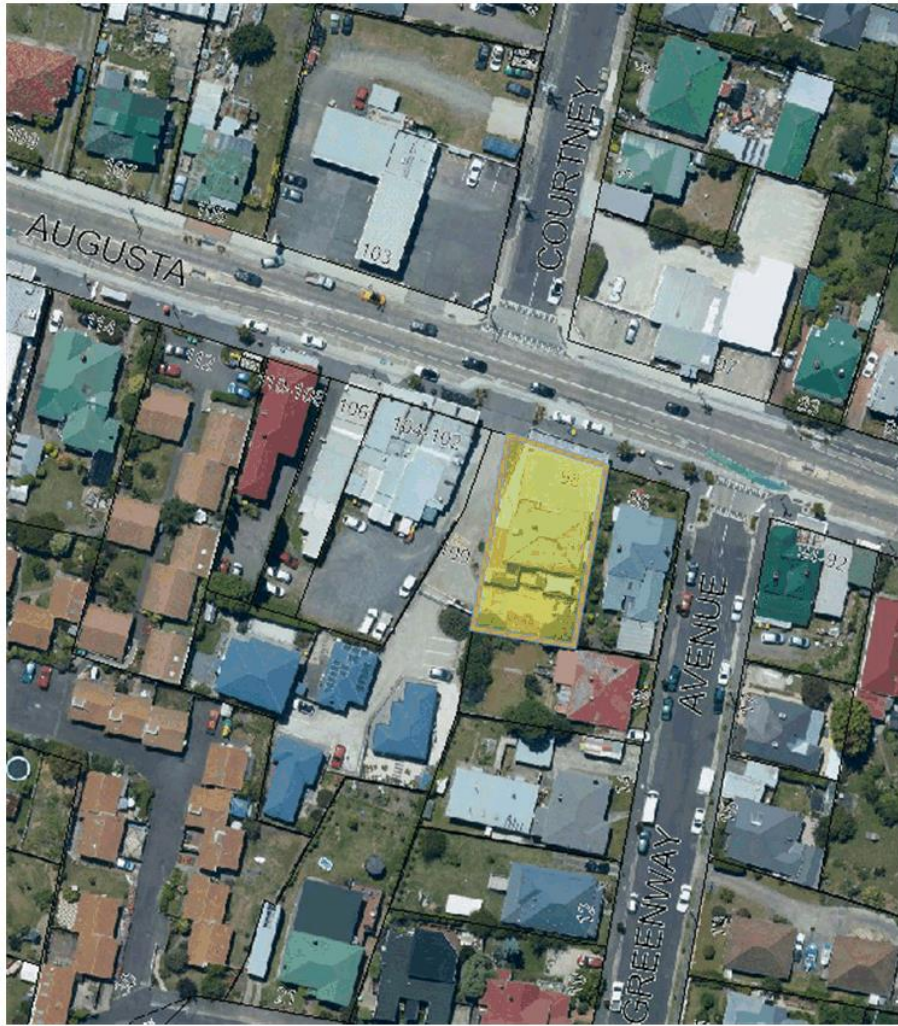


Figure 2: The location of the change of use and works is highlighted in yellow

3. Proposal

- 3.1 Planning approval is sought for Partial Demolition and Alterations, at 98 and 100 Augusta Road, Lenah Valley.

3.2 More specifically the proposal is for:

- A change of the trading hours to between 6am and 6pm Monday to Friday.
- Minor external alterations including replacing a window with a door, and a minor alteration to an external store room wall.
- Internal Fit out in line with new tenant requirements.
- 21 new signs including:
 - Four new awning Facia Signage.
 - Fourteen new Window Signs.
 - One new Transom Sign.
 - One new Below Awning Sign.
 - One new Roof / Sky Sign.

4. Background

- 4.1 Approval for the combination of two former food premises tenancies, and the use of the whole of the site as a single food services premise, with evening and weekend trading was approved on 9 July 2018 through PLN-17-480.
- 4.2 The previous permit approved the use of the site between 7am and 9:30pm seven days a week, with restrictions on delivery times, and external noise generating activities to minimise the impact on the adjoining and nearby residential amenity.
- 4.3 In September 2019 there was a fire on site which resulted in the cessation of the approved use whilst repairs were undertaken. Since that time, the building has remained vacant.

5. Concerns raised by representors

- 5.1 Six (6) representations objecting to the proposal were received within the statutory advertising period between 13 and 27 July 2022.
- 5.2 The following table outlines the concerns raised in the representations received. Those concerns which relate to a discretion invoked by the proposal are addressed in Section 6 of this report.

Noise:
One representor is concerned that there will be undue noise from the site very early in the morning whilst baking is occurring ready for the shop to open at 6am.

One representor is concerned that staff vehicles, rubbish collection, and noisy kitchen exhaust fans will cause an unreasonable loss of residential amenity early in the morning.
Signs:
One representor has expressed the view that the rooftop sign is out of character for the neighbourhood, and unnecessary, particularly given the amount of signage elsewhere on the building.
Privacy:
One representor has requested that the existing vegetation at the rear of the property be retained as a privacy and noise screen for the adjacent dwelling. They have further requested that if they are removed, they are replaced.
One representor has expressed concern that the car parking and rear of the building may be converted to outdoor dining, despite this not being shown on the plan. They have suggested that this would result in unreasonable loss of residential amenity for adjoining dwellings through noise and loss of privacy.
Inclusion of 100 Augusta Road:
Several representors have expressed confusion over the inclusion of 100 Augusta Road in the application, and concern that someone has proposed demolition on that land without the owners consent.
One representor has expressed concern that the inclusion of this property may result in the right of way being restricted or blocked. They have requested that the right of way remain unencumbered at all times
Internal Fit-out:
One representor has raised concern over the accessibility of the customer toilet at the rear of the building. They have suggested that the design includes steps in the main access pathway.
One representor has raised concern with the remoteness of the customer toilet, and the fact that it is externally accessible. They have suggested that this will lead to a need for the toilet to be locked, and to embarrassment for customers needing to request a key.
One representor is concerned that the external access to the customer toilet will be unpleasant in rainy weather.

6. Assessment

- 6.1 The *Hobart Interim Planning Scheme 2015* is a performance based planning scheme. To meet an applicable standard, a proposal must demonstrate compliance with either an acceptable solution or a performance criterion. Where a proposal complies with a standard by relying on one or more performance criteria, the Council may approve or refuse the proposal on that basis. The ability to approve or refuse the proposal relates only to the performance criteria relied on.
- 6.2 The site is located within the Inner Residential Zone of the *Hobart Interim Planning Scheme 2015*.
- 6.3 There is no proposal to change the use of the site, but rather to change the operating hours associated with the existing use. The existing use is a discretionary use in the zone.
- 6.4 The proposal has been assessed against:
- 6.4.1 Part D - 11.0 Inner Residential Zone
 - 6.4.2 Part E - E6.0 Parking and Access Code
 - 6.4.3 Part E - E17.0 Signs Code
- 6.5 The proposal relies on the following performance criteria to comply with the applicable standards:
- 6.5.1 Inner Residential Zone:
 - Non-Residential Use - Part D 11.3.1 P1, P2, P3, P4*
 - Setback and Building Envelope - Part D 11.4.2 P3*
 - 6.5.2 Parking and Access Code:
 - Number of Parking Spaces - Part E E6.6.1 P1*
 - Layout of Parking Areas - Part E E6.7.5 P1*
 - Design of Bicycle Parking Areas - Part E E 6.7.10 P1, P2*
 - Facilities for Commercial Vehicles - Part E E6.7.13 P1*
 - 6.5.3 Signs Code:
 - Use of Signs - Part E E17.6.1 P1, P4*

Standards for Signs -Part E E17.7.1 P1, P2

- 6.6 Each performance criterion is assessed below.
- 6.7 Non-Residential Use - Part D 11.3.1 P1
- 6.7.1 The acceptable solution at clause 11.3.1 A1 requires hours of operation to be within 8.00am to 6.00pm.
- 6.7.2 The proposal includes a bakery that is open to the public between 6am and 6pm.
- 6.7.3 The proposal does not comply with the acceptable solution; therefore assessment against the performance criterion is relied on.
- 6.7.4 The performance criterion at clause 11.3.1 P1 provides as follows:
- Hours of operation must not have an unreasonable impact upon the residential amenity through commercial vehicle movements, noise or other emissions that are unreasonable in their timing, duration or extent.*
- 6.7.5 The existing approved use of the site is for a cafe / restaurant, with trading hours between 7am and 9:30pm, so the proposed new use will reduce the hours the site is open to the public significantly, effectively removing night time trading from the site.
- 6.7.6 The application was publicly advertised, and no concern was raised with unreasonable emissions from the site. It is anticipated that any smell coming from the bakery will be adequately address through food licensing regulations.
- 6.7.7 As bakeries can use large tubs and tins of product, it is considered reasonable to require that these be disposed of during limited hours to prevent bulky items making noise in outdoor bins early in the morning.
- 6.7.8 Any potential noise from timing and frequency of commercial vehicle movements is more fully addressed below.
- 6.7.9 The proposal complies with the performance criterion.
- 6.8 Non-Residential Use - Part D 11.3.1 P2

- 6.8.1 The acceptable solution at clause 11.3.1 A2 requires noise emissions at the site boundaries to be within set parameters.
- 6.8.2 The proposal includes no information to address the potential noise emissions from the site.
- 6.8.3 The proposal does not comply with the acceptable solution; therefore assessment against the performance criterion is relied on.
- 6.8.4 The performance criterion at clause 11.3.1 P2 provides as follows:
- Noise emissions measured at the boundary of the site must not cause environmental harm.*
- 6.8.5 Given the nature of the use of the site, it is unlikely that there will be unreasonable noise emissions resulting. However, as no information has been provided, it is considered necessary to condition that noise emissions not cause environmental harm in accordance with the performance criteria.
- 6.8.6 The proposal complies with the performance criterion, subject to the abovementioned condition.
- 6.9 Non-Residential Use - Part D 11.3.1 P3
- 6.9.1 The acceptable solution at clause 11.3.1 A3 requires external lighting, other than security lighting, to be switched off between 6pm and 8am.
- 6.9.2 The proposal includes external lighting being used between 6am and 6pm
- 6.9.3 The proposal does not comply with the acceptable solution; therefore assessment against the performance criterion is relied on.
- 6.9.4 The performance criterion at clause 11.3.1 P3 provides as follows:
- External lighting must not adversely affect existing or future residential amenity, having regard to all of the following:*
- (a) level of illumination and duration of lighting;*
- (b) distance to habitable rooms in an adjacent dwelling.*

- 6.9.5 The building is oriented such that the light at the front (excluding signage, which is discussed separately below) is directed to the road. It is acknowledged that the access to the bathrooms is external. However, this walkway was required to be screened through the previous approval to limit light spill into the adjacent residence to the east. Further to this, the existing approved use of the site allowed for external lighting until 9:30 pm, whereas the proposed new use will reduce this to the lighting being switched off at 6pm.
- 6.9.6 As such, there is no unreasonable impact from external lighting during the proposed new opening hours. However, as there is potential to access the site outside of opening hours, it is considered prudent to include a condition limiting non-security lighting to the opening hours of the business.
- 6.9.7 The proposal complies with the performance criterion.
- 6.10 Non-Residential Use - Part D 11.3.1 P4
- 6.10.1 The acceptable solution at clause 11.3.1 A4 limits commercial vehicle movements to between 7am and 5pm Monday to Friday, (am to 12pm Saturdays, and none on Sundays and public holidays).
- 6.10.2 The proposal includes 8-9 commercial vehicle movements per week, between 7am and 3pm everyday.
- 6.10.3 The proposal does not comply with the acceptable solution; therefore assessment against the performance criterion is relied on.
- 6.10.4 The performance criterion at clause 11.3.1 P4 provides as follows:
- Commercial vehicle movements, (including loading and unloading and garbage removal) must not result in unreasonable adverse impact upon residential amenity having regard to all of the following:*
- (a) the time and duration of commercial vehicle movements;*
- (b) the number and frequency of commercial vehicle movements;*
- (c) the size of commercial vehicles involved;*
- (d) the ability of the site to accommodate commercial vehicle*

turning movements, including the amount of reversing (including associated warning noise);

(e) noise reducing structures between vehicle movement areas and dwellings;

(f) the level of traffic on the road;

(g) the potential for conflicts with other traffic.

- 6.10.5 The existing approved use of the site included commercial vehicle movements between 7am and 6pm Monday to Friday, and 9am and 6pm weekends and public holidays.
- 6.10.6 The number of commercial vehicle movements will average to one per day. Given that the site is within a Commercial strip on Augusta Road, with other food premises, as well as groceries, newsagency, pharmacy, doctors and a service station, it is anticipated that this number of vehicle movements will not be out of character, or impact upon residential amenity.
- 6.10.7 Notwithstanding this, given the residential nature of the wider surrounding area, and of the adjacent properties to the south and east, it is considered appropriate to retain the limitation on commercial vehicle movement times from the previous approval, but to reduce the afternoon times in line with the applicant request of vehicle movements up to 3pm.
- 6.10.8 The proposal complies with the performance criterion, subject to the condition restricting weekend and public holiday delivery times.
- 6.11 Setback and Building Envelope - Part D 11.4.2 P3
- 6.11.1 The acceptable solution at clause 11.4.2 A3 requires buildings and works to be contained within a three dimensional building envelope as described, and to have a maximum wall length of 9m within 1.5m of side and rear boundaries.
- 6.11.2 The proposal includes alterations to a store room wall on the northern side boundary, decreasing the setback of that portion of the wall to 0m from the boundary, resulting in a wall length of 10.3m on the boundary, with a further approximately 7m within the 1.5m of the side boundary.
- 6.11.3 The proposal does not comply with the acceptable solution; therefore

assessment against the performance criterion is relied on.

6.11.4 The performance criterion at clause 11.4.2 P3 provides as follows:

The siting and scale of a dwelling must:

- (a) not cause an unreasonable loss of amenity to adjoining properties, having regard to:*
 - (i) reduction in sunlight to a habitable room (other than a bedroom) of a dwelling on an adjoining property;*
 - (ii) overshadowing the private open space of a dwelling on an adjoining property;*
 - (iii) overshadowing of an adjoining vacant property; and*
 - (iv) visual impacts caused by the apparent scale, bulk or proportions of the dwelling when viewed from an adjoining property; and*
- (b) provide separation between dwellings on adjoining properties that is consistent with that existing on established properties in the area.*

6.11.5 The orientation of the building is such that there will be no change to overshadowing of any surrounding residential use or development. The wall in question is single storey and faces a driveway which is adjacent to another commercial use, with residential to the rear where there will be no impact from this infill wall development.

6.11.6 The proposal complies with the performance criterion.

6.12 Number of Parking Spaces - Part E E6.6.1 P1

6.12.1 The acceptable solution at clause E6.6.1 A1 requires 50 car parking spaces to be provided on site.

6.12.2 The proposal includes 5 car parking spaces on site.

6.12.3 The proposal does not comply with the acceptable solution; therefore assessment against the performance criterion is relied on.

6.12.4 The performance criterion at clause E6.6.1 P1 provides as follows:

The number of on-site car parking spaces must be sufficient to meet the reasonable needs of users, having regard to all of the

following:

- (a) car parking demand;*
- (b) the availability of on-street and public car parking in the locality;*
- (c) the availability and frequency of public transport within a 400m walking distance of the site;*
- (d) the availability and likely use of other modes of transport;*
- (e) the availability and suitability of alternative arrangements for car parking provision;*
- (f) any reduction in car parking demand due to the sharing of car parking spaces by multiple uses, either because of variation of car parking demand over time or because of efficiencies gained from the consolidation of shared car parking spaces;*
- (g) any car parking deficiency or surplus associated with the existing use of the land;*
- (h) any credit which should be allowed for a car parking demand deemed to have been provided in association with a use which existed before the change of parking requirement, except in the case of substantial redevelopment of a site;*
- (i) the appropriateness of a financial contribution in lieu of parking towards the cost of parking facilities or other transport facilities, where such facilities exist or are planned in the vicinity;*
- (j) any verified prior payment of a financial contribution in lieu of parking for the land;*
- (k) any relevant parking plan for the area adopted by Council;*
- (l) the impact on the historic cultural heritage significance of the site if subject to the Local Heritage Code;*
- (m) whether the provision of the parking would result in the loss, directly or indirectly, of one or more significant trees listed in the Significant Trees Code.*

- 6.12.5 The proposal has been considered by Council's Development Engineer, who has provided the following assessment:

The parking number assessment must satisfy either Acceptable Solutions or Performance Criteria for each clause of the Hobart Interim Planning Scheme 2015 (HIPS 2015).

Documentation submitted to date does not satisfy the Acceptable Solution for clause E6.6.1 (a) and as such, shall be assessed under Performance Criteria. The subject site has an existing approval for food services (takeaway/restaurant) with seating for 66 people within the building with a gross floor area of approximately 332 sqm. The acceptable solution of the parking and access code clause E6.6.1 requires fifteen (15) parking spaces for each 100sqm of floor area or one (1) space for each three (3) seats, whichever is greater. Therefore the acceptable solution requires fifty (50) on site car parking spaces based on floor area or twenty two (22) on site car parking spaces based on number of seats for the existing approval. The existing approval accepted the provision of five (5) on site car parking spaces (for employees use) resulting in a deficiency of forty five (45) on site car parking spaces in accordance with the performance criteria and comments by Council's Traffic Engineer that approval is support on traffic engineering and road safety if the five on site car parking spaces for the use of employees are 'formalised' to be sealed and marked out in accordance with the plans provided. There is no change to the gross floor area for the current application, however the number of seats to be provided has increased to seventy five (75) which requires fifty (50) on site car parking spaces based on floor area or twenty (25) on site carparking space base on number of seats, which ever is greater, to meet the acceptable solution. This current application shows the provision of five (5) on site car parking spaces. As the greater number of on site car parking space is still associated with floor area then there is no change to the on site car parking requirements from the existing approval and as such no change to the deficiency in on site car parking provided for this application. The previous approval accepted five (5) on site car parking spaces with a deficiency of forty five (45) on site car parking spaces in accordance with the performance criteria and Council's Traffic Engineers comments. The current application is not expected to be required to make up for previously accepted parking deficiencies. The five (5) on site car

parking spaces do not appear to be formalised at this point in time and condition will be applied such these 5 on site car parking spaces are to be sealed and linemarked.

Acceptable solution - A1: - NON COMPLIANT

The number of on-site car parking spaces must be:

(a) no less than and no greater than the number specified in Table E6.1;

- Documentation submitted to date does not satisfy the Acceptable Solution for clause E6.6.1 (a) and as such, shall be assessed under Performance Criteria. The subject site has an existing approval for food services (takeaway/restaurant) with seating for 66 people within the building with a gross floor area of approximately 332 sqm. The acceptable solution of the parking and access code clause E6.6.1 requires fifteen (15) parking spaces for each 100sqm of floor area or one (1) space for each three (3) seats, whichever is greater. Therefore the acceptable solution requires fifty (50) on site car parking spaces based on floor area or twenty two (22) on site car parking spaces based on number of seats for the existing approval. The existing approval accepted the provision of five (5) on site car parking spaces (for employees use) resulting in a deficiency of forty five (45) on site car parking spaces in accordance with the performance criteria and comments by Council's Traffic Engineer that approval is support on traffic engineering and road safety if the five on site car parking spaces for the use of employees are 'formalised' to be sealed and marked out in accordance with the plans provided. There is no change to the gross floor area for the current application, however the number of seats to be provided has increased to seventy five (75) which requires fifty (50) on site car parking spaces based on floor area or twenty (25) on site carparking space base on number of seats, which ever is greater, to meet the acceptable solution. This current application shows the provision of five (5) on site car parking spaces. As the greater number of on site car parking space is still associated with floor area then there is no change to the on site car parking requirements from the existing approval and as such no change to the deficiency in on site car parking provided for this application. The previous approval accepted five (5) on site car parking spaces with a deficiency of forty five (45) on site car parking spaces in accordance with the performance criteria and Council's Traffic Engineers comments. The current

application is not expected to be required to make up for previously accepted parking deficiencies. The five (5) on site car parking spaces do not appear to be formalised at this point in time and condition will be applied such these 5 on site car parking spaces are to be sealed and linemarked.

Performance Criteria - P1:

The number of on-site car parking spaces must be sufficient to meet the reasonable needs of users, having regard to all of the following:

(a) car parking demand;

The existing approval accepted the provision of five (5) on site car parking spaces (for employees use) resulting in a deficiency of forty five (45) on site car parking spaces in accordance with the performance criteria and comments by Council's Traffic Engineer that approval is support on traffic engineering and road safety if the five on site car parking spaces for the use of employees are 'formalised' to be sealed and marked out in accordance with the plans provided. There is no change to the gross floor area for the current application, however the number of seats to be provided has increased to seventy five (75) which requires fifty (50) on site car parking spaces based on floor area or twenty (25) on site carparking space base on number of seats, which ever is greater, to meet the acceptable solution. This current application shows the provision of five (5) on site car parking spaces. As the greater number of on site car parking space is still associated with floor area then there is no change to the on site car parking requirements from the existing approval and as such no change to the deficiency in on site car parking provided for this application. The previous approval accepted five (5) on site car parking spaces with a deficiency of forty five (45) on site car parking spaces in accordance with the performance criteria and Council's Traffic Engineers comments. The current application is not expected to be required to make up for previously accepted parking deficiencies. The five (5) on site car parking spaces do not appear to be formalised at this point in time and condition will be applied such these 5 on site car parking spaces are to be sealed and linemarked.

(b) the availability of on-street and public car parking in the locality;

- There is a relatively large supply of on-street parking in the

surrounding road network. Much of the available parking is in the form of time-restricted parking, with authorised residents excepted. Observations indicate that there is a large pool of parking that would be available to meet the potential demands of visitor and overflow parking, particularly after normal working hours.

(c) the availability and frequency of public transport within a 400m walking distance of the site;

- Metro Tasmania operate regular bus services within 400 metres of the subject site.

(d) the availability and likely use of other modes of transport;

- The site is located within convenient walking distance for local residents.

(e) the availability and suitability of alternative arrangements for car parking provision;

- No alternative parking provision is available or considered necessary.

(f) any reduction in car parking demand due to the sharing of car parking spaces by multiple uses, either because of variation of car parking demand over time or because of efficiencies gained from the consolidation of shared car parking spaces;

- Not applicable.

(g) any car parking deficiency or surplus associated with the existing use of the land;

- Not applicable.

(h) any credit which should be allowed for a car parking demand deemed to have been provided in association with a use which existed before the change of parking requirement, except in the case of substantial redevelopment of a site;

- Not applicable.

(i) the appropriateness of a financial contribution in lieu of parking towards the cost of parking facilities or other transport facilities, where such facilities exist or are planned in the vicinity;

- Not applicable.

(j) any verified prior payment of a financial contribution in lieu of parking for the land;

- Not applicable.

(k) any relevant parking plan for the area adopted by Council;

- Not applicable.

(l) the impact on the historic cultural heritage significance of the site if subject to the Local Heritage Code; and

- Not applicable.

(m) whether the provision of the parking would result in the loss, directly or indirectly, of one or more significant trees listed in the Significant Trees Code.

- No impact.

Based on the above assessment and given the submitted documentation, the parking provision may be accepted under Performance Criteria P1:E6.6.1 of the Planning Scheme. This is particularly due to the actual parking demands that will be generated by the development.

6.12.6 The proposal complies with the performance criterion.

6.13 Layout of Parking Areas - Part E E6.7.5 P1

6.13.1 The acceptable solution at clause E6.7.5 A1 requires car parking areas to be laid out in accordance with the relevant Australian Standard.

6.13.2 The proposal includes car parking areas that are not laid out in accordance with the relevant Australian Standard.

6.13.3 The proposal does not comply with the acceptable solution; therefore assessment against the performance criterion is relied on.

6.13.4 The performance criterion at clause E6.7.5 P1 provides as follows:

The layout of car parking spaces, access aisles, circulation roadways and ramps must be safe and must ensure ease of access, egress and manoeuvring on-site.

6.13.5 The proposal has been considered by Council's Development Engineer, who has provided the following assessment:

The layout of the parking area must satisfy either Acceptable

Solutions or Performance Criteria for each clause of the Hobart Interim Planning Scheme 2015 (HIPS 2015).

Documentation submitted to date does not satisfy the Acceptable Solution for clause E6.7.5 and as such, shall be assessed under Performance Criteria.

Acceptable Solution A1: - NON COMPLIANT

The layout of car parking spaces, access aisles, circulation roadways and ramps must be designed and constructed to comply with section 2 "Design of Parking Modules, Circulation Roadways and Ramps" of AS/NZS 2890.1:2004 Parking Facilities Part 1: Off-street car parking and must have sufficient headroom to comply with clause 5.3 "Headroom" of the same Standard.

- *Car Parking Space Dimensions (AS2890.1 Fig 2.2 = 2.4x5.4m Class 1A):*
 - *Submitted documentation appears able to satisfy this requirement*
- *Car Parking Space Design Envelope (AS2890.1 Fig 5.2 300mm clearance on side):*
 - *Submitted documentation appears able to satisfy this requirement*
- *Headroom: (AS2890.1 Fig 5.3 = 2.2m clearance):*
 - *Not applicable*
- *Parking Space Gradient (5%):*
 - *Submitted documentation appears unable to satisfy this requirement*
- *Aisle Width (AS2890.1 Fig 2.2 = 5.8m Class 1A):*
 - *Submitted documentation appears to not to satisfy this requirement, however Council Traffic Engineering is satisfied the car parking layout is acceptable if for employee use only.*
- *Garage Door Width & Apron (AS2890.1 Fig 5.4 = 2.4m wide => 7m wide apron):*
 - *Not applicable*
- *Parking Module Gradient (manoeuvring area 5% Acceptable Soln, 10% Performance):*

- Submitted documentation appears to satisfy this requirement but assessed under Performance Criteria

- Driveway Gradient & Width (AS2890.1 Section 2.6 = 25% and 3m):

- Submitted documentation appears able to satisfy this requirement

- Transitions (AS2890.1 Section 2.5.3 = 12.5% summit, 15% sag => 2m transition):

- Submitted documentation appears able to satisfy this requirement

- Vehicular Barriers (AS2890.1 Section 2.4.5.3 = 600mm drop, 1:4 slope):

- Submitted documentation appears able to satisfy this requirement

- Blind Aisle End Widening (AS2890.1 Fig 2.3 = 1m extra):

- N/A

- "Jockey Parking" (Performance Assessment):

- YES but assessed under Performance Criteria

Performance Criteria - P1:

The layout of car parking spaces, access aisles, circulation roadways and ramps must be safe and must ensure ease of access, egress and manoeuvring on-site.

- Acceptable, submitted documentation appears to satisfy this requirement

In this instance for the commercial use of the site, the car parking space layout may utilise 'Jockey Parking' configuration in which the one car parking space is behind another car parking space provided if it is used by employees only in accordance with Council's Traffic Engineer provided for the existing approval. Council's Traffic Engineer has provided comments in the existing approval that approval is supported on traffic engineering and road safety if the five on site car parking spaces for the use of employees are 'formalised' to be sealed and marked out in accordance with the plans provided and therefore may be accepted under Performance Criteria P1:E6.7.5 given the driveway configuration.

6.13.6 The proposal complies with the performance criterion.

6.14 Design of Bicycle Parking Areas - Part E E 6.7.10 P1, P2

6.14.1 The acceptable solution at clauses E6.7.10 A1 and A2 require bicycle parking to be provided and designed in accordance with the relevant Australian Standard.

6.14.2 The proposal includes no bicycle parking.

6.14.3 The proposal does not comply with the acceptable solution; therefore assessment against the performance criterion is relied on.

6.14.4 The performance criterion at clauses E6.7.10 P1 and P2 provide as follows:

P1 - The design of bicycle parking facilities must provide safe, obvious and easy access for cyclists, having regard to all of the following:

(a) minimising the distance from the street to the bicycle parking area;

(c) providing clear sightlines from the building or the public road to provide adequate passive surveillance of the parking facility and the route from the parking facility to the building;

(d) avoiding creation of concealment points to minimise the risk.

P2 - The design of bicycle parking spaces must be sufficient to conveniently, efficiently and safely serve users without conflicting with vehicular or pedestrian movements or the safety of building occupants.

6.14.5 The proposal has been considered by Council's Development Engineer, who has provided the following assessment:

The bicycle parking must satisfy either Acceptable Solutions or Performance Criteria for each clause of the Hobart Interim Planning Scheme 2015 (HIPS 2015).

Documentation submitted to date does not satisfy the Acceptable

Solution for clause E6.7.10 and as such, shall be assessed under Performance Criteria. The existing approval required the provision of 6 on site bicycle parking spaces in accordance with the comments of Council Traffic Engineer that bicycle parking is to be provided in accordance with the requirements of Table E6.2 (i.e. 4 employee bicycle parking spaces and 2 customer bicycle parking spaces). The current application does not show the provision of these 6 on site bicycle parking spaces. A condition will be applied such that 6 on site bicycle parking space are to be provided unless approved otherwise.

Acceptable Solution A1: - NON COMPLIANT

The number of on-site bicycle parking spaces provided must be no less than the number specified in Table E6.2.

Acceptable Solution A2: - NON COMPLIANT

The design of bicycle parking spaces must be to the class specified in table 1.1 of AS2890.3-1993 Parking facilities Part 3: Bicycle parking facilities in compliance with section 2 "Design of Parking Facilities" and clauses 3.1 "Security" and 3.3 "Ease of Use" of the same Standard.

Table E6.2 sets out the number of bicycle parking spaces required. The requirement for spaces for a use or development listed in the first column of the table is set out in the second and forth columns of the table with the corresponding class set out in the third and fifth columns. If the result is not a whole number, the required number of (spaces) is the nearest whole number. If the fraction is one-half, the requirement is the next whole number.

Performance Criteria - P1:

The design of bicycle parking facilities must provide safe, obvious and easy access for cyclists, having regard to all of the following:

(a) minimising the distance from the street to the bicycle parking area;

- A condition will be applied such that 6 on site bicycle parking space are to be provided unless approved otherwise.

(c) providing clear sightlines from the building or the public road to

provide adequate passive surveillance of the parking facility and the route from the parking facility to the building; and
- A condition will be applied such that 6 on site bicycle parking space are to be provided unless approved otherwise.

(d) avoiding creation of concealment points to minimise the risk.
- A condition will be applied such that 6 on site bicycle parking space are to be provided unless approved otherwise.

Performance Criteria – P2:

The design of bicycle parking spaces must be sufficient to conveniently, efficiently and safely serve users without conflicting with vehicular or pedestrian movements or the safety of building occupants.
- A condition will be applied such that 6 on site bicycle parking space are to be provided unless approved otherwise.

6.14.6 The proposal complies with the performance criterion.

6.15 Facilities for Commercial Vehicles - Part E E6.7.13 P1

6.15.1 The acceptable solution at clause E6.7.13 A1 requires commercial vehicle facilities to be provided in accordance with the relevant Australian Standard.

6.15.2 The proposal does not include any commercial vehicle facilities.

6.15.3 The proposal does not comply with the acceptable solution; therefore assessment against the performance criterion is relied on.

6.15.4 The performance criterion at clause E6.7.13 P1 provides as follows:

Commercial vehicle arrangements for loading, unloading or manoeuvring must not compromise the safety and convenience of vehicular traffic, cyclists, pedestrians and other road users.

6.15.5 The proposal has been considered by Council's Development Engineer, who has provided the following assessment:

The facilities for commercial vehicles must satisfy either Acceptable Solutions or Performance Criteria for each clause of the Hobart Interim Planning Scheme 2015 (HIPS 2015).

Documentation submitted to date does not satisfy the Acceptable Solution for clause E6.7.13 and as such, shall be assessed under Performance Criteria. Delivery vehicles are proposed to utilise the on Street parking in the vicinity of the site. There is no designated loading zone on the street within 50m of the site, no deliveries are proposed to occur on site, therefore the acceptable solution has not been met and facilities for commercial vehicles is to be assessed against the performance criteria. The commercial deliveries are proposed to occur with a low frequency of 7 deliveries per week with a duration ranging from 5 to 15 minutes. The frequency of delivery vehicles under existing approval was identified as once per day which equates to be the same number of deliveries as the current proposal. The existing approval identified deliveries occur on street and small delivery vehicles may use the on site parking area. Utilising the on street parking by the delivery vehicles is acceptable considering the frequency of delivery does not vary from the existing approval. Also garbage collection vehicles are proposed to access the site by reversing from Augusta Road to the bin collection area. Council's Traffic Engineer provide comment that "the low volume of the number of movements, and that is will be done by operators who do this type of task frequently I would be comfortable with the reversing movement" of the garbage collection vehicle. Council's Waste Services Officer has commented that "the waste management plan is satisfactory."

Acceptable Solution A1: - NON COMPLIANT

Commercial vehicle facilities for loading, unloading or manoeuvring must be provided on-site in accordance with Australian Standard for Off-street Parking, Part 2 : Commercial. Vehicle Facilities AS 2890.2:2002, unless:

(a) the delivery of all inward bound goods is by a single person from a vehicle parked in a dedicated loading zone within 50 m of the site; and

(b) the use is not primarily dependent on outward delivery of goods from the site.

Performance Criteria - P1:

Commercial vehicle arrangements for loading, unloading or

manoeuvring must not compromise the safety and convenience of vehicular traffic, cyclists, pedestrians and other road users.

- Acceptable, submitted documentation appears to satisfy this requirement

Based on the above assessment and given the submitted documentation, the facilities for commercial vehicles may be accepted under Performance Criteria P1:E6.7.13 of the Planning Scheme.

6.15.6 The proposal complies with the performance criterion.

6.16.1 Use of Signs - Part E E17.6.1 P1

6.16.1 The acceptable solution at clause E17.6.1 A1 requires signs to be permitted in Table E17.3 of the Planning Scheme.

6.16.2 The proposal includes 4 Awning Fascia Signs, 14 Window Signs, and 1 below awning sign, and 1 Sky sign.

6.16.3 The proposal does not comply with the acceptable solution; therefore assessment against the performance criterion is relied on.

6.16.4 The performance criterion at clause E17.6.1 P1 provides as follows:

A sign must be a discretionary sign in Table E.17.3.

6.16.5 The proposal includes 4 Awning Fascia Signs, 14 Window Signs, and 1 below awning sign, which are discretionary in Table E17.3, and therefore meet the performance criteria. However, the proposal also includes 1 Sky Sign, which is prohibited in Table E17.3, and as such does not meet the performance criteria and cannot be approved. A condition should be included in any permit granted stating that the sky sign is not approved.

6.16.6 The removal of the Sky Sign from the scope of works will also resolve a representor concern over the appropriateness of the sign in the location.

6.16.7 The proposal complies with the performance criterion, subject to the condition removing the Sky sign from the scope of works.

6.17 Use of Signs - Part E E17.6.1 P4

6.17.1 The acceptable solution at clause E17.6.1 A4 requires illuminated signs

not to be located within 30m of a residential use.

6.17.2 The proposal includes illuminated signage for the whole of the front and the west face of the awning, as well as an illuminated rooftop sign.

6.17.3 The proposal does not comply with the acceptable solution; therefore assessment against the performance criterion is relied on.

6.17.4 The performance criterion at clause E17.6.1 P4 provides as follows:

An illuminated sign within 30 metres of a residential use must not have an unreasonable impact upon the residential amenity of that use caused by light shining into windows of habitable rooms.

6.17.5 The proposal includes backlit, illuminated lettering in a non-illuminated background for the three awning fascia signs that do not extend above or below the awning, and a fully illuminated disk awning fascia sign that protrudes both above and below the awning. The proposal also includes an illuminated Sky Sign.

6.17.6 The Sky Sign is prohibited for the zone, and as such cannot be approved. Notwithstanding this, the location of the sign would result in an unreasonable amount of light spill into adjoining residences early in the morning. As such, were the sign not prohibited, it would not be appropriate for this particular sign to be illuminated.

6.17.7 The awning fascia signs are oriented and designed such that there will be minimal light spill or intrusion into nearby residences. As such, it is considered acceptable for the signs to be illuminated during the opening hours of the business. A condition should be included in any permit granted to this effect.

6.17.8 The proposal complies with the performance criterion, subject to conditions restricting the hours of illumination of the Awning Fascia Signs, and to the removal of the Sky Sign.

6.18 Standards for Signs - Part E E17.7.1 P1

6.18.1 The acceptable solution at clause E17.7.1 A1 requires all signs to be permitted for the zone, and to meet the development standards specified in table E17.2.

6.18.2 The proposal includes 4 Awning Fascia Signs, 14 Window Signs, and 1

below awning sign, 1 Sky Sign, and 1 Transom Sign.

6.18.3 The proposal does not comply with the acceptable solution; therefore assessment against the performance criterion is relied on.

6.18.4 The performance criterion at clause E17.7.1 P1 provides as follows:

A sign not complying with the standards in Table E17.2 or has discretionary status in Table E17.3 must satisfy all of the following:

(a) be integrated into the design of the premises and streetscape so as to be attractive and informative without dominating the building or streetscape;

(b) be of appropriate dimensions so as not to dominate the streetscape or premises on which it is located;

(c) be constructed of materials which are able to be maintained in a satisfactory manner at all times;

(d) not result in loss of amenity to neighbouring properties;

(e) not involve the repetition of messages or information on the same street frontage;

(f) not contribute to or exacerbate visual clutter;

(g) not cause a safety hazard.

6.18.5 The Transom Sign is permitted in Table E17.3. The transom Sign is 3.4m wide by 0.79m high, which meets the acceptable standard in table E17.2.

6.18.6 The 4 Awning Fascia Signs, 14 Window Signs, and the below awning sign are discretionary in Table E17.3.

- The Awning Fascia Sign on the western (side) awning is 11m long by 1m high (the height of the awning), with 320mm high illuminated lettering which projects up to 50mm from the face of the awning, which is discretionary in Table E17.2.
- The side Awning Fascia Signs on the northern (front) awning are 5.18m and 5.56m long, 1m high (the height of the awning), with 320mm high illuminated lettering which projects up to 50mm from the face of the awning, which is discretionary in Table

E17.2.

- The central Awning Fascia Sign on the northern (front) awning is a 1.8m diameter disc, which projects 200mm below the awning, and 600mm above the awning, which is 100mm deep, with up to 50mm deep, 400mm high, protruding lettering, all of which is illuminated, which is discretionary in Table E17.2.
- The window signs to the northern (front) facade windows (excluding the main entry doors) all exceed 10% coverage of the windows, which is discretionary in Table E17.2.
- The window signs on the main front doors occupy less than 10% of the doors, and are therefore permitted in Table E17.3.
- The southern window sign on the western facade occupies the entire window and is a marketing image representing the function of the site. This is discretionary in Table E17.2.
- The Below Awning Sign does not project beyond the awning, has a clearance of 2.4m above the footpath, has a height (depth) of 600mm, and a width of 140mm, and is illuminated, which is discretionary in Table E17.2.

- 6.18.7 The Awning Fascia Signs are all consistent with others in the immediate area in terms of scale, and design. There is no clutter created through their positioning or messaging for the building facade or wider streetscape. The direction of the illumination is such that they will not unreasonably impact the amenity of surrounding residential properties. These signs are considered to satisfy the performance criteria.
- 6.18.8 The front Window Signs are all clear vinyl with either word or decal overlays images. There is a consistency to the pattern of the location, and the size of the design that ensures that they do not present an unreasonable visual clutter to the building or its surrounds. These signs satisfy the performance criteria.
- 6.18.9 The southern window sign on the western building facade is sufficiently removed from the street that it is not considered to represent visual clutter for the building facade or its surrounds. It is the only sign of this graphic on the building, so there is no repetition of message. This sign satisfies the performance criteria.
- 6.18.10 The Below Awning Sign is consistent with the surrounding businesses. It does not involve repetition of messaging as the sign is oriented to direct the message to the sides, not the front like the other signs with the similar graphic. The location of the sign is such that it will not result in an unreasonable loss of residential amenity to nearby properties. This sign

satisfies the performance criteria

- 6.18.11 The Sky Sign is prohibited in Table E17.3.
- 6.18.12 Notwithstanding the prohibited status of the sign type in the zone, an assessment of the performance against the performance criteria is also provided:
- 6.18.13 There are no examples of sky signs projecting this far above the roof line in the surrounding area. As such the sign is not considered compatible with the surrounds. This is exacerbated by the location of the application site within the surrounding area. This site is directly adjacent to residential neighbours, with the potential for light spill early in the morning presenting an unreasonable loss of residential amenity for these surrounding properties. Further, the repetition of message, and positioning of the sign directly behind the disc Awning Fascia Sign proposed will result in unreasonable visual clutter for the site. As such, were the sign not prohibited in the zone, it would still fail to satisfy the performance criteria, and require removal from the proposed development.
- 6.18.14 The proposal complies with the performance criterion, with the abovementioned condition requiring the removal of the Sky Sign from the works.
- 6.19 Standards for Signs - Part E E17.7.1 P2
- 6.19.1 The acceptable solution at clause E17.7.1 A2 requires a maximum of 3 signs for the 14m frontage, with no more than one of any sign type, and no more than one window sign per window.
- 6.19.2 The proposal includes three Awning Fascia Signs, one Below Awning Sign, one Transom Sign, 13 Window Signs, and one Sky Sign to the front facade.
- 6.19.3 The proposal does not comply with the acceptable solution; therefore assessment against the performance criterion is relied on.
- 6.19.4 The performance criterion at clause E17.7.1 P2 provides as follows:

The number of signs per business per street frontage must:

(a) minimise any increase in the existing level of visual clutter in

the streetscape; and where possible, shall reduce any existing visual clutter in the streetscape by replacing existing signs with fewer, more effective signs;

(b) reduce the existing level of visual clutter in the streetscape by replacing, where practical, existing signs with fewer, more effective signs;

(c) not involve the repetition of messages or information.

- 6.19.5 The Awning Fascia Signs are all consistent with others in the immediate area in terms of scale, and design. There is no clutter created through their positioning or messaging for the building facade or wider streetscape. Were it not for the central disc, it could be argued that it is a single sign, as the message is complimentary through the three signs, without repetition. These signs satisfy the performance criteria.
- 6.19.6 The Below Awning Sign does not directly compete with other signs on the facade in terms of scale, location or message. It is oriented for an audience either side of the property, and not for an audience directly opposite the site like the other signs on the facade. As such, it is considered that the sign does not contribute to visual clutter, and therefore satisfies the performance criteria.
- 6.19.7 The Transom Sign is used to identify the entry to the building, and as such is considered appropriate. The messaging on the transom sign is not replicated in this view plane. As such, there is no repetition of message and no increase in visual clutter as a result of this sign.
- 6.19.8 The Window Signs are all clear vinyl with either a small word, or a small decal / image. There is a consistency to the pattern of the location, and the size of the design that ensures that they do not present an unreasonable visual clutter to the building or its surrounds. These signs satisfy the performance criteria.
- 6.19.9 Notwithstanding its prohibited status in the zone, the Sky Sign fails to satisfy the performance criteria. The repetition of message, and positioning of the sign directly behind the disc Awning Fascia Sign proposed will result in unreasonable visual clutter for the site.
- 6.19.10 The proposal complies with the performance criterion, subject to the abovementioned condition requiring the removal of the Sky Sign.

7. Discussion

- 7.1 Planning approval is sought for Partial Demolition and Alterations, at 98 and 100 Augusta Road, Lenah Valley.
- 7.2 The application was advertised and received six (6) representations. The representations raised concerns including noise, signs, privacy, the proposed internal fit-out, and the inclusion of 100 Augusta Road in the application site.
- 7.3 The proposal has been assessed against the relevant provisions of the planning scheme and is considered to perform well.
- 7.4 The proposal has been assessed by other Council officers, including the Council's Development Engineer, and Environmental Health Officer. The officers have raised no objection to the proposal, subject to conditions.
- 7.5 The proposal is recommended for approval.

8. Conclusion

- 8.1 The proposed Partial Demolition and Alterations, at 98 and 100 Augusta Road, Lenah Valley satisfies the relevant provisions of the *Hobart Interim Planning Scheme 2015*, and as such is recommended for approval.

9. Recommendations

That: Pursuant to the *Hobart Interim Planning Scheme 2015*, the Council approve the application for Partial Demolition and Alterations, at 98 and 100 Augusta Road, Lenah Valley for the reasons outlined in the officer's report and a permit containing the following conditions be issued:

GEN

The use and/or development must be substantially in accordance with the documents and drawings that comprise PLN-22-236 - 98 and 100 AUGUSTA ROAD LENA VALLEY TAS 7008 - Final Planning Documents, except where modified below.

Reason for condition

To clarify the scope of the permit.

PLN 10

All illuminated signs must not be flashing or intermittently illuminated. Signs are only permitted to be illuminated during the permitted opening hours of the site, and must be switched off at all other times.

Reason for condition

To clarify the scope of the permit.

PLN 11

The Sky Sign is not approved and must be omitted from the final signage scheme for the site.

Reason for condition

To ensure compliance with the Signs Code of the *Hobart Interim Planning Scheme 2015*.

PLN 14

The noise generated by the use of the site must not cause environmental harm when measured at the site's southern and eastern boundaries.

Reason for the condition

To ensure noise emissions do not cause environmental harm and do not have an unreasonable impact on residential amenity.

PLN 17

All external lighting on the site must operate in accordance with Australian Standard AS 4282 - Control of the obtrusive effects of outdoor lighting.

External lighting (other than security lighting) must only be illuminated during the approved hours of operation (7:00am to 9:30pm Monday to Sunday). External lighting must be turned off at all other times.

Reason for condition

To ensure that the non-residential use does not unreasonably impact residential amenity.

PLN 6

The approved hours of operation are Monday – Sunday 6am – 6pm.

Advice: The planning scheme defines 'hours of operation' as 'the hours that a business is open to the public or conducting activities related to the business, not including routine activities normally associated with opening and closing for business'.

Reason for condition

To ensure that non-residential use does not unreasonably impact on residential amenity

PLN s2

Commercial deliveries to, and garbage collection from, the premises are prohibited:

- before 7:00am and after 6:00pm Monday to Friday, and
- before 9:00am and after 6:00pm on weekends and public holidays.

Reason for condition

To avoid unreasonable impact upon the residential amenity through commercial vehicle movements that are unreasonable in their timing, duration or extent, consistent with Clause 11.3.1 P1 and P4 of the Hobart Interim Planning Scheme 2015.

PLN s3

The removal of hard waste (e.g glass and cans, etc) to garbage receptacles located outside the building is prohibited before 7:00am and after 6:00pm Monday to Friday and before 9:00am and after 6:00pm on weekends and public holidays.

Reason for condition

To avoid unreasonable impact upon surrounding residential amenity through noise emissions that are unreasonable in their timing, duration or extent, consistent with Clause 11.3.1 P1 of the Hobart Interim Planning Scheme 2015.

ENG sw1

All stormwater from the proposed development (including but not limited to: roofed areas, ag drains, retaining wall ag drains and impervious surfaces such as driveways and paved areas) must be drained to the Council's stormwater infrastructure prior to first occupation or commencement of use (whichever occurs first).

Any private or private shared stormwater system passing through third-party land must have sufficient receiving capacity.

Advice:

Under section 23 of the Urban Drainage Act 2013 it is an offence for a property owner to direct stormwater onto a neighbouring property.

Reason for condition

To ensure that stormwater from the site will be discharged to a suitable Council approved outlet.

ENG 3a

The on site car parking spaces layout area must be provided in accordance with the following documentation which forms part of this permit: Associated Projects Drawings A02 version 7 and A04 version 7 dated 6 July 2022

received by the Council on 6 July 2022.

Any departure from that documentation and any works which are not detailed in the documentation must be either:

- (a) approved by the Director City Life, via a condition endorsement application; or
- (b) designed and provided in accordance with Australian Standard AS/NZ 2890.1:2004.

The works required by this condition must be completed prior to commencement of use.

Reason for condition

To ensure the safety of users of the access and parking module, and compliance with the relevant Australian Standard.

ENG 4

The parking module (car parking spaces, aisles and manoeuvring area) provided must be sealed (spray seal, asphalt, concrete, pavers or equivalent Council approved) and surface drained to the Council's stormwater infrastructure prior to the commencement of use.

Reason for condition

To ensure the safety of users of the access driveway and parking module, and that it does not detract from the amenity of users, adjoining occupiers or the environment by preventing dust, mud and sediment transport.

ENG 5

The number of car parking spaces to be provided on the site is five (5) unless approved otherwise. The on site car parking spaces provided are to be for employee use only.

Prior to commencement of use parking spaces must be delineated by means of white or yellow lines 80mm to 100mm wide, or white or yellow pavement markers in accordance with Australian Standards AS/NZS 2890.1 2004.

Reason for condition

To ensure safe and efficient parking adequate to provided for the use.

ENG 7

The number of bicycle parking spaces to be provided on the site is six (6) unless approved otherwise. Four (4) of the spaces are for employee use and two (2) spaces are for customer use.

Bicycle parking spaces shall be in accordance with AS2890.3-2015 and provided prior to commencement of use.

Reason for condition

To ensure suitable bicycle parking facilities are provided.

ENG 1

Any damage to council infrastructure resulting from the implementation of this permit, must, at the discretion of the Council:

1. **Be met by the owner by way of reimbursement (cost of repair and reinstatement to be paid by the owner to the Council); or**
2. **Be repaired and reinstated by the owner to the satisfaction of the Council.**

A photographic record of the Council's infrastructure adjacent to the subject site must be provided to the Council prior to any commencement of works.

A photographic record of the Council's infrastructure (e.g. existing property service connection points, roads, buildings, stormwater, footpaths, driveway crossovers and nature strips, including if any, pre-existing damage) will be relied upon to establish the extent of damage caused to the Council's infrastructure during construction. In the event that the owner/developer fails to provide to the Council a photographic record of the Council's infrastructure, then any damage to the Council's infrastructure found on completion of works will be deemed to be the responsibility of the owner.

Reason for condition

To ensure that any of the Council's infrastructure and/or site-related service connections affected by the proposal will be altered and/or reinstated at the owner's full cost.

ENV 1

Sediment and erosion control measures sufficient to prevent sediment from leaving the site must be installed prior to any disturbance of the site, and maintained until all areas of disturbance have been stabilized or re-vegetated.

Advice:

For further guidance in preparing a Soil and Water Management Plan – in accordance with Fact sheet 3 Derwent Estuary Program click [here](#).

Reason for condition

To avoid the sedimentation of roads, drains, natural watercourses, Council land that could be caused by erosion and runoff from the development, and to comply with relevant State legislation.

ADVICE

The following advice is provided to you to assist in the implementation of the planning permit that has been issued subject to the conditions above. The advice is not exhaustive and you must inform yourself of any other legislation, by-laws, regulations, codes or standards that will apply to your development under which you may need to obtain an approval. Visit the Council's [website](#) for further information.

Prior to any commencement of work on the site or commencement of use the following additional permits/approval may be required from the Hobart City Council.

CONDITION ENDORSEMENT

If any condition requires that further documents are submitted and approved, you will need to submit the relevant documentation to satisfy the condition via the Condition Endorsement Submission on Council's [online services e-planning portal](#). Detailed instructions can be found [here](#).

A fee of 2% of the value of the works for new public assets (stormwater infrastructure, roads and related assets) will apply for the condition endorsement application.

Once approved, the Council will respond to you via email that the condition has been endorsed (satisfied).

Where building approval is also required, it is recommended that documentation for condition endorsement be submitted well before submitting documentation for building

approval. Failure to address condition endorsement requirements prior to submitting for building approval may result in unexpected delays.

BUILDING PERMIT

You may need building approval in accordance with the *Building Act 2016*. Click [here](#) for more information.

This is a Discretionary Planning Permit issued in accordance with section 57 of the *Land Use Planning and Approvals Act 1993*.

PLUMBING PERMIT

You may need plumbing approval in accordance with the *Building Act 2016*, *Building Regulations 2016* and the National Construction Code. Click [here](#) for more information.

STORMWATER

Please note that in addition to a building and/or plumbing permit, development must be in accordance with the Hobart City Council's Infrastructure By law. Click [here](#) for more information.

RIGHT OF WAY

The private right of way must not be reduced, restricted or impeded in any way, and all beneficiaries must have complete and unrestricted access at all times.

You should inform yourself as to your rights and responsibilities in respect to the private right of way particularly reducing, restricting or impeding the right during and after construction.

NOISE REGULATIONS

Click [here](#) for information with respect to noise nuisances in residential areas.

WASTE DISPOSAL

It is recommended that the developer liaise with the Council's Cleansing and Solid Waste Unit regarding reducing, reusing and recycling materials associated with demolition on the site to minimise solid waste being directed to landfill.

Further information regarding waste disposal can also be found on the Council's

[website](#).

FEES AND CHARGES

Click [here](#) for information on the Council's fees and charges.

DIAL BEFORE YOU DIG

Click [here](#) for dial before you dig information.



(Helen Ayers)

Development Appraisal Planner

As signatory to this report, I certify that, pursuant to Section 55(1) of the Local Government Act 1993, I hold no interest, as referred to in Section 49 of the Local Government Act 1993, in matters contained in this report.



(Karen Abey)

Manager Development Appraisal

As signatory to this report, I certify that, pursuant to Section 55(1) of the Local Government Act 1993, I hold no interest, as referred to in Section 49 of the Local Government Act 1993, in matters contained in this report.

Date of Report: 11 August 2022

Attachment(s):

Attachment B - CPC Agenda Documents

Sheet List	
SHEET NAME	SHEET NUMBER
COVER	A00
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SITE PLAN	A02
EXISTING FLOOR PLAN	A03
PLN-17-480 AS-BUILT AMENDMENTS	A04
PROPOSED DEMOLITION PLAN	A05
PROPOSED FLOOR PLAN	A06
FLOOR FINISHES PLAN	A07
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LIGHTING PLAN	A10
REFLECTED CEILING PLAN	A11
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SIGNAGE	A28
SIGNAGE	A29
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 **ASSOCIATED PROJECTS** COMMERCIAL BUILDERS,
PROJECT MANAGERS,
PLANNERS & DESIGNERS
T 03 8787 3000 | F 03 8787 3025
48-58 Cyber Loop, Dandenong South VIC 3175

BANJO'S
LENAH VALLEY
98 AUGUSTA RD, LENAH VALLEY
TASMANIA 7008



SUBJECT SITE
98 AUGUSTA ROAD, LENA VALLEY, 7008, TASMANIA



**ASSOCIATED
PROJECTS**

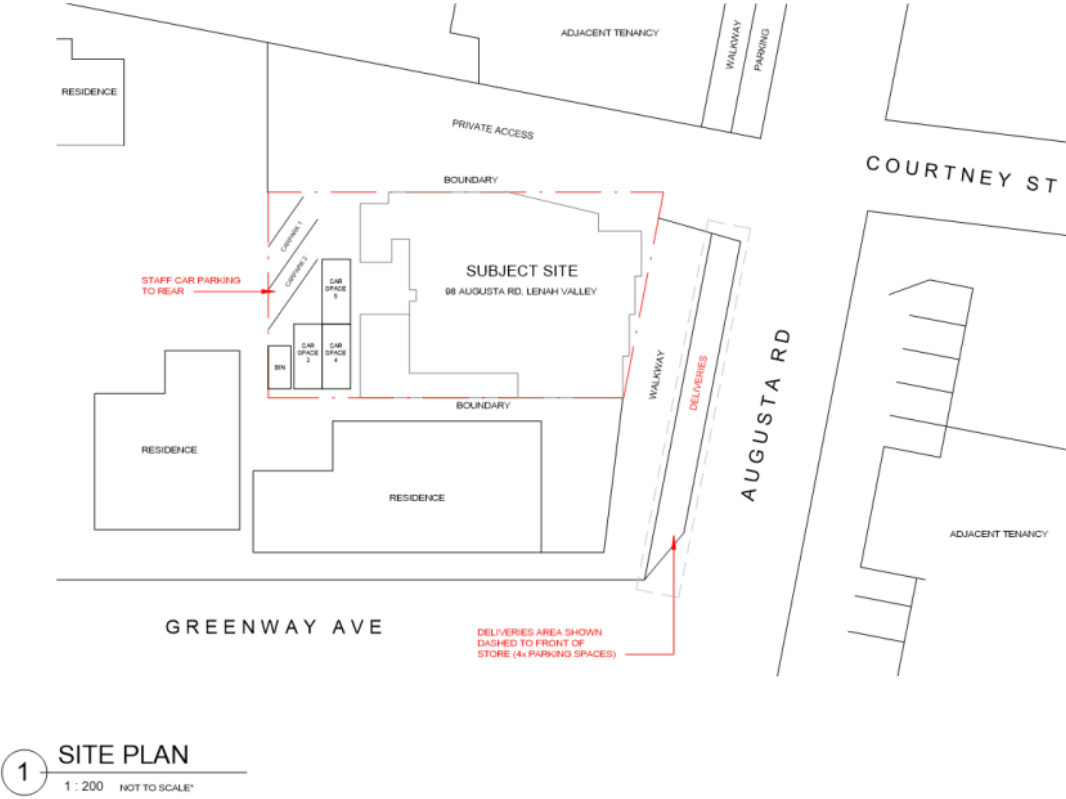
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No.	Date	Description
1	15/02	SERVICES FIRST PLOT
2	24/02	INITIAL DOCUMENTATION SET
3	08/03	AMENDMENTS VIA FEEDBACK
4	18/03	AMENDMENTS VIA FEEDBACK
5	09/05	HYDRAULICS UPDATED
6	24/05	AMENDMENTS VIA FEEDBACK
7	06/07	FOR CONSTRUCTION

BANJO'S
LENAH VALLEY
98 AUGUSTA RD, LENA VALLEY,
TASMANIA 7008

SITE LOCATION		
Project number	TBC	A01
Date	02/15/22	
Drawn by	CC	
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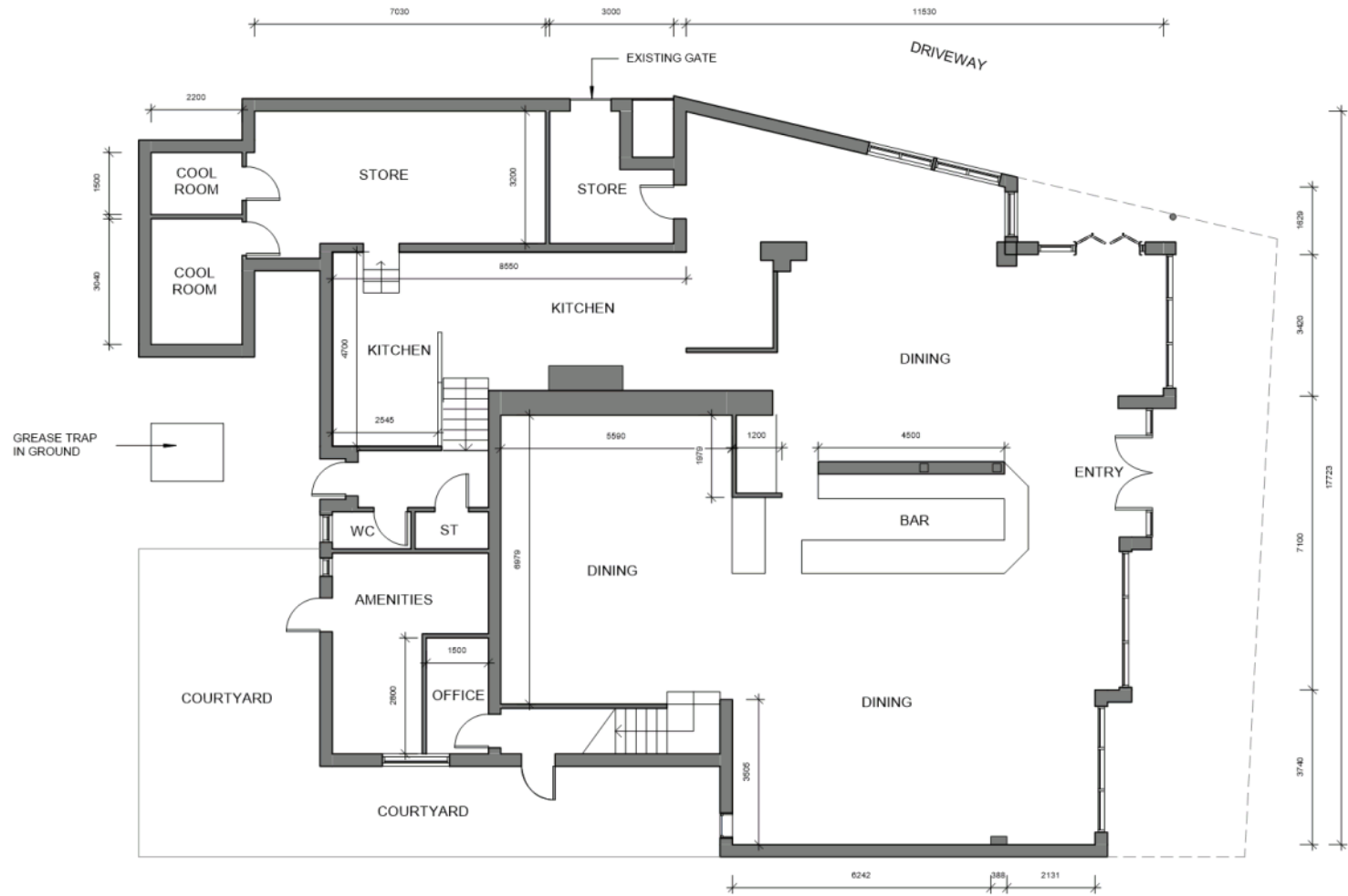
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TASMANIA 7008



SITE PLAN

Project number	TBC	A02
Date	02/15/22	
Drawn by	CC	
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1 EXISTING GROUND FLOOR
1 : 100



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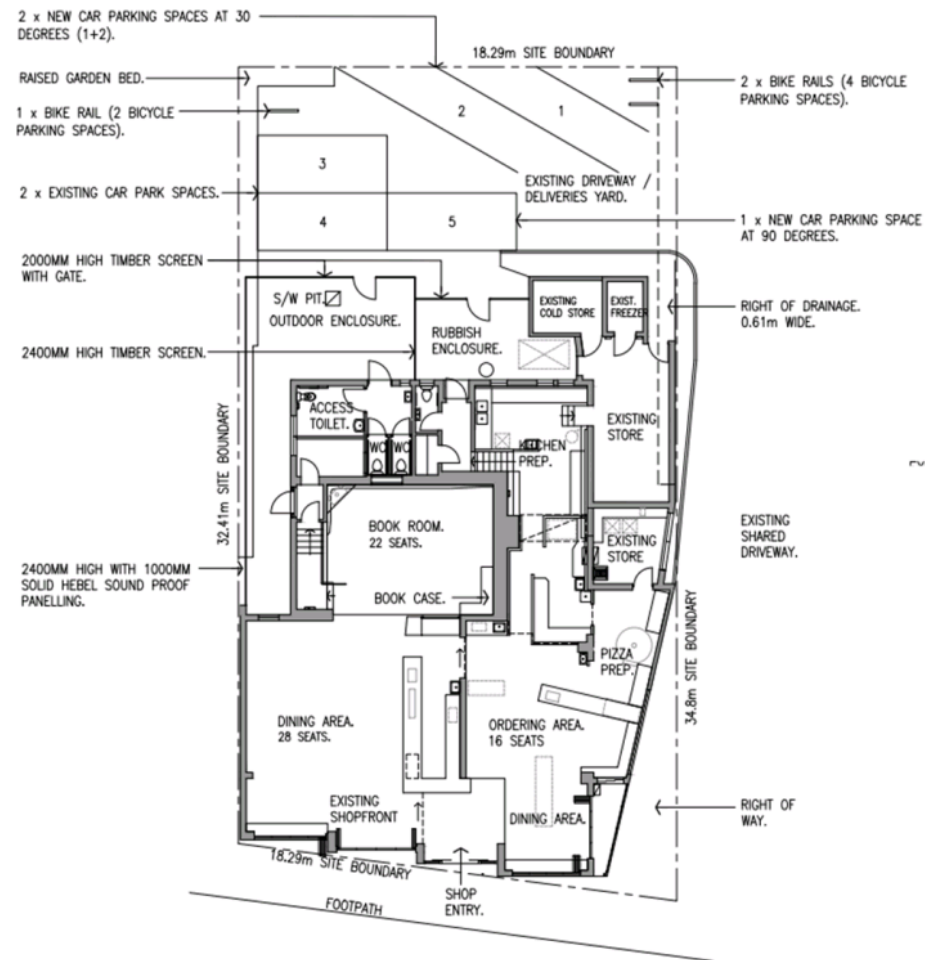
BANJO'S
LENAH VALLEY

98 AUGUSTA RD, LENA VALLEY,
TASMANIA 7008

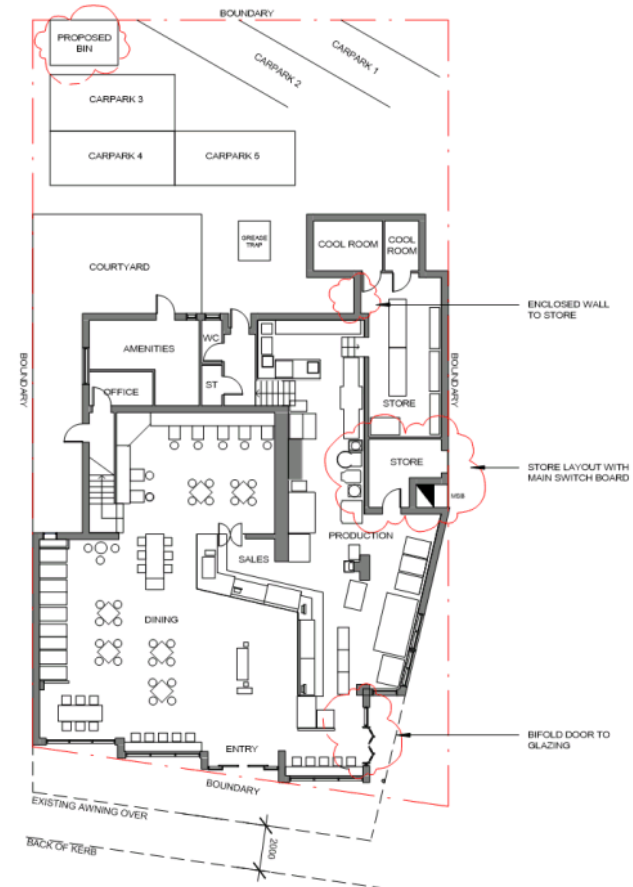


EXISTING FLOOR PLAN

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Date	02/15/22	
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PLANNING AS PER 2018 (NOT TO SCALE)



AS BUILT AMENDMENTS SINCE 2018 PLANNING



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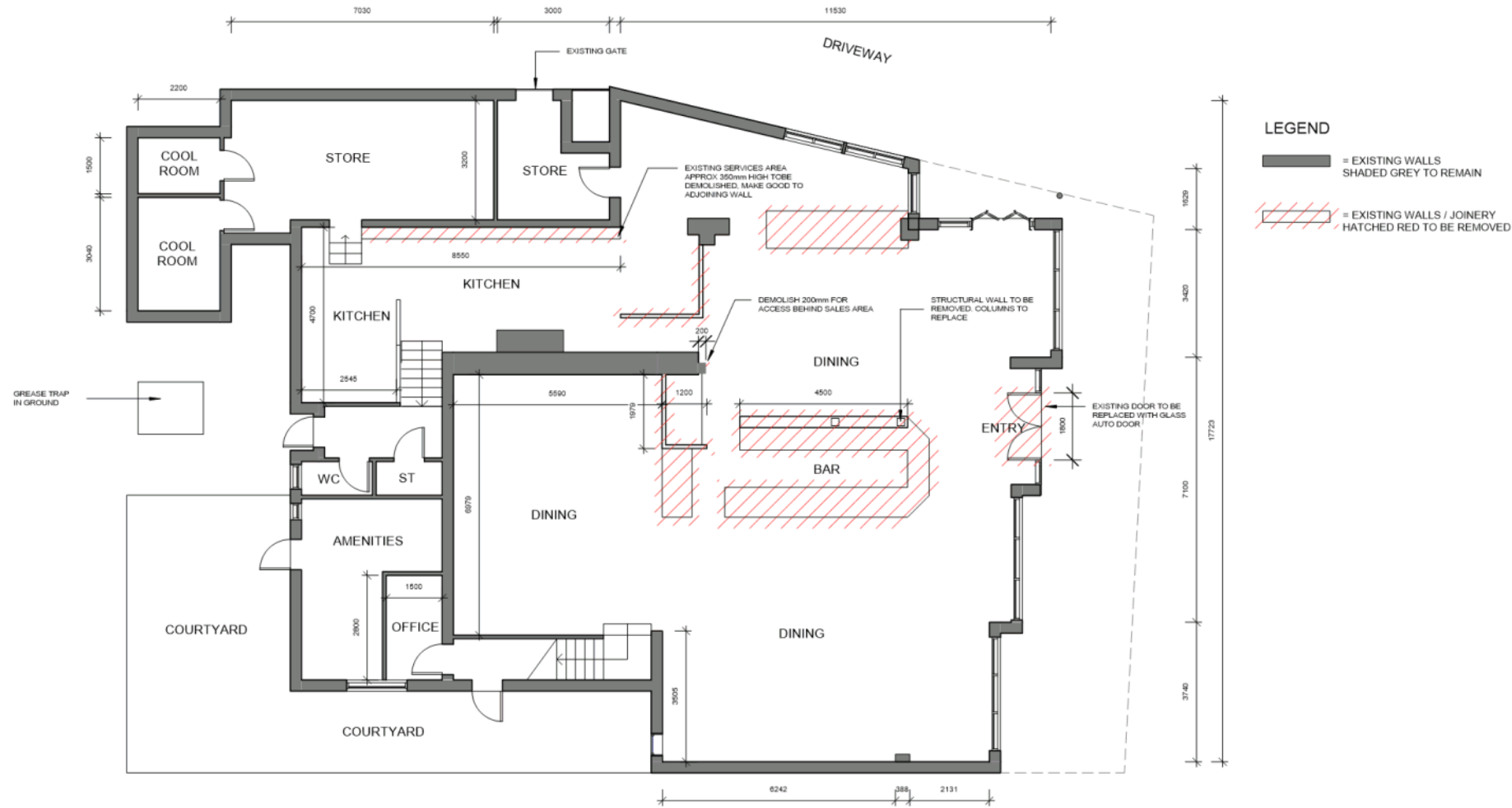
BANJO'S

LENAH VALLEY

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PLN-17-480 AS-BUILT AMENDMENTS

Project number	TBC	A04
Date	02/15/22	
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1 PROPOSED DEMOLITION
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BANJO'S
LENAH VALLEY
98 AUGUSTA RD, LENAH VALLEY,
TASMANIA 7008






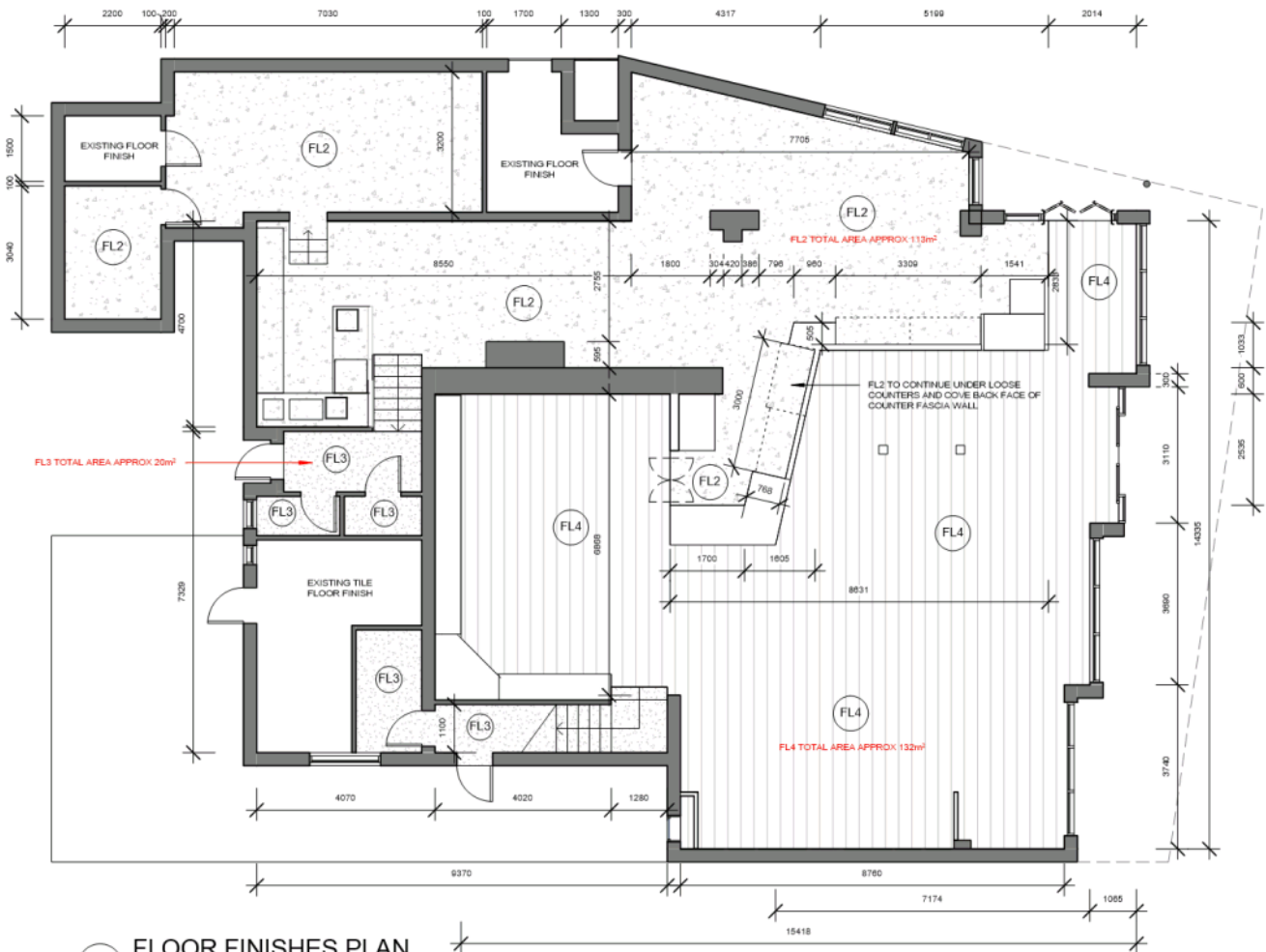
PROPOSED DEMOLITION PLAN

Project number	TBC	A05	
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 <p>ASSOCIATED PROJECTS</p> <p>COMMERCIAL BUILDERS, PROJECT MANAGERS, PLANNERS & DESIGNERS</p> <p>T 03 8787 3000 F 03 8787 3025 48-58 Cyber Loop, Dandenong South VIC 3175</p>	<table> <tr> <th>No.</th><th>Date</th><th>Description</th></tr> <tr> <td>1</td><td>15/02</td><td>SERVICES FIRST PLOT</td></tr> <tr> <td>2</td><td>24/02</td><td>INITIAL DOCUMENTATION SET</td></tr> <tr> <td>3</td><td>08/03</td><td>AMENDMENTS VIA FEEDBACK</td></tr> <tr> <td>4</td><td>18/03</td><td>AMENDMENTS VIA FEEDBACK</td></tr> <tr> <td>5</td><td>09/05</td><td>HYDRAULICS UPDATED</td></tr> <tr> <td>6</td><td>24/05</td><td>AMENDMENTS VIA FEEDBACK</td></tr> <tr> <td>7</td><td>06/07</td><td>FOR CONSTRUCTION</td></tr> </table>	No.	Date	Description	1	15/02	SERVICES FIRST PLOT	2	24/02	INITIAL DOCUMENTATION SET	3	08/03	AMENDMENTS VIA FEEDBACK	4	18/03	AMENDMENTS VIA FEEDBACK	5	09/05	HYDRAULICS UPDATED	6	24/05	AMENDMENTS VIA FEEDBACK	7	06/07	FOR CONSTRUCTION	<p>BANJO'S</p> <p>LENAH VALLEY</p> <p>98 AUGUSTA RD, LENA VALLEY, TASMANIA 7008</p>	 <p>PROPOSED FLOOR PLAN</p> <table> <tr> <td>Project number</td><td>TBC</td><td rowspan="4">A06</td></tr> <tr> <td>Date</td><td>02/15/22</td></tr> <tr> <td>Drawn by</td><td>CC</td></tr> <tr> <td>Checked by</td><td>ML</td></tr> </table> <p>Scale @ A3 1 : 100</p>	Project number	TBC	A06	Date	02/15/22	Drawn by	CC	Checked by	ML
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CODE	FINISH	SPECIFICATIONS	SUPPLIER
FL2		SKINFLOOR 21 PURGREEN PLACED AT 4.5 - 6mm, SMOOTH OPTION OR SKINFLOOR	SKIN AUSTRALIA
FL3		VINYL SHEET FLOORING PURBO LUMESTEP 3mm STONE RANGE COLOUR: ECOL CONCRETE CODE: 17122 SUP: RATING R12 150mm INTERL. COVERED SKIRTING TO ALL WALLS	CLIENT TO CONFIRM
FL4		HARDENED VINYL PLANK FLOORING RANGE: VINO BOUGH COLOUR: CLASSIC OAK CODE: V300007 SUP: RATING R12	CLIENT TO CONFIRM



1 FLOOR FINISHES PLAN
1 : 100



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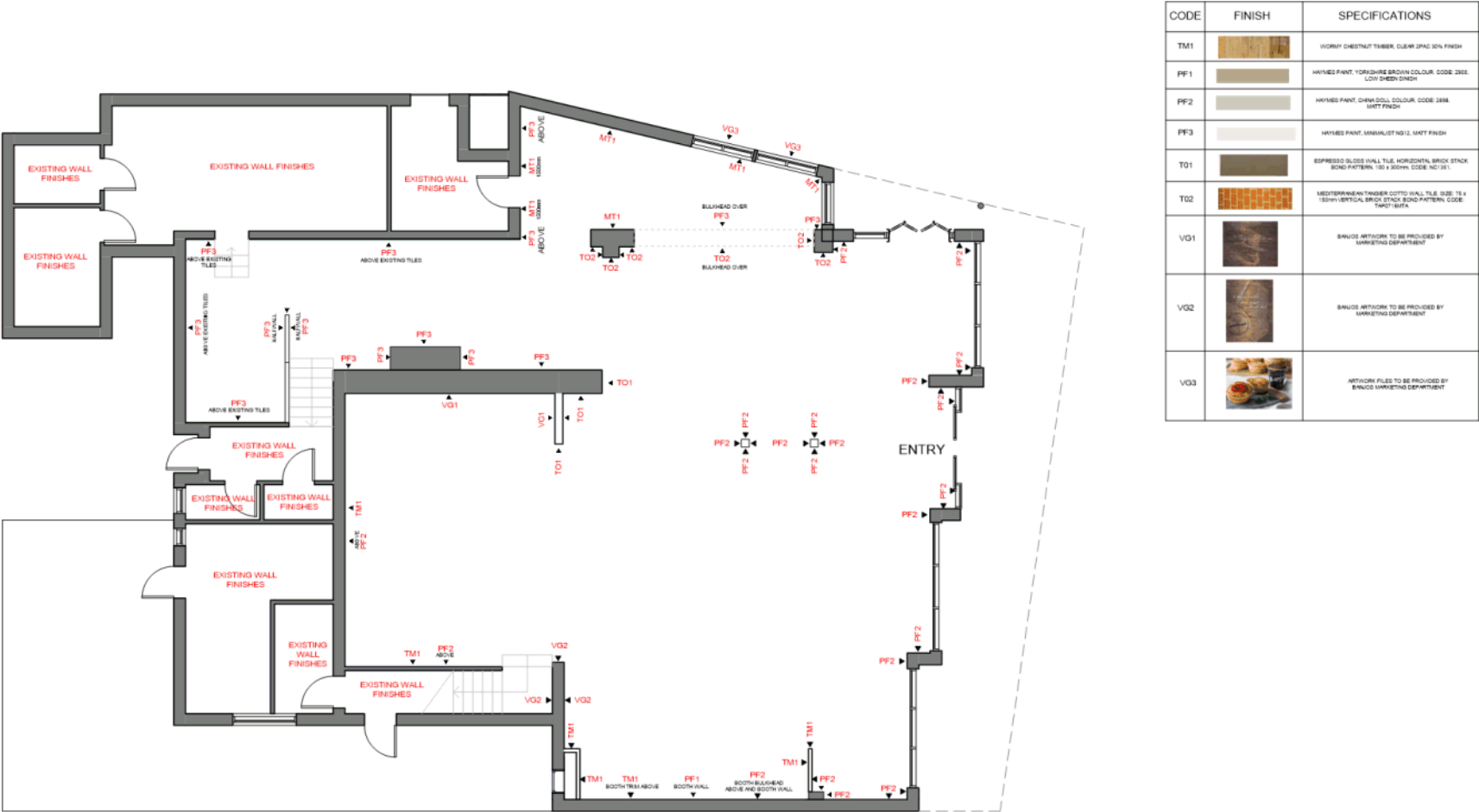
BANJO'S
LENAH VALLEY

98 AUGUSTA RD, LENA VALLEY,
TASMANIA 7008



FLOOR FINISHES PLAN

Project number	TBC	A07
Date	02/15/22	
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1 WALL FINISHES PLAN
1 : 100

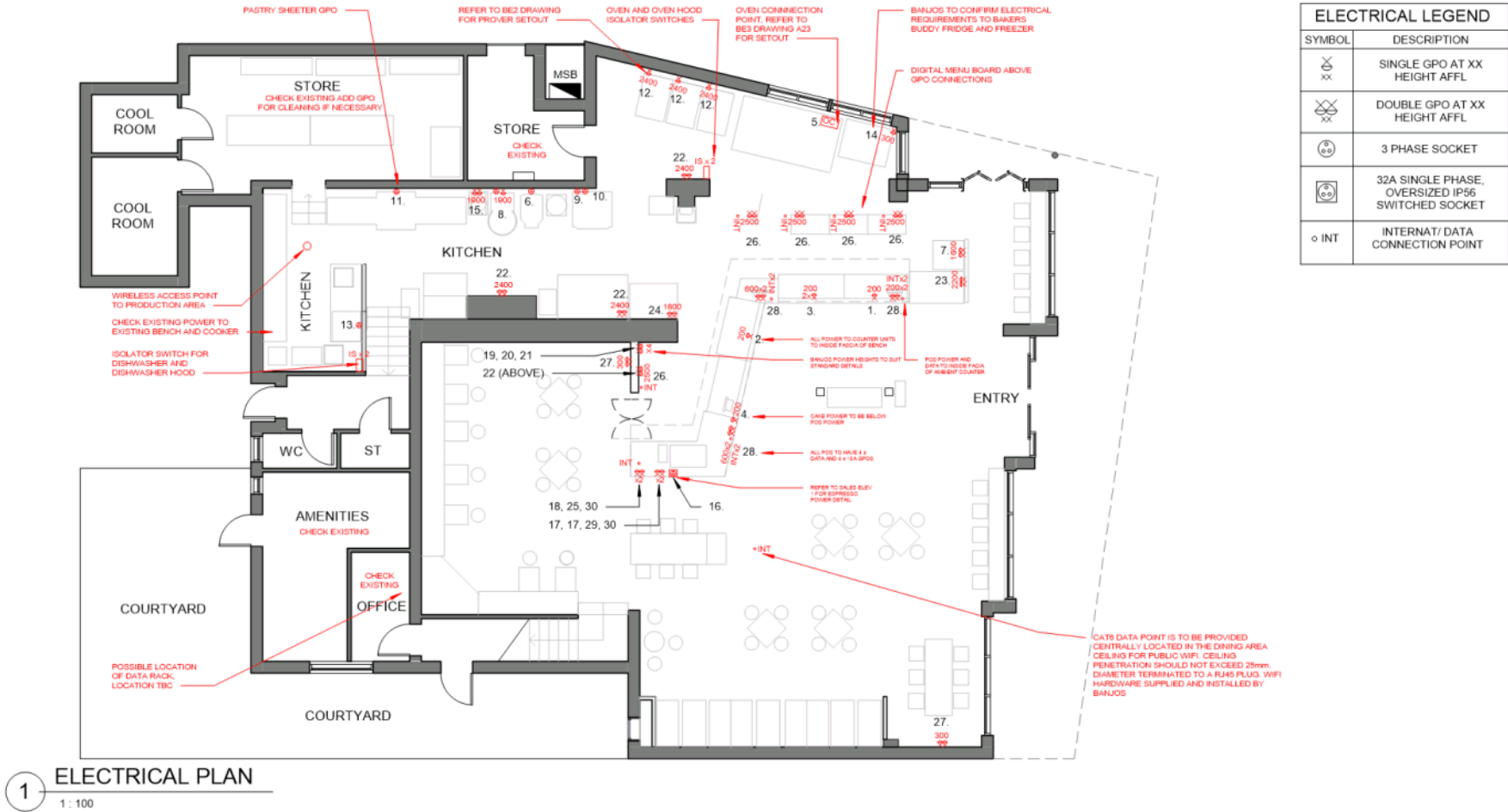
ASSOCIATED PROJECTS COMMERCIAL BUILDERS,
PROJECT MANAGERS,
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BANJO'S
LENAH VALLEY
98 AUGUSTA RD, LENAH VALLEY,
TASMANIA 7008

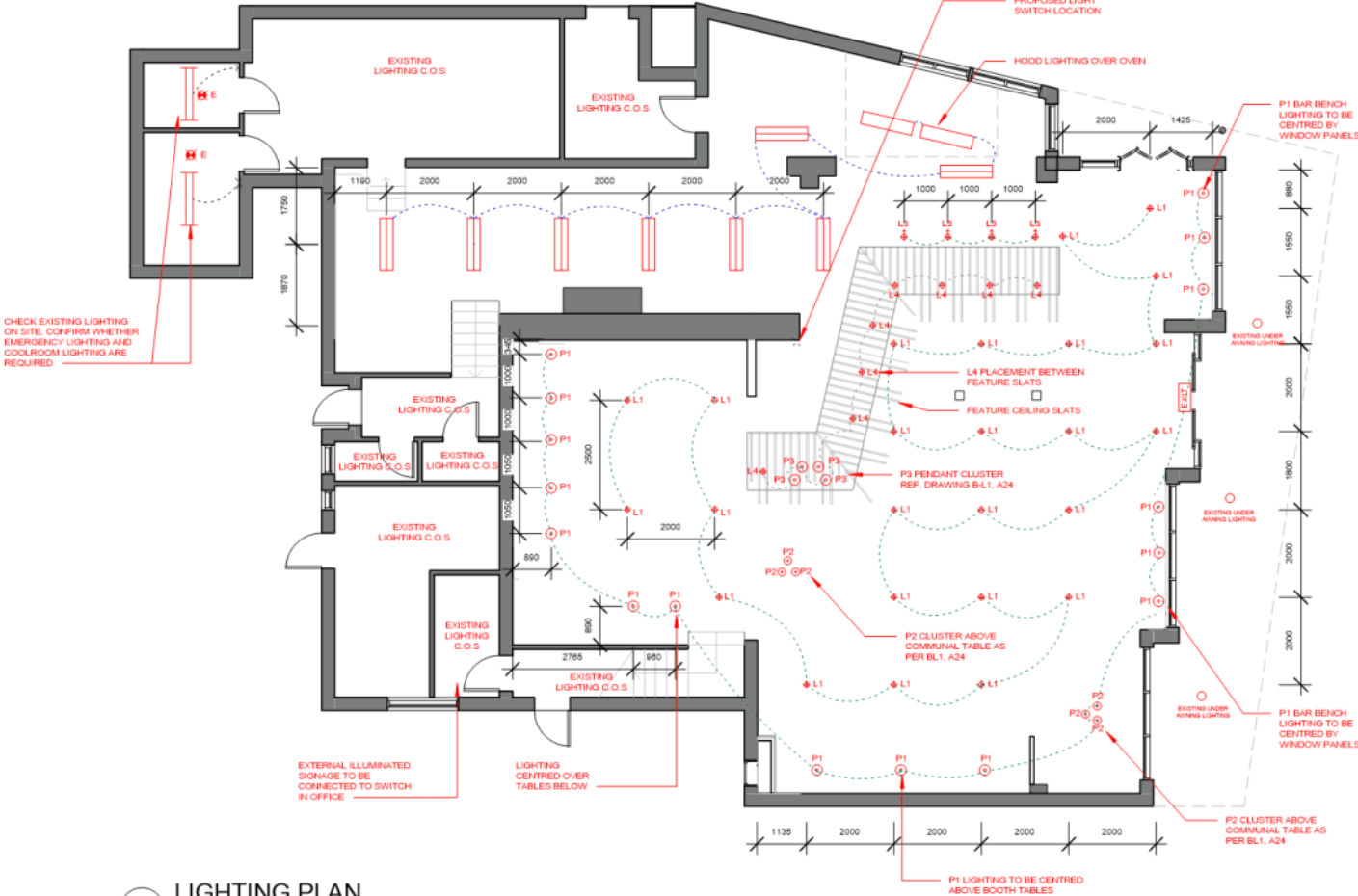
WALL FINISHES PLAN
Project number TBC
Date 02/15/22
Drawn by CC
Checked by ML

A08
Scale @ A3 1 : 100



ITEM	POWER REQUIREMENTS	ITEM	POWER REQUIREMENTS	ITEM	POWER REQUIREMENTS
1. AMBIENT COUNTER 1000mm	CIRCUIT: 20amp SINGLE PHASE (10amp SINGLE PHASE)	11. PASTRY SHEETER - FOOTING CONTROL	CIRCUIT: 20amp 3 PHASE (10 + 10 + 10, 3 PHASE)	21. TOASTER & SLICE KITCHEN/BAKING	STANDARD SPD
2. SANDWICH COUNTER 1000mm	CIRCUIT: 20amp SINGLE PHASE (10amp SINGLE PHASE)	12. PROOFER	CIRCUIT: 10amp SINGLE PHASE (240V, 50A, 16amp, 16amp, 16amp)	22. PEST CONTROL	STANDARD SPD TO BE PROVIDED AT EACH FLY KILLER UNIT LOCATION
3. HOT FOOD COUNTER	CIRCUIT: 3x10amp SINGLE PHASE CIRCUITS (30amp, 2x10amp SINGLE PHASE)	13. DISHWASHER (WASH/TECH FILE)	CIRCUIT: 20amp 3 PHASE (10 + 10 + 10, 3 PHASE, 16amp, 16amp, 16amp)	23. DRINKS FRIDGE AND SOUNDCLOUGH	STANDARD SPD
4. CAFE COUNTER - KITCHEN	CIRCUIT: 20amp SINGLE PHASE (10amp SINGLE PHASE PLUS)	14. BAKERY BUDDY FRIDGE	CIRCUIT: 20amp SINGLE PHASE (220-240V, 50A, STANDARD SPD)	24. BAKERY BUDDY FREEZER	CIRCUIT: 20amp SINGLE PHASE (220-240V, 50A, STANDARD SPD)
5. HOTEL 3 PHASE COVEN	CIRCUIT: 100amp 3 PHASE WITH ISOLATION SWITCH (10 + 10 + 10, 3 PHASE, 60amp)	15. KEEPER PLANETARY SHINE 20L	CIRCUIT: 20amp SINGLE PHASE (220V, 50A, 10amp, 10amp, 10amp)	25. BLIMP SCREEN (WITH DATA)	STANDARD SPD
6. BUN OVEN/ROUNDER - PORTLAND	CIRCUIT: 20amp 3 PHASE (10 + 10 + 10, 3 PHASE, 10amp, 10amp, 10amp)	16. L. MARZOTTO LINEAR 3.4V GROUP HIGH CUT - CHROME COLOUR IC	32 AMP SINGLE PHASE PSE OVERSIZE SOCKET CONNECTION PER MACHINE	26. DIGITAL MENU BOARD	DOUBLE SPD PER BOARD AT 220V AFFL TO CEILING BEHIND
7. BLEND SLUR	CIRCUIT: 10amp SINGLE PHASE (220V, 10 + 10 + 10, 3 PHASE, 10amp, 10amp, 10amp)	17. UBERALK - SILK DISPENSER SETS	STANDARD SPD	27. CLEANING SPD	STANDARD SPD
8. BLEND SPIN - COUGH-HIGH SPIN	CIRCUIT: 20amp 3 PHASE (10 + 10 + 10, 3 PHASE, 10amp, 10amp, 10amp)	18. COFFEE GRINDER UNDER HANGER ELECTRONICS	STANDARD SPD, 400V SINGLE PHASE	28. POS	2x 10amp DOUBLE SPD AND 2x DATA POINT
9. BLEND HOLDER - SMALL - MARQUE 1000H	CIRCUIT: 20amp 3 PHASE (10 + 10 + 10, 3 PHASE, 10amp, 10amp, 10amp)	19. MACHINERIE - 300 (HOTS)	CIRCUIT: 20amp SINGLE PHASE TO TOASTING STATION	29. PLUMBER AUTO TRAPPER	STANDARD SPD
10. COUGH HOLDER	CIRCUIT: 20amp 3 PHASE (10 + 10 + 10, 3 PHASE, 10amp, 10amp, 10amp)	20. HIGH SPEED CONNECTION CHEN - ATOL HOLE	CIRCUIT: 1 x 10amp SINGLE PHASE PER UNIT (240V / 3, 30A)	30. BAR FRIDGE x2	STANDARD SPD





1 LIGHTING PLAN
1 : 100

LIGHTING LEGEND		
MARK	SYMBOL	DESCRIPTION
L1		13W RECESSED DOWNLIGHT SUPPLIER: CUSTOM LIGHT FITTING SUPPLIED BY BANJOS AT LESSORS COST CUT-OUT 85-60mm DIAMETER
L3		ROUND RECESSED SHOPLIGHTER, LED 35W WITH DIMMABLE DRIVER, BEAM ANGLE 60 DEG, BRIGHTNESS 3325LM, COLOUR TEMPERATURE 3000K, CRI>90, FITTING COLOUR: WHITE
L4		9W SURFACE MTD CAN LIGHT COLOUR TEMP: 3000K BLACK BODY, LITHO CAN LIGHT LC4106 MANUFACTURED BY DECORLUX
P1		ORANGE PENDANT LIGHT SUPPLIED BY LESSOR
P2		PENDANT LIGHT (CLUSTER OF 3ND FITTINGS) P023-SM6-CAP PENDANT WOODEN LIGHT BY NORDIC TALES SUPPLIED BY FATSCHACK VINTAGE, BULB: G10 LARGE ROUND SQUIRREL CAGE FILAMENT LED BULB 5W COLOUR TEMP 2200K
P3		PENDANT LIGHT P152 PENDANT WOODTOP BASKET SUPPLIED BY BANJOS AT LESSORS COST BULB: LED EDISON TEARDROP 5W COLOUR TEMP 2200K B22
E		EMERGENCY LIGHT, 1612 LED FIRE-SM, SURFACE MOUNTED, FINISH: WHITE
		LP 30W LED PANEL, SAL 55714012 CIV 255 x 1155mm WITH RECESS PLASTER KIT
		SURFACE MTD COOLROOM LIGHT THORN COLDFACE 2 "COLD F2 2-36W T26 IHF L84"
		SWITCH
		DIMMABLE CIRCUIT
		MOVEMENT SENSOR CIRCUIT

AP ASSOCIATED PROJECTS COMMERCIAL BUILDERS,
PROJECT MANAGERS,
PLANNERS & DESIGNERS
T 03 8787 3000 | F 03 8787 3025
48-58 Cyber Loop, Dandenong South VIC 3175

No.	Date	Description
1	15/02	SERVICES FIRST PLOT
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3	08/03	AMENDMENTS VIA FEEDBACK
4	18/03	AMENDMENTS VIA FEEDBACK
5	09/05	HYDRAULICS UPDATED
6	24/05	AMENDMENTS VIA FEEDBACK
7	06/07	FOR CONSTRUCTION

BANJO'S
LENAH VALLEY
98 AUGUSTA RD, LENA VALLEY,
TASMANIA 7008



LIGHTING PLAN

Project number	TBC	A10
Date	02/15/22	
Drawn by	CC	
Checked by	EH	
Scale @ A3		1 : 100

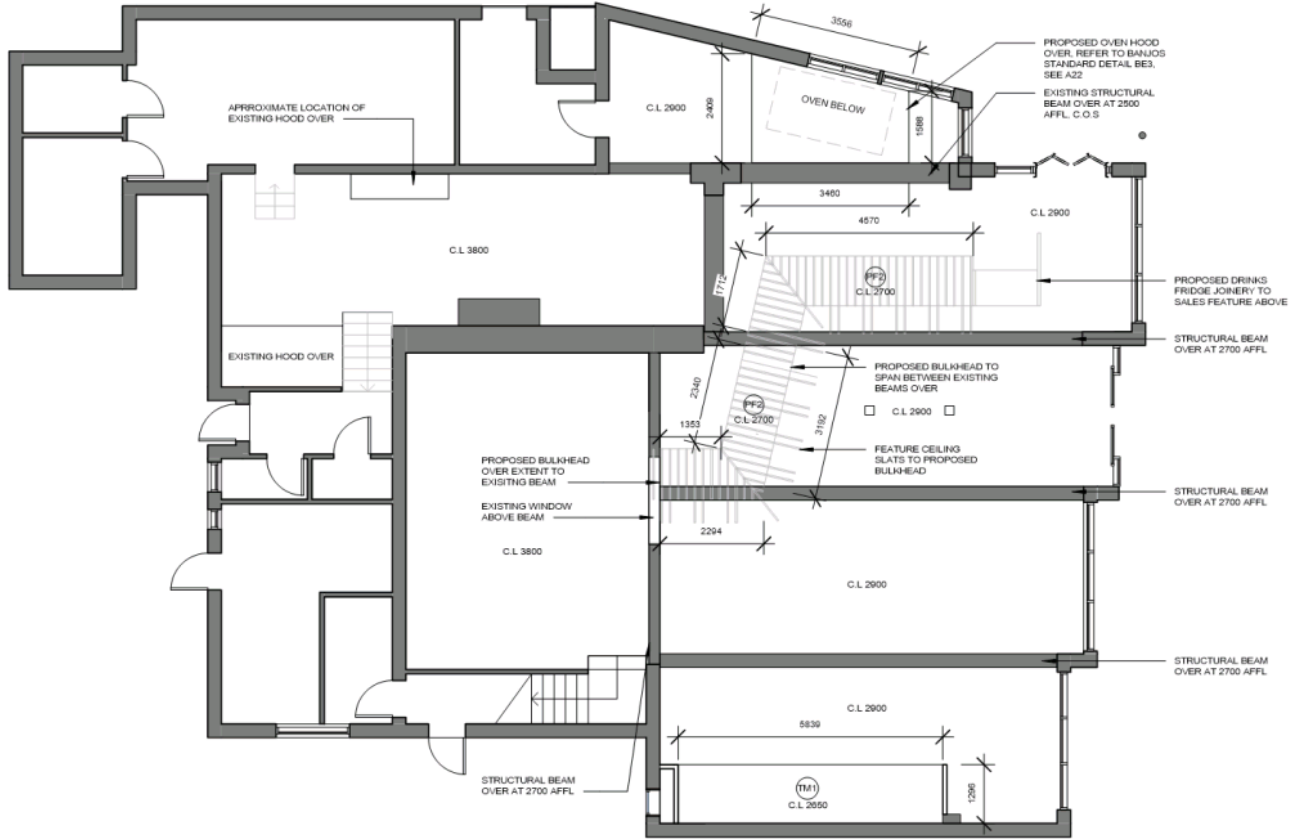
GENERAL NOTES

CHECK ALL EXISTING BEAM SIZES AND LOCATION ON SITE

SALES FEATURE SLATS AND BULKHEAD TO BE CONSTRUCTED IN ACCORDANCE WITH BANJOS STANDARD B-B1. DIMENSIONS ARE TO BE CONFIRMED ON SITE.

CHECK EXISTING CEILING FINISHES THROUGHOUT, MAKE GOOD IF NECESSARY

CODE	FINISH	SPECIFICATIONS
TM1		WONLY CHESTNUT TIMBER, CLEAR FINISH 30% FINISH
PF2		WYNNEB PAINT, CHINA DOLL COLOUR, CODE 2886, 100% FINISH



1 REFLECTED CEILING PLAN
1 : 100



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48-58 Cyber Loop, Dandenong South VIC 3175

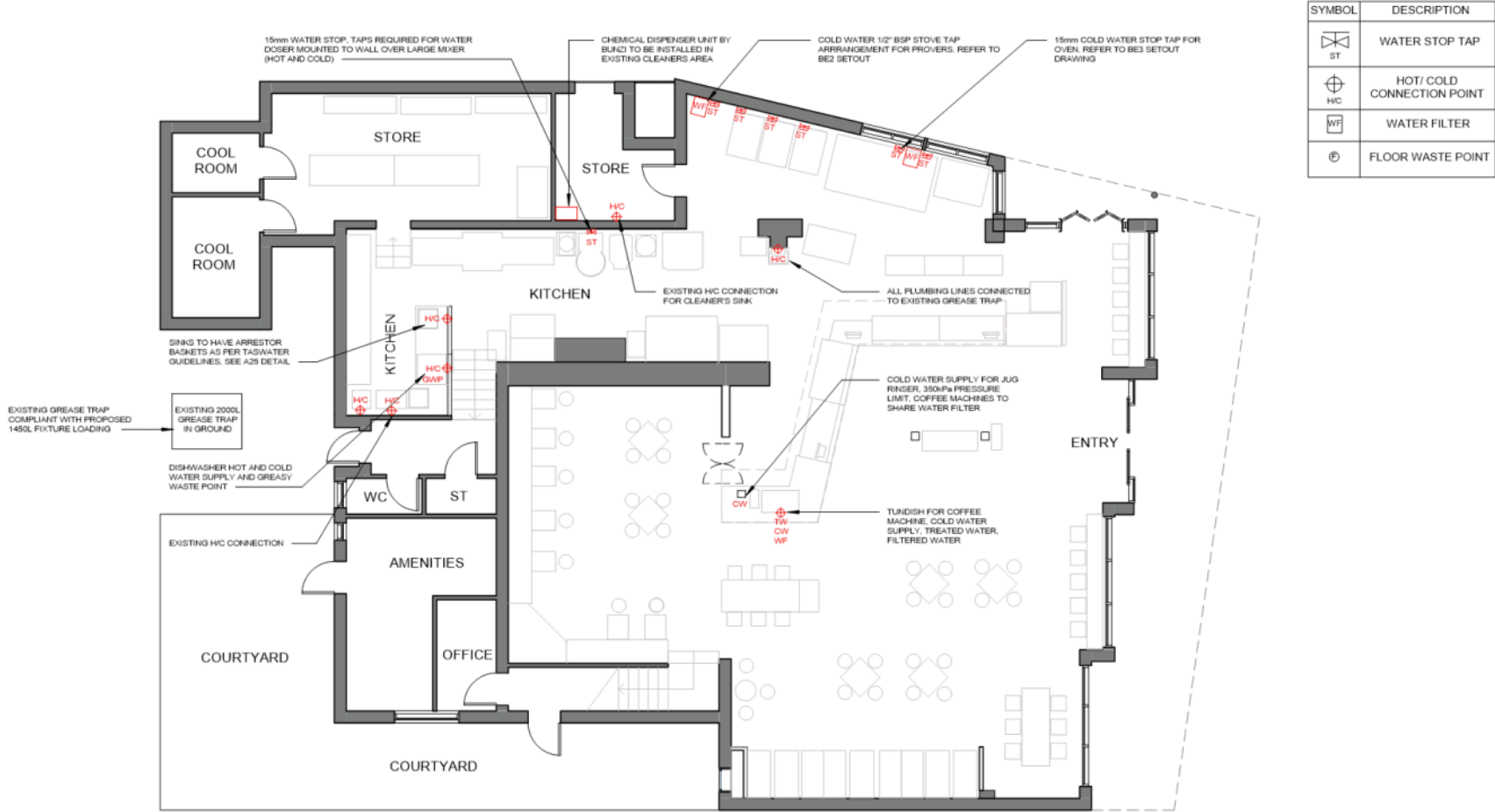
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7	06/07	FOR CONSTRUCTION

BANJO'S
LENAH VALLEY

98 AUGUSTA RD, LENA VALLEY,
TASMANIA 7008


REFLECTED CEILING PLAN

Project number	TBC	A11	Scale @ A3	1 : 100
Date	02/15/22			
Drawn by	CC			
Checked by	ML			



PLEASE NOTE FLOOR WASTES TO BE IN LINE WITH LOCAL COUNCIL STANDARDS, COVER AND MAKE GOOD TO EXISTING IF POSSIBLE

1 HYDRAULIC PLAN
1 : 100



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48-58 Cyber Loop, Dandenong South VIC 3175

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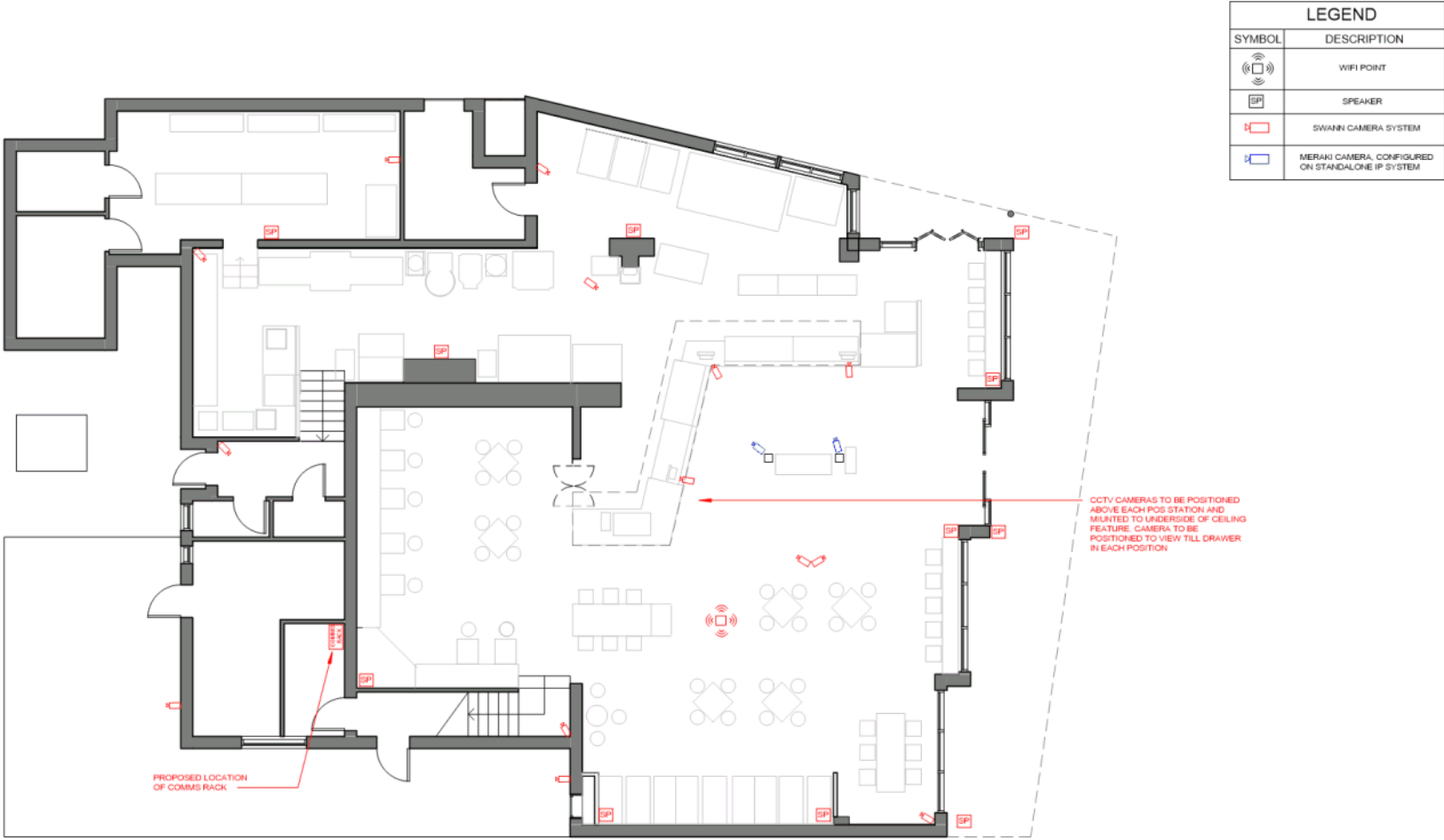
BANJO'S
LENAH VALLEY

98 AUGUSTA RD, LENAH VALLEY,
TASMANIA 7008



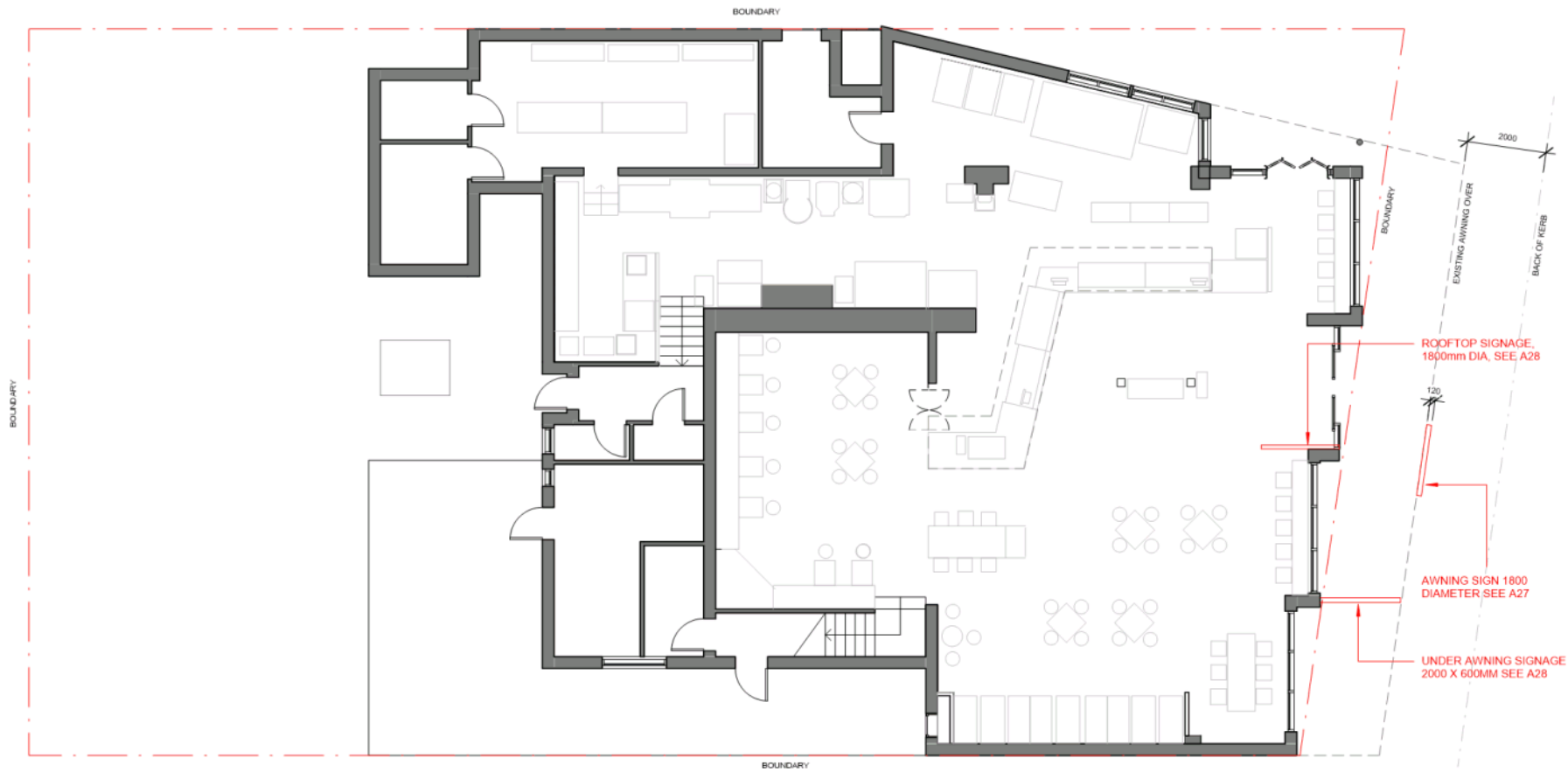
HYDRAULIC PLAN

Project number	TBC	A12
Date	02/15/22	
Drawn by	CC	
Checked by	EH	Scale @ A3 1 : 100




1 CCTV AND SOUND PLAN
1 : 100

ASSOCIATED PROJECTS COMMERCIAL BUILDERS, PROJECT MANAGERS, PLANNERS & DESIGNERS T 03 8787 3000 F 03 8787 3025 48-58 Cyber Loop, Dandenong South VIC 3175	<table border="1"><thead><tr><th>No.</th><th>Date</th><th>Description</th></tr></thead><tbody><tr><td>1</td><td>15/02</td><td>SERVICES FIRST PLOT</td></tr><tr><td>2</td><td>24/02</td><td>INITIAL DOCUMENTATION SET</td></tr><tr><td>3</td><td>08/03</td><td>AMENDMENTS VIA FEEDBACK</td></tr><tr><td>4</td><td>18/03</td><td>AMENDMENTS VIA FEEDBACK</td></tr><tr><td>5</td><td>09/05</td><td>HYDRAULICS UPDATED</td></tr><tr><td>6</td><td>24/05</td><td>AMENDMENTS VIA FEEDBACK</td></tr><tr><td>7</td><td>06/07</td><td>FOR CONSTRUCTION</td></tr></tbody></table>	No.	Date	Description	1	15/02	SERVICES FIRST PLOT	2	24/02	INITIAL DOCUMENTATION SET	3	08/03	AMENDMENTS VIA FEEDBACK	4	18/03	AMENDMENTS VIA FEEDBACK	5	09/05	HYDRAULICS UPDATED	6	24/05	AMENDMENTS VIA FEEDBACK	7	06/07	FOR CONSTRUCTION	BANJO'S LENAH VALLEY 98 AUGUSTA RD, LENAH VALLEY, TASMANIA 7008		CCTV AND SOUND PLAN	
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Project number TBC		A13																											
Date 02/15/22																													
Drawn by CC																													
Checked by ML																													
		Scale @ A3 1 : 100																											



1 SIGNAGE SITE PLAN
1 : 100



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T 03 8787 3000 | F 03 8787 3025
48-58 Cyber Loop, Dandenong South VIC 3175

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BANJO'S
LENAH VALLEY
98 AUGUSTA RD, LENA VALLEY,
TASMANIA 7008

SIGNAGE SITE PLAN			
Project number	TBC	A14	
Date	02/15/22		
Drawn by	CC		
Checked by	CC	Scale @ A3	1 : 100

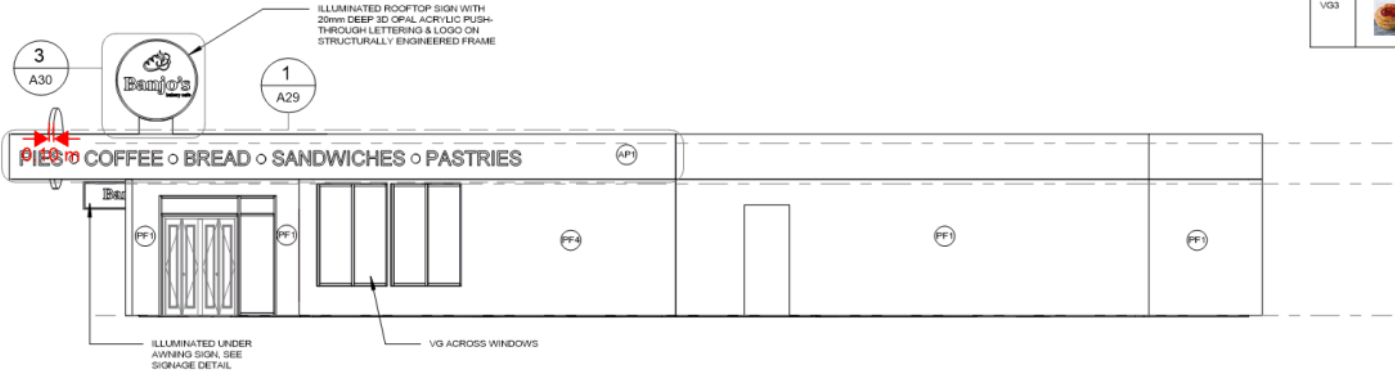


CODE	FINISH	SPECIFICATIONS
PF1		HAYMES PAINT, YORKSHIRE BROWN COLOUR, CODE: 25 LOW SHEEN DINCH
AP1		3mm SOLID ALUMINIUM PANEL, PANTONE 202 COLOUR

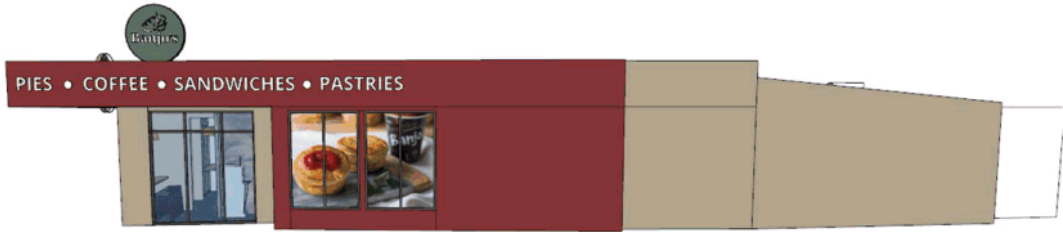
NOTE: SEE SIGNAGE PACK FOR MORE INFORMATION ON SIGNAGE

 ASSOCIATED PROJECTS COMMERCIAL BUILDERS, PROJECT MANAGERS, PLANNERS & DESIGNERS T 03 8787 3000 F 03 8787 3025 48-58 Cyber Loop, Dandenong South VIC 3175	<table border="1"> <thead> <tr> <th>No.</th> <th>Date</th> <th>Description</th> </tr> </thead> <tbody> <tr><td>1</td><td>15/02</td><td>SERVICES FIRST PLOT</td></tr> <tr><td>2</td><td>24/02</td><td>INITIAL DOCUMENTATION SET</td></tr> <tr><td>3</td><td>08/03</td><td>AMENDMENTS VIA FEEDBACK</td></tr> <tr><td>4</td><td>18/03</td><td>AMENDMENTS VIA FEEDBACK</td></tr> <tr><td>5</td><td>09/05</td><td>HYDRAULICS UPDATED</td></tr> <tr><td>6</td><td>24/05</td><td>AMENDMENTS VIA FEEDBACK</td></tr> <tr><td>7</td><td>06/07</td><td>FOR CONSTRUCTION</td></tr> </tbody> </table>	No.	Date	Description	1	15/02	SERVICES FIRST PLOT	2	24/02	INITIAL DOCUMENTATION SET	3	08/03	AMENDMENTS VIA FEEDBACK	4	18/03	AMENDMENTS VIA FEEDBACK	5	09/05	HYDRAULICS UPDATED	6	24/05	AMENDMENTS VIA FEEDBACK	7	06/07	FOR CONSTRUCTION	BANJO'S LENAH VALLEY 98 AUGUSTA RD, LENAH VALLEY, TASMANIA 7008	<table border="1"> <thead> <tr> <th colspan="3">EXTERNAL ELEVATIONS</th> </tr> </thead> <tbody> <tr> <td>Project number</td> <td>TBC</td> <td rowspan="4">A15</td> </tr> <tr> <td>Date</td> <td>02/15/22</td> </tr> <tr> <td>Drawn by</td> <td>CC</td> </tr> <tr> <td>Checked by</td> <td>ML</td> </tr> <tr> <td colspan="2"></td> <td>Scale @ A3</td> <td>1 : 100</td> </tr> </tbody> </table>	EXTERNAL ELEVATIONS			Project number	TBC	A15	Date	02/15/22	Drawn by	CC	Checked by	ML			Scale @ A3	1 : 100
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Date	02/15/22																																										
Drawn by	CC																																										
Checked by	ML																																										
		Scale @ A3	1 : 100																																								


CODE	FINISH	SPECIFICATIONS
PF1		HAYMES PAINT, YORKSHIRE BROWN COLOUR, CODE 2855, LOW SHEEN FINISH
PF4		SOLIER VANTAGE PAINT FINISH, SEDUCTRESS COLOUR, LOW SHEEN FINISH
AP1		3mm SOLID ALUMINIUM PANEL, PANTONE 202 COLOUR
VG3		ANY/OTHER FILLS TO BE PROVIDED BY BANJO'S HARVESTING DEPARTMENT



1 EXTERNAL ELEVATION 2
1 : 100



NOTE: SEE SIGNAGE PACK FOR MORE INFORMATION ON SIGNAGE



ASSOCIATED

PROJECTS

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48-58 Cyber Loop, Dandenong South VIC 3175

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BANJO'S

LENAH VALLEY

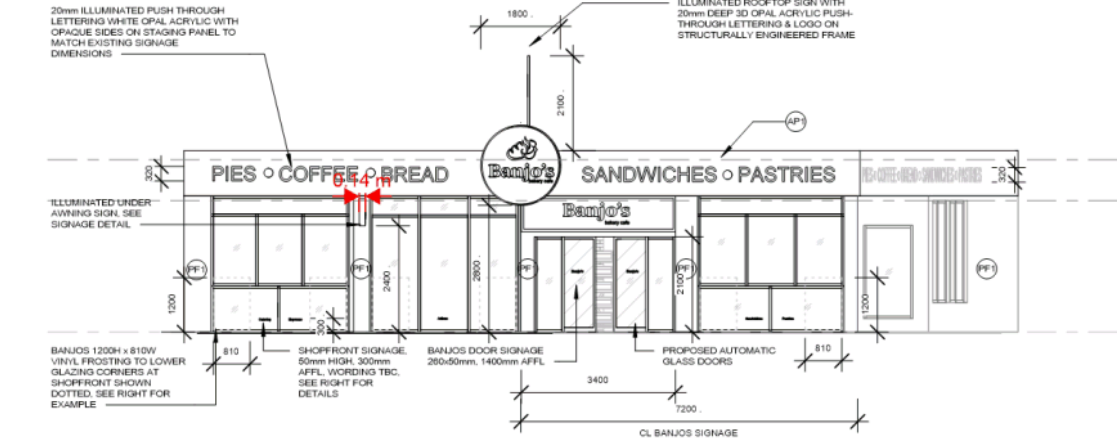
98 AUGUSTA RD, LENAH VALLEY,
TASMANIA 7008

EXTERNAL ELEVATIONS

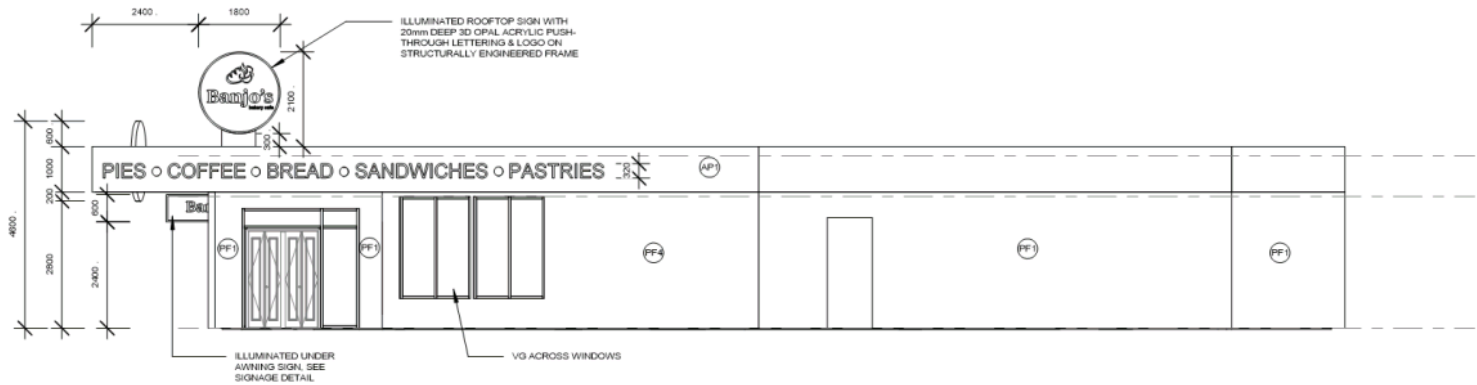
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Date	02/15/22
Drawn by	CC
Checked by	ML

A16

Scale @ A31 : 100



1 EXTERNAL ELEV 1
1 : 100



2 EXTERNAL ELEV 2
1 : 100



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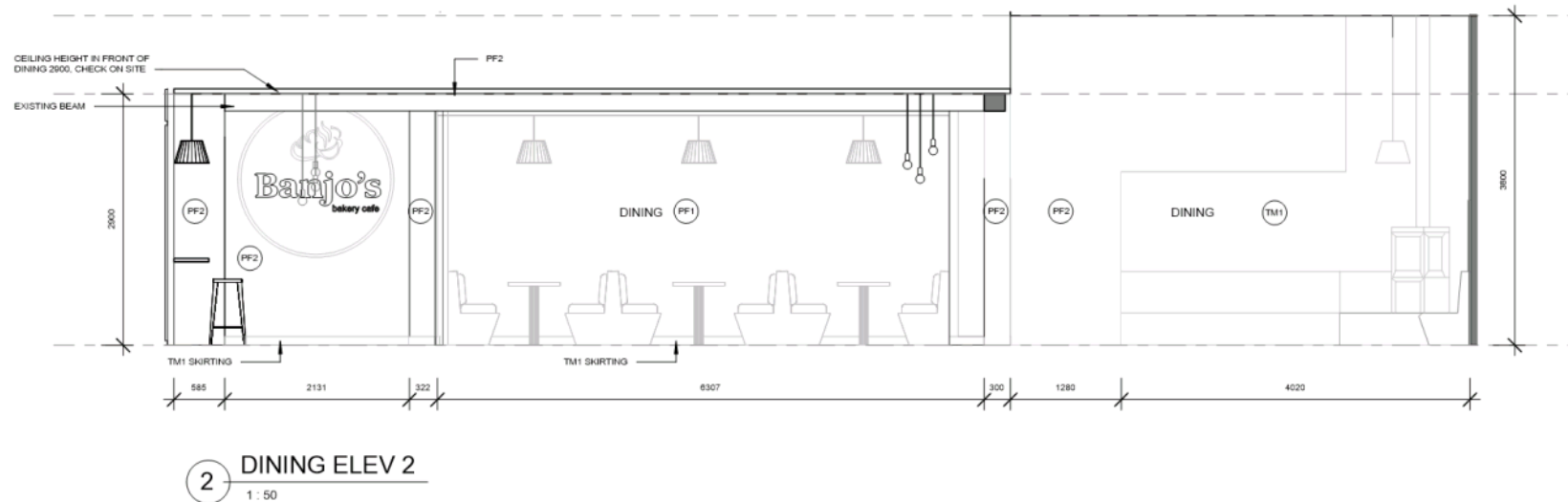
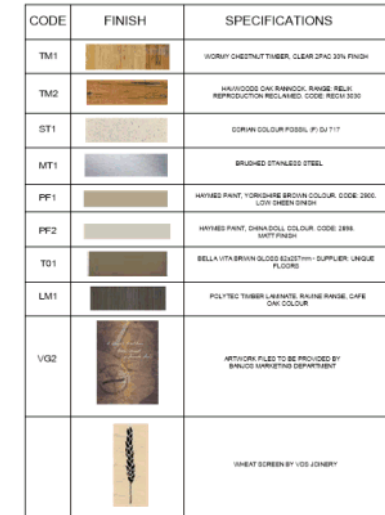
BANJO'S


LENAH VALLEY

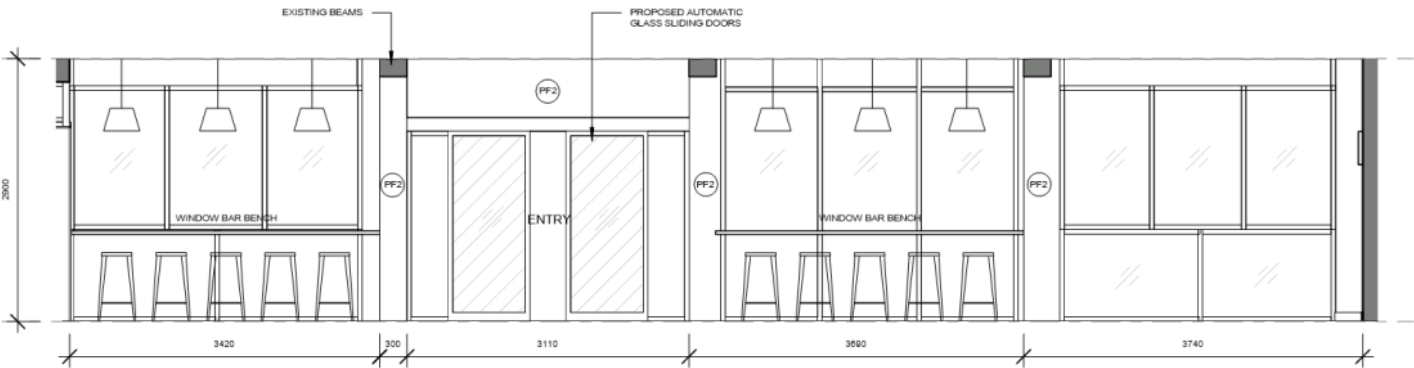
98 AUGUSTA RD, LENAH VALLEY,
TASMANIA 7008

EXTERNAL SIGNAGE PLAN

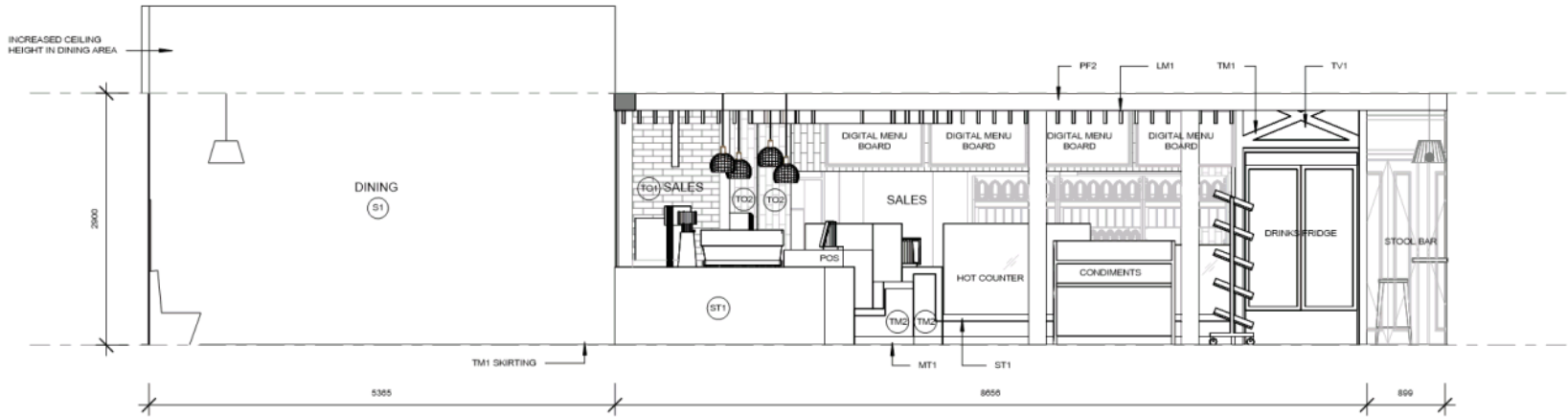
Project number	TBC	A17
Date	02/15/22	
Drawn by	Author	
Checked by	Checker	
Scale @ A3		1 : 100



 ASSOCIATED PROJECTS COMMERCIAL BUILDERS, PROJECT MANAGERS, PLANNERS & DESIGNERS T 03 8787 3000 F 03 8787 3025 48-58 Cyber Loop, Dandenong South VIC 3175	<table border="1"> <thead> <tr> <th>No.</th> <th>Date</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>15/02</td> <td>SERVICES FIRST PLOT</td> </tr> <tr> <td>2</td> <td>24/02</td> <td>INITIAL DOCUMENTATION SET</td> </tr> <tr> <td>3</td> <td>08/03</td> <td>AMENDMENTS VIA FEEDBACK</td> </tr> <tr> <td>4</td> <td>18/03</td> <td>AMENDMENTS VIA FEEDBACK</td> </tr> <tr> <td>5</td> <td>09/05</td> <td>HYDRAULICS UPDATED</td> </tr> <tr> <td>6</td> <td>24/05</td> <td>AMENDMENTS VIA FEEDBACK</td> </tr> <tr> <td>7</td> <td>06/07</td> <td>FOR CONSTRUCTION</td> </tr> </tbody> </table>	No.	Date	Description	1	15/02	SERVICES FIRST PLOT	2	24/02	INITIAL DOCUMENTATION SET	3	08/03	AMENDMENTS VIA FEEDBACK	4	18/03	AMENDMENTS VIA FEEDBACK	5	09/05	HYDRAULICS UPDATED	6	24/05	AMENDMENTS VIA FEEDBACK	7	06/07	FOR CONSTRUCTION	BANJO'S LENAH VALLEY 98 AUGUSTA RD, LENAH VALLEY, TASMANIA 7008	<table border="1"> <thead> <tr> <th colspan="2">DINING ELEVATIONS</th> </tr> </thead> <tbody> <tr> <td>Project number</td> <td>TBC</td> </tr> <tr> <td>Date</td> <td>02/15/22</td> </tr> <tr> <td>Drawn by</td> <td>CC</td> </tr> <tr> <td>Checked by</td> <td>ML</td> </tr> </tbody> </table> <div style="text-align: right; font-size: 24pt; font-weight: bold;">A18</div> <div style="text-align: right; font-size: 10pt;">Scale @ A3 1 : 50</div>	DINING ELEVATIONS		Project number	TBC	Date	02/15/22	Drawn by	CC	Checked by	ML
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Checked by	ML																																				



1 DINING ELEV 3
1 : 50



2 DINING ELEV 4
1 : 50

CODE	FINISH	SPECIFICATIONS
TM1		WORN CHESTNUT TIMBER, CLEAR 2PAC 35% FINISH
TM2		HALFBOARD OAK RIVEN, RANGE REXLX, REPRODUCTION RELEX, CODE RELEX 3000
ST1		CORIAN COLOUR FOSSIL, F151717
MT1		BRUSHED STAINLESS STEEL
PF2		HYTUF PAINT, CHIVA DOLL COLOUR, CODE 2895, MATT FINISH
TD2		MEDITERRANEAN TANTER COTTO WALL TILE, SIZE 75 x 100mm, VERTICAL, BRICK STACK BOND PATTERN, CODE TAPOT 1501A
TD1		BELLA VITA BROWN GLOSS EDGE 11mm - SUPPLIER UNIQUE FLOORS
TV1		TIMBER UNION, RUSTIC WHITE COLOUR, QUARTERED PATTERN, SHEET SIZE 3100 x 6400mm
LM1		POLYTEX TIMBER LAMINATE, RAVINE RANGE, CAFE OAK COLOUR
VG1		WIDE COFFEE WALNUT, RANGE FEATURE WALL

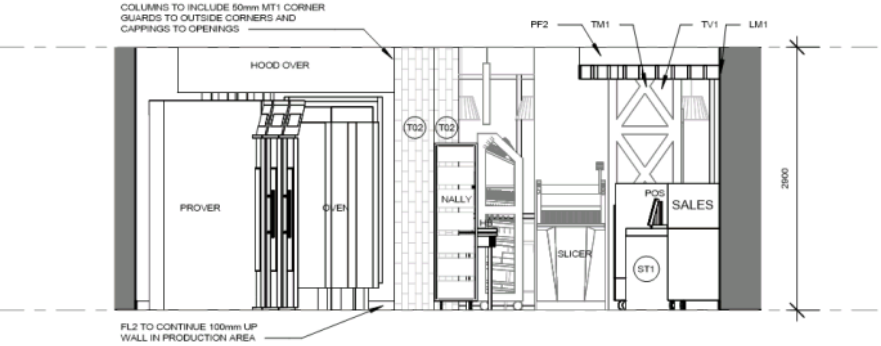
AP ASSOCIATED PROJECTS COMMERCIAL BUILDERS, PROJECT MANAGERS, PLANNERS & DESIGNERS
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48-58 Cyber Loop, Dandenong South VIC 3175

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BANJO'S
LENAH VALLEY
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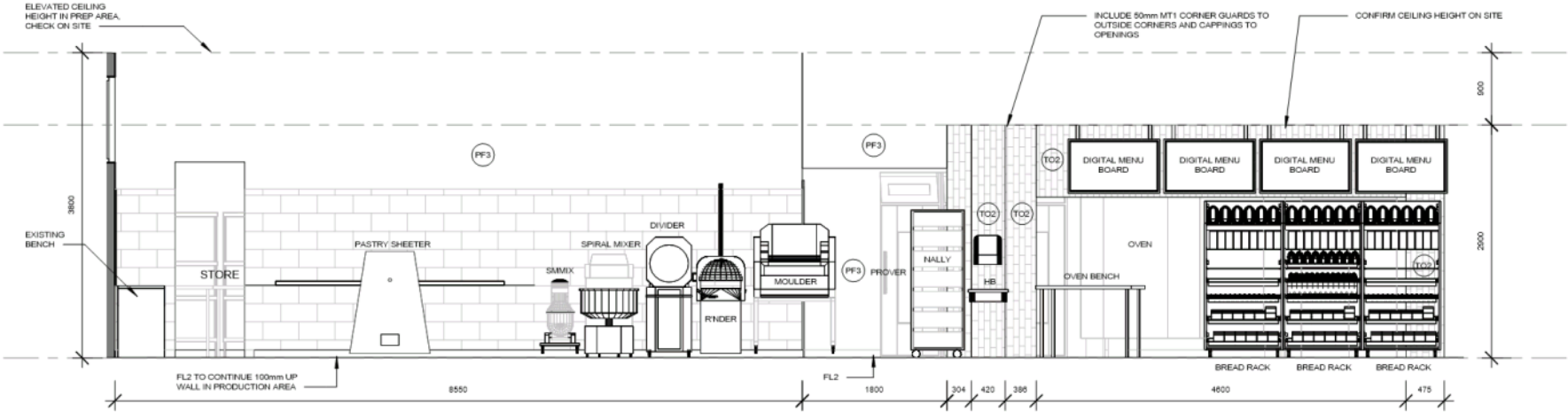
DINING ELEVATIONS

Project number	TBC	A19
Date	02/15/22	
Drawn by	CC	
Checked by	ML	
Scale @ A3		1 : 50



CODE	FINISH	SPECIFICATIONS
TM1		WORKY CHESTNUT TIMBER, CLEAR OPAQ 30% FINISH
TV1		TIMBER VENEER, RESTRICTED COLOUR, QUARTERED PATTERN, SHEET SIZE 3150 x 640mm
ST1		CORIAN COLOUR POSSA, F1 DU 117
LM1		POLYTEC TIMBER LAMINATE, PAINE RANGE, CHIE GW COLOUR
PF2		HYMES PAINT, CARADOL COLOUR, CODE: 2896, MATT FINISH
PF3		HYMES PAINT, SENALIST NO.2, MATT FINISH
T02		MEDITERRANEAN TANDER COTTO WALL T.B. SIZE: 75 x 150mm VERTICAL BRICK STACK BOND PATTERN, CODE: TAND-BATA
FL2		SKA DEARFLOR 22x PARCHEN SYSTEM (2x BASE) 31x TOP WITH 65 MESH ALUMINUM COARSE COLOUR GREY, CODE: RA, T02, SUPPLYING R11, 10mm DEEP, G.O.B.D. DARTING TO ALL WALLS INCLUDING COOL ROOM, 4.5-6mm THICKNESS

1 PRODUCTION ELEV 3
1 : 50



2 PRODUCTION ELEVATION 4
1 : 50

AP ASSOCIATED PROJECTS COMMERCIAL BUILDERS, PROJECT MANAGERS, PLANNERS & DESIGNERS
T 03 8787 3000 | F 03 8787 3025
48-58 Cyber Loop, Dandenong South VIC 3175

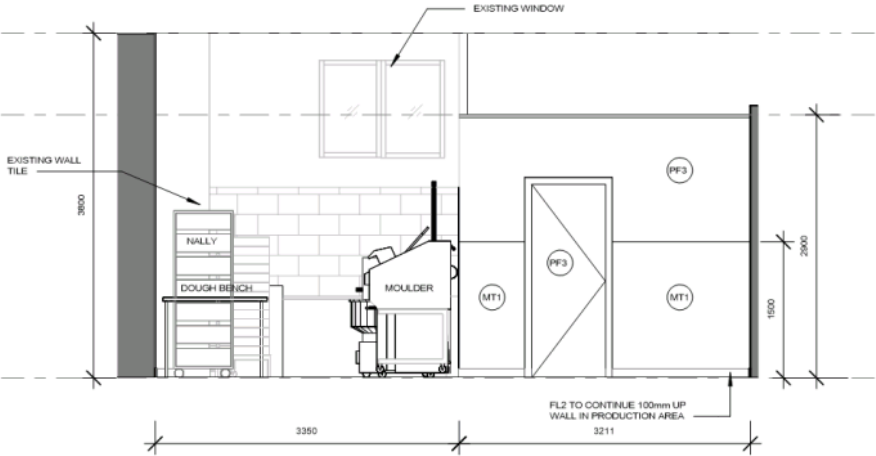
No.	Date	Description
1	15/02	SERVICES FIRST PLOT
2	24/02	INITIAL DOCUMENTATION SET
3	08/03	AMENDMENTS VIA FEEDBACK
4	18/03	AMENDMENTS VIA FEEDBACK
5	09/05	HYDRAULICS UPDATED
6	24/05	AMENDMENTS VIA FEEDBACK
7	06/07	FOR CONSTRUCTION

BANJO'S
LENAH VALLEY

98 AUGUSTA RD, LENAH VALLEY,
TASMANIA 7008

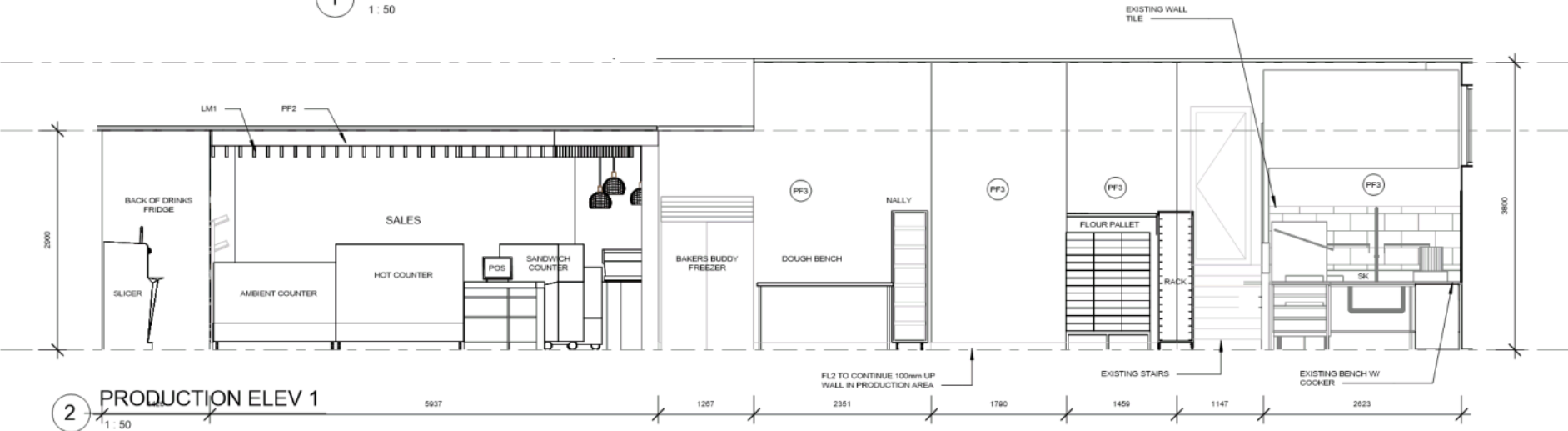
PRODUCTION ELEVATIONS

Project number	TBC	A20
Date	02/15/22	
Drawn by	CC	
Checked by	ML	
Scale @ A3		1 : 50



1 PRODUCTION ELEV 2
1 : 50

CODE	FINISH	SPECIFICATIONS
TM1		WORMY CHESTNUT TIMBER, CLEAR SPAC 30% FINISH
TV1		TIMBER VENEER, BUTTERFLO COLOUR, QUARTERED PATTERN, SHEET SIZE 3152 x 840mm
ST1		CORIAN COLOUR FOSSEL (P) 54717
LM1		POLYESTER TIMBER LAMINATE, RAUINE RANGE, CURE OAK COLOUR
PF2		HYMEX PAINT, CHINA DOLL COLOUR, CODE 2895, MATT FINISH
PF3		HYMEX PAINT, MINERALOT M012, MATT FINISH
FL2		SKA SKAFLOR 224 PURFORM SYSTEM (2 x 1/4" BASE, 3/4" TOP) WITH 60 SERIES ALUMINIUM GRATE, COLOUR: GREY, CODE: RAL 7037, SLIP RATING: R11 (100% INTEGRAL COATED SURFING TO ALL WALLS INCLUDING COOK ROOM, 4.5mm THICKNESS)
MT1		BRUSHED STAINLESS STEEL
VG2		ARTWORK FILES TO BE PROVIDED BY BANJO'S MARKETING DEPARTMENT



2 PRODUCTION ELEV 1
1 : 50



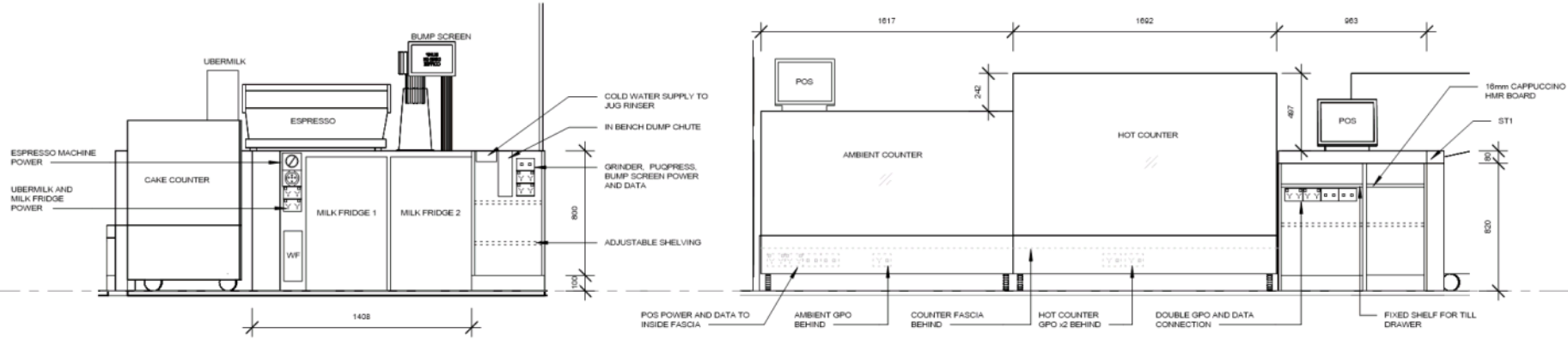
ASSOCIATED PROJECTS
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PROJECT MANAGERS,
PLANNERS & DESIGNERS
T 03 8787 3000 | F 03 8787 3025
48-58 Cyber Loop, Dandenong South VIC 3175

No.	Date	Description
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3	08/03	AMENDMENTS VIA FEEDBACK
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5	09/05	HYDRAULICS UPDATED
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7	06/07	FOR CONSTRUCTION

BANJO'S
LENAH VALLEY
98 AUGUSTA RD, LENA VALLEY,
TASMANIA 7008

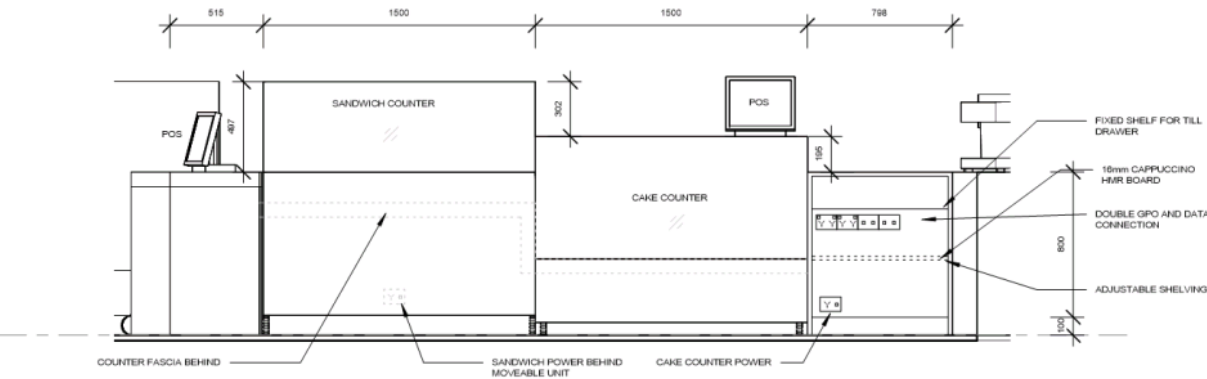
PRODUCTION ELEVATIONS

Project number	TBC	A21
Date	02/15/22	
Drawn by	CC	
Checked by	ML	Scale @ A3 1 : 50



1 SALES ELEV 1
1 : 25

2 SALES ELEV 2
1 : 25



3 SALES ELEV 3
1 : 25

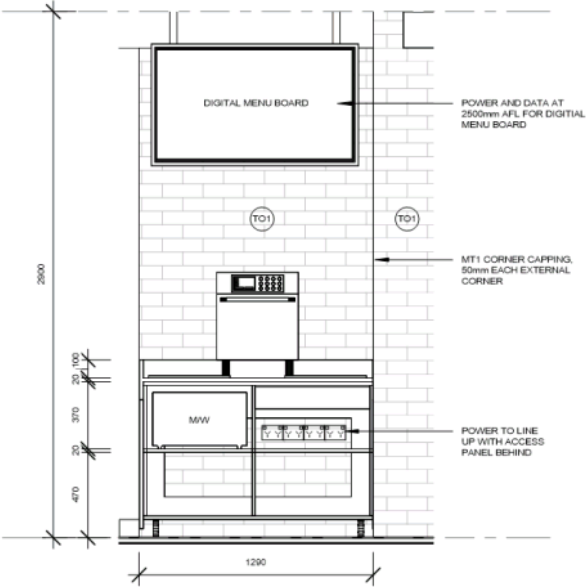
CODE	FINISH	SPECIFICATIONS
ST1		CORIAN COLOUR FOSSIL P1 D1 117

No.	Date	Description
1	15/02	SERVICES FIRST PLOT
2	24/02	INITIAL DOCUMENTATION SET
3	08/03	AMENDMENTS VIA FEEDBACK
4	18/03	AMENDMENTS VIA FEEDBACK
5	09/05	HYDRAULICS UPDATED
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7	06/07	FOR CONSTRUCTION

SALES ELEVATIONS

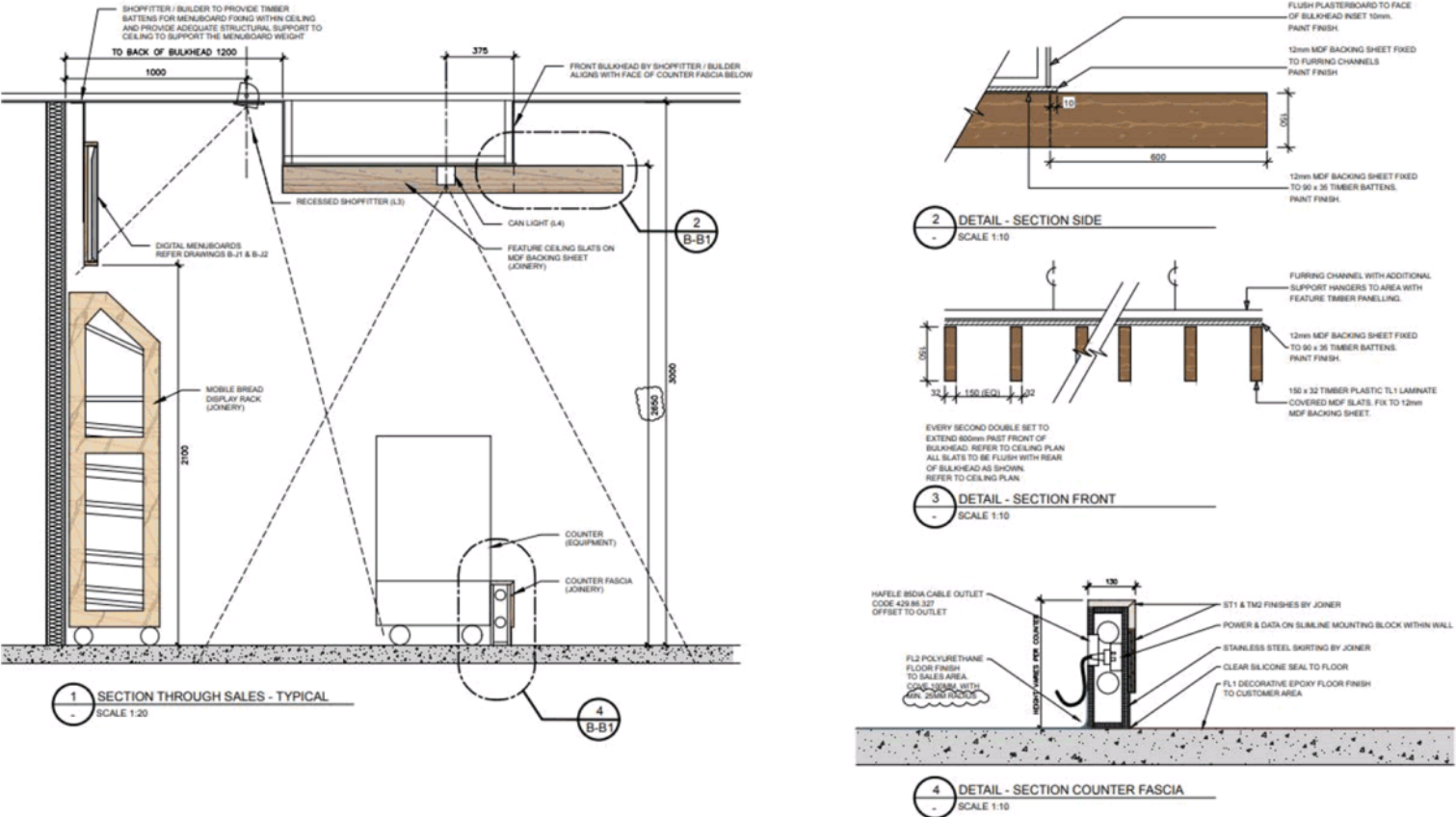
Project number	TBC	A22
Date	02/15/22	
Drawn by	CC	
Checked by	ML	Scale @ A3 1 : 25

CODE	FINISH	SPECIFICATIONS
TD1		BELLA VITA BROWN GLOSS 60x120mm - SUPPLIER UNIQUE FLOORS
MT1		BRUSHED STAINLESS STEEL



1 SALES ELEV 4
1 : 25

No.	Date	Description
1	15/02	SERVICES FIRST PLOT
2	24/02	INITIAL DOCUMENTATION SET
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4	18/03	AMENDMENTS VIA FEEDBACK
5	09/05	HYDRAULICS UPDATED
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7	06/07	FOR CONSTRUCTION



BANJOS STANDARD DETAIL B-B1

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PROJECT MANAGERS,
PLANNERS & DESIGNERS
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48-58 Cyber Loop, Dandenong South VIC 3175

No.	Date	Description
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6	24/05	AMENDMENTS VIA FEEDBACK
7	06/07	FOR CONSTRUCTION

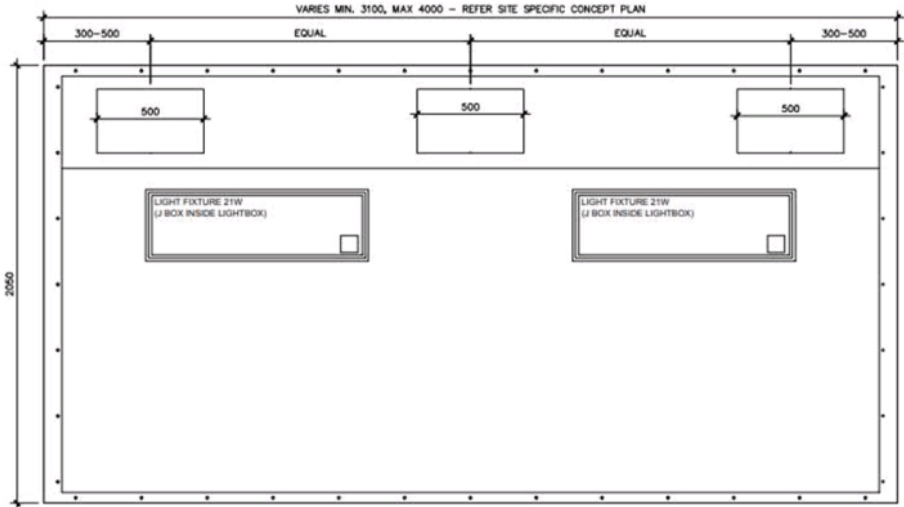
BANJO'S
LENAH VALLEY
98 AUGUSTA RD, LENA VALLEY,
TASMANIA 7008

SALES SECTION DETAIL

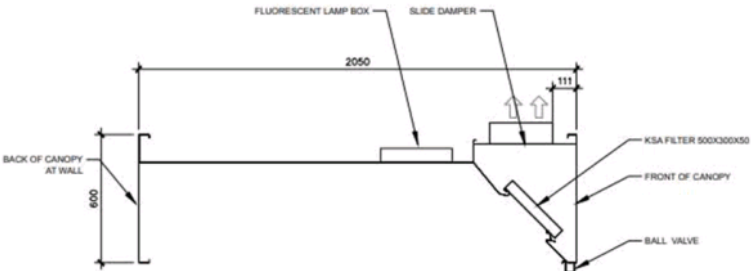
Project number	TBC
Date	02/15/22
Drawn by	CC
Checked by	ML

A24

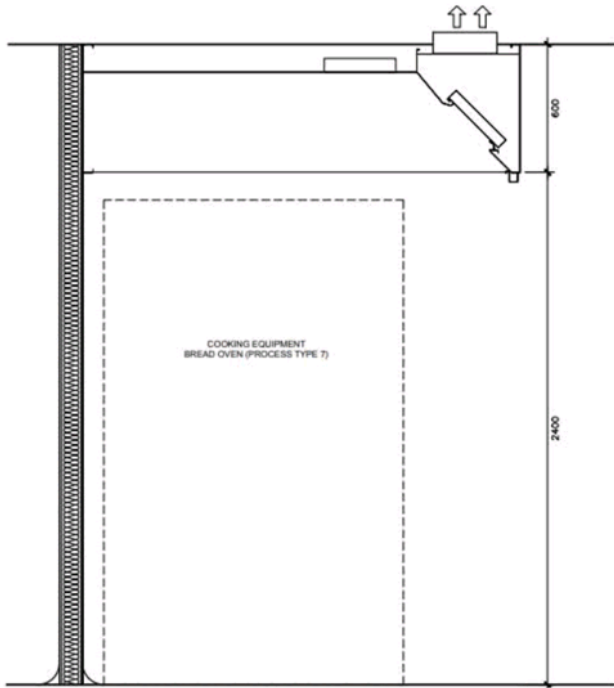
Scale @ A3



1 PLAN DETAIL
SCALE 1:20



2 SECTION DETAIL
SCALE 1:20



3 SECTION DETAIL IN CONTEXT
SCALE 1:20

OVEN HOOD NOTES

1. ALL VENTILATION AND AIR CONDITIONING SHALL COMPLY WITH AS 1568.1-20 AND AS 1568.2-2012.
2. ALL AIR FILTERS FOR GENERAL VENTILATION AND AIR CONDITIONING SHALL COMPLY WITH AS 1324 PART 1.
3. DUCT WORK AND INSULATION SHALL COMPLY WITH AS 4254.
4. ALL DUCTWORK DIMENSIONS SHOWN ARE CLEAR AIR WAY DIMENSIONS.
5. ALL HOODS TO BE FABRICATED FROM 2mm STAINLESS STEEL.
6. ALL DUCTS TO BE INSTALLED COMPLETE WITH ACCESS PANELS AS PER AS4254.
7. ALL DUCTS TO BE INSTALLED COMPLETE WITH THERMAL DETECTION AS PER AS1670.1-2004.
8. SUSPEND THE HOOD FROM THE ROOF STRUCTURE ABOVE IN ACCORDANCE WITH ENGINEERS ADVICE.
9. EXHAUST DUCTS NEED TO FIT INSIDE THE COLLARS OF THE HOOD AND BE FULLY SEALED SO THAT ANY GREASE/OIL RETURNS BACK INSIDE THE HOOD.

ELECTRICAL NOTES:

1. APPROXIMATELY 250MM 10AMP PLUS & LEAD TO BE SUPPLIED AT LH END OF HOOD FOR CONNECTION TO 15A CONNECTOR.
2. HOOD LIGHTING TO BE CONNECTED TO THE PRODUCTION AREA LIGHTING CIRCUIT, NOT THE HOOD FAN.
3. PROVIDE A VARIABLE SPEED CONTROLLER WITH ISOLATOR ON WALL ADJACENT TO THE HOOD (LOCATION NOMINATED BY BANJO'S)



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6	24/05	AMENDMENTS VIA FEEDBACK
7	06/07	FOR CONSTRUCTION

BANJO'S

LENAH VALLEY

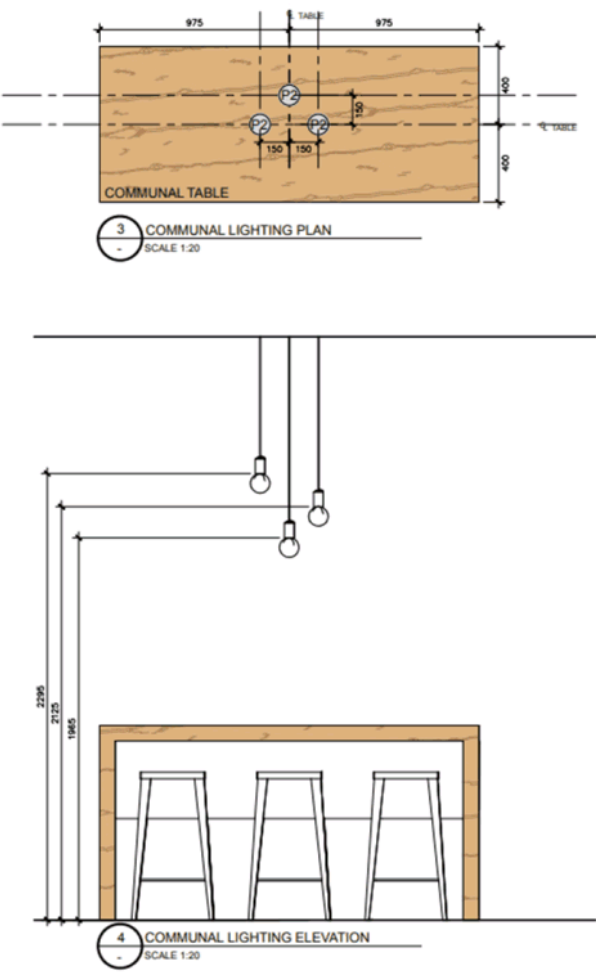
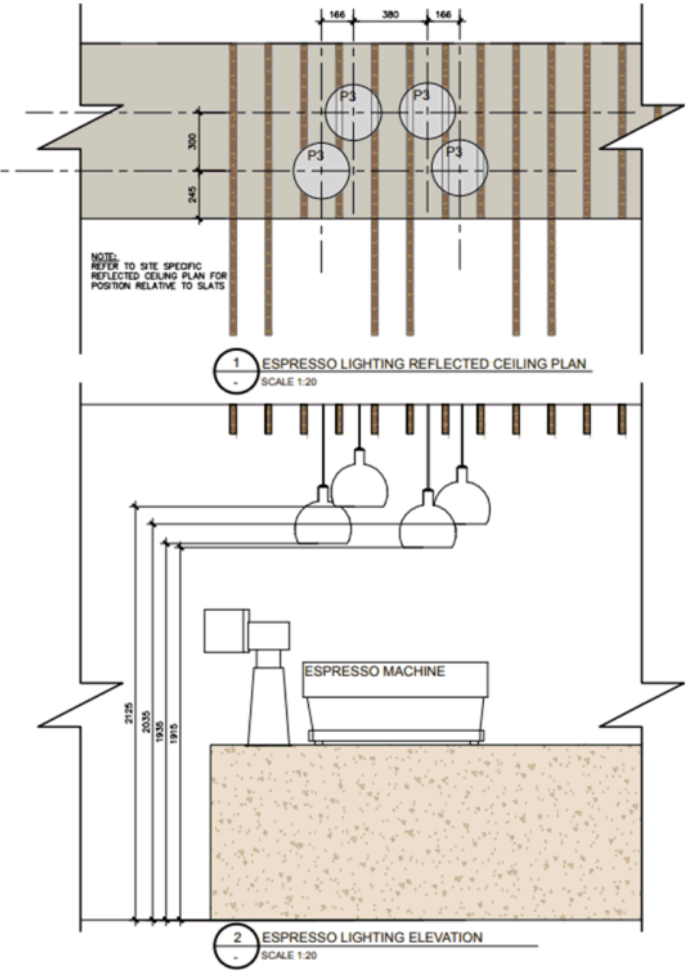
98 AUGUSTA RD, LENA VALLEY,
TASMANIA 7008

OVEN HOOD DETAIL


Project number	TBC
Date	02/15/22
Drawn by	CC
Checked by	ML

A25

Scale @ A3



BANJOS STANDARD DETAIL BL-1



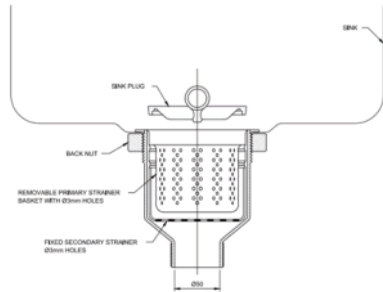
ASSOCIATED PROJECTS
COMMERCIAL BUILDERS,
PROJECT MANAGERS,
PLANNERS & DESIGNERS
T 03 8787 3000 | F 03 8787 3025
48-58 Cyber Loop, Dandenong South VIC 3175

No.	Date	Description
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6	24/05	AMENDMENTS VIA FEEDBACK
7	06/07	FOR CONSTRUCTION

BANJO'S
LENAH VALLEY
98 AUGUSTA RD, LENAH VALLEY,
TASMANIA 7008

LIGHTING DETAIL	
Project number	TBC
Date	02/15/22
Drawn by	CC
Checked by	EH

A26
Scale @ A3



- GUIDELINE FOR STRAINER UNITS**
1. SINK STRAINER UNITS OR SIMILAR APPROVED UNITS ARE RECOMMENDED AND MAY BE REQUIRED TO BE FITTED TO SINKS IN COMMERCIAL OPERATIONAL LA FOOD PRODUCTION OR PREPARATION AREAS.
 2. PRIMARY STRAINER UNITS ARE TO BE FABRICATED FROM STAINLESS STEEL PERFORATED METAL OR WIRE, WITH A MINIMUM OF 3mm OPENINGS.
 3. FIXED SECONDARY STRAINERS ARE TO BE FABRICATED FROM STAINLESS STEEL PLATE WITH 3mm HOLES.
 4. SINK STRAINER UNITS CAN BE RETROFITTED TO SINKS.
 5. ALL REQUIREMENTS SHOWN ARE BY REFERENCE.

TO BE READ IN CONJUNCTION WITH TSWATER PRETREATMENT GUIDELINES

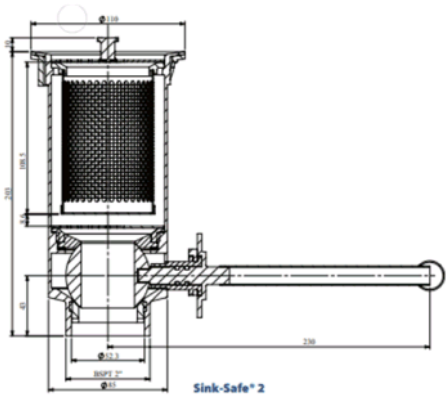
DRY BASKET ARRESTOR SPECIFICATION FROM TAS WATER



Sink-Safe® 2
For heavy duty use in commercial and industrial sinks

- Commercial kitchens
- Restaurants
- Butcher shops
- Supermarkets

Sink-Safe® 2 features a ball valve that allows the sink to be emptied using a handle below the sink. The remote sink emptying mechanism helps minimise cuts from unseen sharp objects, burns from hot water and skin irritations from contact with fat, oil, grease or detergents.



VINIDEX SAFE-SINK 2

CHECK EXISTING DRY BASKET ARRESTORS ON SITE. VINIDEX SINK-SAFE 2
OPTION FOR DRY BASKET ARRESTOR TO BE INSTALLED. 340cc CAPACITY, 109mm H x 65mm DIAMETER



ASSOCIATED PROJECTS
COMMERCIAL BUILDERS,
PROJECT MANAGERS,
PLANNERS & DESIGNERS

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7	06/07	FOR CONSTRUCTION

BANJO'S
LENAH VALLEY

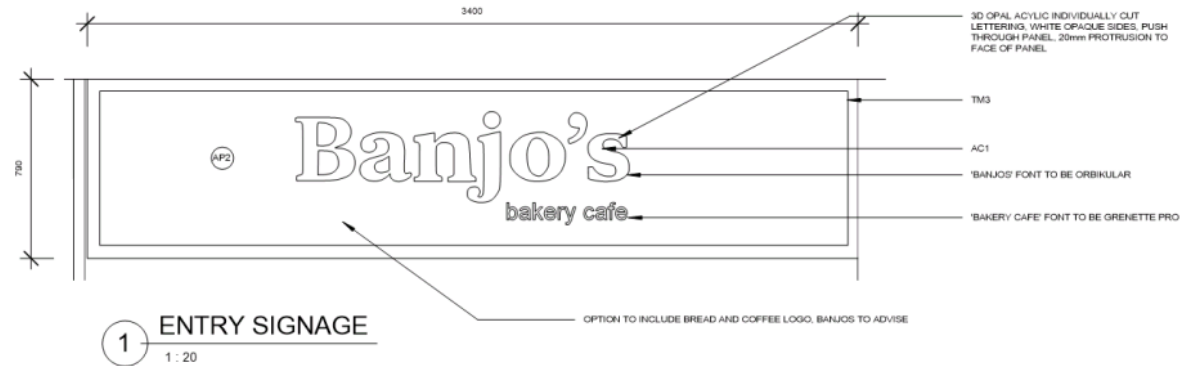
98 AUGUSTA RD, LENA VALLEY,
TASMANIA 7008

DRY BASKET ARRESTOR DETAIL

Project number	TBC
Date	02/15/22
Drawn by	Author
Checked by	Checker

A27

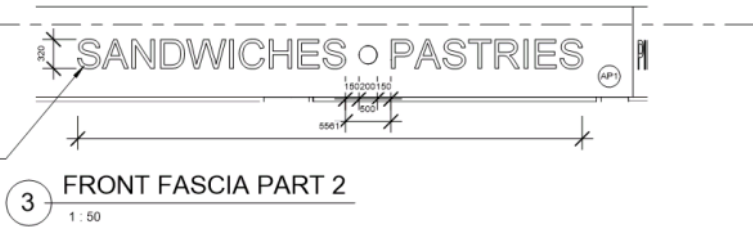
Scale @ A3



BANJOS SIGNAGE EXAMPLE



WHITE OPAL ACRYLIC 3D PUSH THROUGH LETTERING. WHITE OPAQUE SIDES. BACK-LIT LED. BLOCK OUT LETTERING SIDES WITH OPAQUE. 30mm OR 50mm DEEP. BANJOS TO ADVISE.



CODE	FINISH	SPECIFICATIONS
AC1		OPAC ACRYLIC ILLUMINATED. WHITE
AP2		1.6mm VINYL COLOURED FILM ON ALUMINIUM PANEL. PANTONE 66-13 (DARK LEAF GREEN)
AP1		3mm SOLID ALUMINIUM PANEL. PANTONE 202 COLOUR
TM3		MIDWOOD 'BARK'

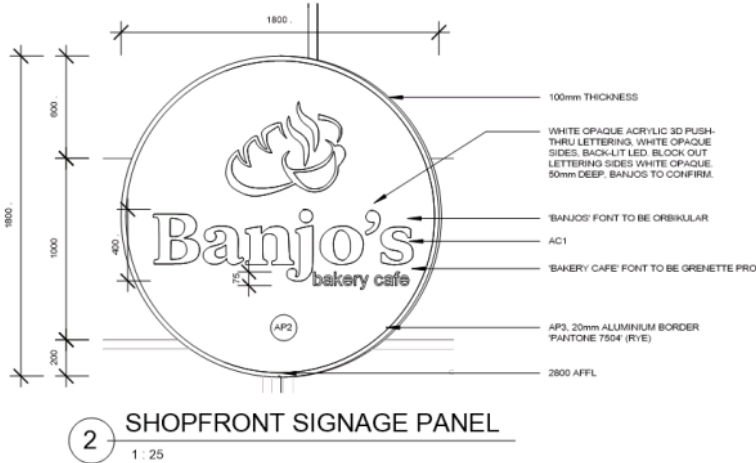
ASSOCIATED PROJECTS COMMERCIAL BUILDERS,
PROJECT MANAGERS,
PLANNERS & DESIGNERS
T 03 8787 3000 | F 03 8787 3025
48-58 Cyber Loop, Dandenong South VIC 3175

No.	Date	Description
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2	24/02	INITIAL DOCUMENTATION SET
3	08/03	AMENDMENTS VIA FEEDBACK
4	18/03	AMENDMENTS VIA FEEDBACK
5	09/05	HYDRAULICS UPDATED
6	24/05	AMENDMENTS VIA FEEDBACK
7	06/07	FOR CONSTRUCTION

BANJO'S
LENAH VALLEY
98 AUGUSTA RD, LENAH VALLEY,
TASMANIA 7008

SIGNAGE	
Project number	TBC
Date	02/15/22
Drawn by	CC
Checked by	ML

A28
Scale @ A3 As indicated



TYPICAL ABOVE AWNING SIGNAGE

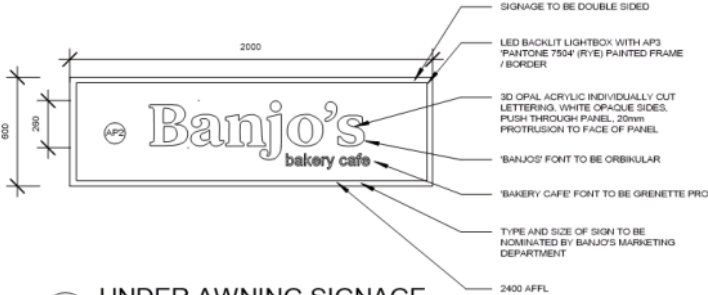
CODE	FINISH	SPECIFICATIONS
AC1		OPAL ACRYLIC ILLUMINATED, WHITE
AP1		SHINY SOLID ALUMINIUM PANEL, PANTONE 352 COLOUR
AP2		1.8MM VINYL COLOURED FILM ON ALUMINIUM PANEL, PANTONE 5617 (DARK LEAF GREEN)
AP3		ALUMINIUM BORDER, PANTONE 7504 (RYE)

AP ASSOCIATED PROJECTS COMMERCIAL BUILDERS,
PROJECT MANAGERS,
PLANNERS & DESIGNERS
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48-58 Cyber Loop, Dandenong South VIC 3175

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4	18/03	AMENDMENTS VIA FEEDBACK
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6	24/05	AMENDMENTS VIA FEEDBACK
7	06/07	FOR CONSTRUCTION

BANJO'S
LENAH VALLEY
98 AUGUSTA RD, LENAH VALLEY,
TASMANIA 7008

SIGNAGE			
Project number	TBC	A29	
Date	02/15/22		
Drawn by	CC		
Checked by	ML	Scale @ A3	As indicated



1 UNDER AWNING SIGNAGE
1 : 25

TYPICAL UNDER-AWNING SIGNAGE



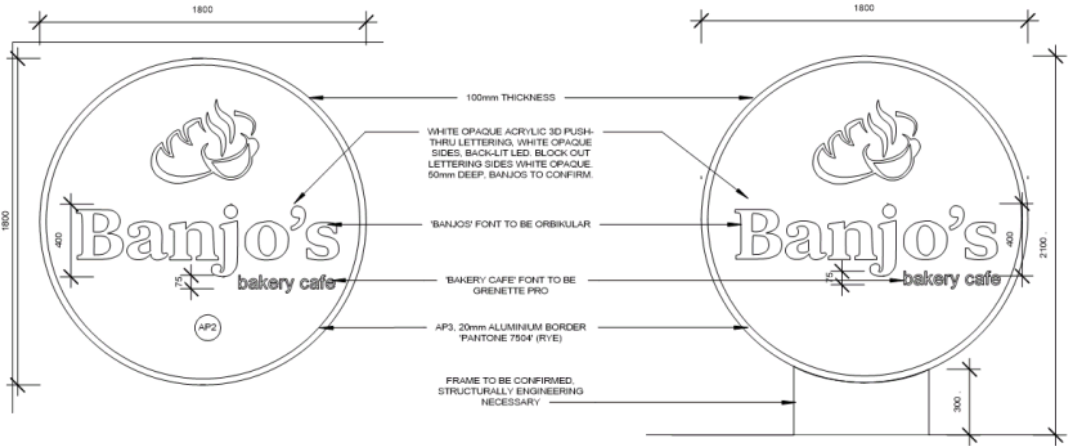
UNDER AWNING SIGN - TYPE A



UNDER AWNING SIGN - TYPE B

UNDER AWNING SIGNAGE OPTIONS TO BE SELECTED BY BANJO'S MARKETING DEPARTMENT

CODE	FINISH	SPECIFICATIONS
AC1		OPAC ACRYLIC (ILLUMINATED) WHITE
AP2		1.8MM VINYL COLOURED FILM ON ALUMINIUM PANEL PANTONE 2617 (SLAY LEAF GREEN)
AP3		ALUMINIUM BORDER, PANTONE 7504 (RYE)



2 DINING BANJOS SIGNAGE
1 : 25

3 ROOFTOP SIGN
1 : 25



SIGNAGE EXAMPLE

No.	Date	Description
1	15/02	SERVICES FIRST PLOT
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3	08/03	AMENDMENTS VIA FEEDBACK
4	18/03	AMENDMENTS VIA FEEDBACK
5	09/05	HYDRAULICS UPDATED
6	24/05	AMENDMENTS VIA FEEDBACK
7	06/07	FOR CONSTRUCTION

BANJO'S

LENAH VALLEY

98 AUGUSTA RD, LENA VALLEY,
TASMANIA 7008

SIGNAGE

Project number	TBC	A30	Scale @ A3	1 : 25
Date	02/15/22			
Drawn by	CC			
Checked by	ML			



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PROJECT MANAGERS,
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4	18/03	AMENDMENTS VIA FEEDBACK
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6	24/05	AMENDMENTS VIA FEEDBACK
7	06/07	FOR CONSTRUCTION

BANJO'S
LENAH VALLEY
98 AUGUSTA RD, LENAH VALLEY,
TASMANIA 7008

3D VIEWS		
Project number	TBC	A31
Date	02/15/22	
Drawn by	CC	
Checked by	ML	
		Scale @ A3



6th July 2022

To whom it may concern,

Service Assessment - Banjo's Bakery at 98 Augusta Road, Lenah Valley TAS 7008

A site assessment and service review has been conducted for 98 Augusta Road Lenah Valley to determine the most appropriate methodology in relation to the provision of a waste and recycling collection service at the above address. The assessment conclusions/recommendations are as follows:

- A medium size Rear lift truck is considered the most appropriate method for the provision of the service/s.
- Veolia would service the bins from Augusta road reversing into the site driveway to access the bin compound at the rear of the building.
- The Veolia operator would access the building's designated waste area to service the bins.
- The site at 98 Augusta Road Lenah Valley is of a level ground surface making the site preferable.
- Visibility is reasonable.
- Trucks will have flashing safety beacon lights operating and reversing cameras.
- Peak traffic times will be avoided when providing collection services
- A formal Risk Assessment / Work Instruction will be provided to Veolia operators detailing the above requirements and restrictions, prior to commencing the service/s.

Should further information be required in relation to the above, please contact the undersigned on 0459 836 924.

Regards

A handwritten signature in blue ink, appearing to read 'M Robinson', with a horizontal line extending to the right.

Martin Robinson
General Manager Business Development/Marketing



Radsby Services

ABN 34 620 174 361
29-33 Wellington Street
North Hobart
Tasmania 7002
T: 03 6281 2715

23rd June 2022

Ben Icon
Senior Statutory Planner
City Life

Dear Ben,

Further to correspondence between Helen Ayers and Mark Willmot from Banjos Corp., please find detailed below clarification in response the RFI dated 21 June 2022

PLN Fi1.5 – all the external signage is backlit, non-flashing, and operational during the proposed store opening hours (6am-6pm)

PLN Fi2.2 – no changes are proposed for parking to the rear of the building, approved under PLN-17-480, the omitted parking spaces have been added on the attached plan.

PLN Fi2.3 – there are no changes or additional external lighting proposed?

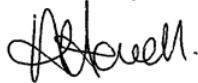
PLN Fi2.4 – The following table details delivery movements.

Supplier	Deliveries per week	Time on site	Approx. delivery time
Flour	1	15 min	7am
Fresh veg	2	5 min	2pm
Dry goods 1	1	10 min	10am
Dry goods 2	1	10 min	11am
Packaging	1	10 min	3pm
coffee	0.5 (fortnightly)	10 min	1pm
meat	1	10 min	9am

PA Fi2 – Plan A02 notes a delivery area utilising the short term parking spaces at the front of the store. Can you please provide advice on what is currently approved for the site under PLN-17-480? We do not believe we require any additional delivery requirements from the previously approved business on this site or adjacent businesses. Further we believe the earlier closing and the nature of the Banjos business represents a significant improvement over the previously approved business operations.

For clarification, outside of the change in hours of operation and the addition of external signage, there are no proposed works or changes to the externals of the building or site.

Yours sincerely



Aimee Howell
Compliance Officer
Radsby Services

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Radsby Services

ABN 34 620 174 361
29-33 Wellington Street
North Hobart
Tasmania 7002
T: 03 6281 2715

29th April 2022

Occupant
100 Augusta Road
Lenah Valley
TAS 7008

Dear Occupant,

RE: Proposed Development – 98 August Road, Lenah Valley

This letter advises you of a proposed development at 98 Augusta Road, Lenah Valley for Banjo's Bakery.

On the 21st of April 2022, a planning permit was submitted to Hobart City Council advising of the development.

Yours sincerely



Aimee Howell
Compliance Officer
Radsby Services

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Radsby Services

ABN 34 620 174 361
29-33 Wellington Street
North Hobart
Tasmania 7002
T: 03 6281 2715

28th April 2022

Dear Helen Ayres,

RE: Proposed Development – 98 August Road, Lenah Valley

Regarding application PLN-22-236, can the owner please be amended to:

Huon Central Pty Ltd
Jim Tsiakis
101 Sugar Loaf Road
Risdon Vale
TAS 7016
jatsiakis@bigpond.com.au

Yours sincerely



Aimee Howell
Compliance Officer
Radsby Services

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Radsby Services

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29-33 Wellington Street
North Hobart
Tasmania 7002
T: 03 6281 2715

28th April 2022

Huon Central Pty Ltd
101 Sugar Loaf Road
Risdon Vale
TAS 7016

Dear Huon Central Pty Ltd,

RE: Proposed Development – 98 Augusta Road, Lenah Valley

This letter advises you of a proposed development at 98 Augusta Road, Lenah Valley for Banjo's Bakery.

On the 21st of April 2022, a planning permit was submitted to Hobart City Council advising of the development.

As part of the application, Huon Central Pty Ltd has been listed as the Owner of the property.

Yours sincerely



Aimee Howell
Compliance Officer
Radsby Services

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**RESULT OF SEARCH**

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



SEARCH OF TORRENS TITLE

VOLUME 128815	FOLIO 1
EDITION 5	DATE OF ISSUE 15-Sep-2021

SEARCH DATE : 12-Apr-2022

SEARCH TIME : 12.44 PM

DESCRIPTION OF LAND

City of HOBART

Lot 1 on Plan 128815

Derivation : Part of 242 Acres Gtd. to E.S.P. Bedford & Anr.

Prior CT 71165/1

SCHEDULE 1

B774244 TRANSFER to HUON CENTRAL PTY LTD

SCHEDULE 2

Reservations and conditions in the Crown Grant if any

B695811 BURDENING EASEMENTS set forth in Instrument

C63704 BENEFITING EASEMENT: a right of carriageway over the
"RIGHT OF WAY 'B'" on Plan No. 128815 Registered
17-Feb-1998 at 12.03 PMC63944 BURDENING EASEMENT: a right of carriageway
(appurtenant to Lot 2 on Plan No. 128815) over the
"RIGHT OF WAY 'A'" on Plan No. 128815 Registered
17-Feb-1998 at 12.04 PMC575794 AGREEMENT pursuant to Section 71 of the Land Use
Planning and Approvals Act 1993 Registered
25-Jun-2004 at noonC825393 MORTGAGE to Retirement Benefits Fund Board
Registered 26-Oct-2007 at 12.01 PME81083 TRANSFER of MORTGAGE C825393 to QT Investment
Management Pty Ltd Registered 31-Jul-2017 at noonUNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

[illegible]

**RESULT OF SEARCH**

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



SEARCH OF TORRENS TITLE

VOLUME	FOLIO
144191	0
EDITION	DATE OF ISSUE
1	14-Jul-2005

SEARCH DATE : 29-Apr-2022

SEARCH TIME : 03.44 PM

DESCRIPTION OF LAND

City of HOBART

The Common Property for Strata Scheme 144191

Derivation : Part of 242 Acres. Gtd. to E.S.P. Bedford & anor.

Prior CT 128815/2

SCHEDULE 1STRATA CORPORATION NUMBER 144191, 100 AUGUSTA ROAD, LENA
VALLEYSCHEDULE 2

Reservations and conditions in the Crown Grant if any
SUBJECT TO a right of drainage reserve for the owners and
occupiers for the time being of the land described in
Certificate of Title Volume 332 Folio 33 over the
strip of land marked "DRAIN 0.61 WIDE" on Plan No.
128815

C63704 BURDENING EASEMENT: a right of carriageway
(appurtenant to Lot 1 on Plan No. 128815) over the
"RIGHT OF WAY 'B'" on Plan No. 128815 Registered
17-Feb-1998 at 12.03 PM

C63944 BENEFITING EASEMENT: a right of carriageway over the
"RIGHT OF WAY 'A'" on Plan No. 128815 Registered
17-Feb-1998 at 12.04 PM

102834 BOUNDARY FENCES AND OTHER CONDITIONS in Transfer

C780523 APPLICATION by owners to amend strata plan by
deleting Lot 100 & adding Lots 2 & 3 Registered
10-Jul-2007 at noon

E232946 APPLICATION for registration of change of by-laws
Registered 23-Apr-2021 at noon

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations



FOLIO PLAN

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



CITY/TOWN HOBART		STRATA PLAN		Registered Number 144191
SUBURB/LOCALITY LENAH VALLEY		SHEET 1 OF 3 SHEETS C 780523		
FOLIO REFERENCE 128815/2		NAME OF STRATA SCHEME 100 AUGUSTA ROAD, LENAH VALLEY		STRATA TITLES ACT 1998 REGISTERED 14 JUL 2005
SITE COMPRISES THE WHOLE OF LOT 2 ON PLAN No. P 128815				<i>Alice Kawa</i> Recorder of Titles
MAPSHEET MUNICIPAL CODE No. 114	LAST UPI No. 2101908	SCALE 1: 500	LENGTHS IN METRES	

SITE PLAN

NEW SHEET 1

NOTES: (i) ALL BUILDINGS ON THE SITE TO BE SHOWN ON SHEET 1.
(ii) BUILDING TO SITE BOUNDARY OFFSETS OF LESS THAN 2.00 METRES TO BE SHOWN ON SHEET 1.

STAGED/COMMUNITY DEVELOPMENT. SCHEME No. (IF APPLICABLE)	<i>David Miller</i> Council ACTING MANAGER Delegate 26/6/07 Date	<i>PA Li</i> Registered Land Surveyor Date 1-3-07
LODGED BY JOHN BAMFORD & ASSOCIATES		

(5-1)



FOLIO PLAN

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



STRATA PLAN SHEET 2 OF 3 SHEETS C780523	STRATA TITLES ACT 1998 Council Delegate	Registered Number <div style="font-size: 24pt; font-weight: bold;">144191</div>
<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 15%;"> Scale: 1:300 GROUND FLOOR NEW SHEET 2 </div> <div style="width: 85%;"> </div> </div> <div style="margin-top: 20px;"> <p>THE HORIZONTAL LOT BOUNDARIES ARE SHOWN BY HEAVY UNBROKEN LINES DEFINED BY -</p> <ul style="list-style-type: none"> THE SITE BOUNDARY THE FACE OF RENDERED WALL THE EDGE OF CONCRETE PATH THE OUTSIDE FACE OF WALL LABELLED GHJ THE PICKET FENCE THE FOOT OF THE RETAINING WALL LABELLED AB MEASUREMENT WHERE THE BOUNDARY IS OPEN <p>MEASUREMENTS IN BRACKETS ARE FOR BOUNDARY FIXATION ONLY</p> <p>F IS AT THE INTERSECTION OF THE SITE BOUNDARY AND THE PROLONGATION OF THE LINE OF THE EDGE OF CONCRETE PATH</p> <p>E IS ON THE PROLONGATION OF THE EDGE OF CONCRETE PATH LABELLED CD</p> <p>THE VERTICAL LOT BOUNDARIES EXTEND FROM 2.00 METRES BELOW GROUND LEVEL TO 10.00 METRES ABOVE GROUND LEVEL</p> <p>(SEE SURVEY NOTES FOR OPEN BOUNDARY FIXATION)</p> </div> <div style="display: flex; justify-content: flex-end; align-items: flex-end; margin-top: 20px;"> <div style="width: 40%; text-align: center;"> Registered Land Surveyor </div> <div style="width: 10%; text-align: center;"> 1-3-07 Date </div> </div>		

(5-2)



FOLIO PLAN

RECORDED OF TITLES

Issued Pursuant to the Land Titles Act 1980



<div>STRATA PLAN</div>		Registered Number <div>144191</div>
NEW SHEET 3 OF 3 SHEETS C780523		STRATA TITLES ACT 1998
NAME OF BODY CORPORATE: STRATA CORPORATION No.144191 100 AUGUSTA ROAD, LENAH VALLEY		
ADDRESS FOR THE SERVICE OF NOTICES: 100 AUGUSTA ROAD, LENH VALLEY, 7008		
<p style="text-align: center; margin-top: 0;">SURVEYORS CERTIFICATE</p> <p>I, <u>John Martindale Bamford</u>, of <u>Hobart</u>,</p> <p>a surveyor registered under the Surveyors Act 2002 certify that</p> <p>this plan are within the site boundaries of the folio stated on sheet 1</p> <p>and any encroachment beyond those boundaries is properly authorised according to law.</p> <hr/> <div style="display: flex; justify-content: space-between;"> Registered Land Surveyor Date <u>1-3-07</u> Ref No. <u>3010</u> </div>	<p style="text-align: center; margin-top: 0;">COUNCIL CERTIFICATE</p> <p>I certify that the <u>HOBART CITY</u> Council has:</p> <p>(a) approved the lots shown in this plan and</p> <p>(b) issued this certificate of approval in accordance</p> <p style="margin-left: 40px;">with section 31 of the Strata Titles Act 1998</p> <hr/> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> Council Delegate </div> <div style="text-align: center;">Date <u>26/6/07</u></div> <div style="text-align: center;">Ref No. <u>5482504</u></div> </div>	
GENERAL UNIT ENTITLEMENTS		
LOT	UNIT ENTITLEMENT	
1	10	
2	10	
3	10	
4	10	
TOTAL	40	

(5-3)

Planning: #255458

Property

98 AUGUSTA ROAD LENAH VALLEY TAS 7008

People**Applicant ***AIMEE HOWELL
98 AUGUSTA ROAD
LENAH VALLEY TAS 7008
0406 244 772
aimee@radsby.com.au**Owner ***AIMEE HOWELL
98 AUGUSTA ROAD
LENAH VALLEY TAS 7008
0406 244 772
aimee@radsby.com.au**Entered By**AIMEE HOWELL
98 AUGUSTA ROAD
LENAH VALLEY TAS 7008
0406 244 772
aimee@radsby.com.au**Use**

Cafe

Details

Have you obtained pre application advice?

If YES please provide the pre application advice number eg PAE-17-xx

Are you applying for permitted visitor accommodation as defined by the State Government Visitor Accommodation Standards? Click on help information button for definition. If you are not the owner of the property you MUST include signed confirmation from the owner that they are aware of this application. *

☒ No

Is the application for SIGNAGE ONLY? If yes, please enter \$0 in the cost of development, and you must enter the number of signs under Other Details below. *

☒ No

If this application is related to an enforcement action please enter Enforcement Number

Details

What is the current approved use of the land / building(s)? *

Currently is vacant

Please provide a full description of the proposed use or development (i.e. demolition and new dwelling, swimming pool and garage) *

Fit out of current building to a cafe

Estimated cost of development *

800000.00

Existing floor area (m2)

Proposed floor area (m2)

Site area (m2)

Carparking on Site

Total parking spaces

6

Existing parking spaces

N/A

☒ Other (no selection chosen)

Hours of Business

Are the proposed hours of business different from the existing?

What days and hours of operation are proposed for the business?

Existing Proposed

Monday to Friday

From
06:00

To

18:00

Monday to Friday

From

To

Saturday

From
06:00

To

18:00

Saturday

From

To

Sunday

From
06:00

To

18:00

Sunday

From

To

Number of Employees

List the total number of people who will be working on the site.

Proposed number of employees

20

Existing number of employees

Goods Deliveries

Will there be any commercial vehicles accessing the site?

Type of Vehicle

Trips per Week

Very Large (Semi trailer)	<input type="text"/>
Large	<input type="text"/>
Medium	3 - 4
Small	<input type="text"/>

Outdoor storage / seating / number of beds

Is outdoor storage proposed? ☒ No

Other Details

Does the application include signage? *

☒ No

How many signs, please enter 0 if there are none involved in this application? *

Tasmania Heritage Register

Is this property on the Tasmanian Heritage Register?

Documents

Required Documents

Title (Folio text and Plan and FolioPlan-128815-1.pdf Schedule of Easements) *
Plans (proposed, existing) * FolioText-128815-1.pdf
Plans (proposed, existing) * BANJOS - LENA VALLEY - 08-04-22.pdf

**7.2.4 369 HUON ROAD, SOUTH HOBART - PARTIAL DEMOLITION,
ALTERATIONS, AND SWIMMING POOL
PLN-22-124 - FILE REF: F22/81807**

Address: 369 Huon Road, South Hobart

Proposal: Partial Demolition, Alterations, and Swimming Pool

Expiry Date: 7 September 2022

Extension of Time: Not applicable

Author: Victoria Maxwell

RECOMMENDATION

That pursuant to the *Hobart Interim Planning Scheme 2015*, the Council approve the application for partial demolition, alterations, and swimming pool at 369 Huon Road South Hobart TAS 7004 for the reasons outlined in the officer's report and a permit containing the following conditions be issued:

GEN

The use and/or development must be substantially in accordance with the documents and drawings that comprise PLN-22-124 369 HUON ROAD SOUTH HOBART TAS 7004 - Final Planning Documents except where modified below.

Reason for condition

To clarify the scope of the permit.

PLN s1

The northern end of the pool must be:

1. excavated to a depth of 700mm below existing ground level; and
2. the wall height reduced to no more than 2.87m above existing ground level.

Advice:

The amended plans dated 12/07/2022 are considered to meet this condition.

Reason for condition

To reduce the visual impacts of the bulk and scale of the boundary wall to the eastern neighbour.

PLN s2

The existing deck between the patio and pool structure must be retained, and the wall length of the pool structure must be reduced to no more than 9m.

Advice:

The amended plans dated 12/07/2022 are considered to meet this condition.

Reason for condition

To reduce the visual impacts of the bulk and scale of the boundary wall to the eastern neighbour.

PLN s3

The surface on the eastern neighbour's side of the wall must be finished with the same stone-facing as indicated for the north eastern and north western elevations.

Reason for condition

To reduce the visual impacts of the bulk and scale of the boundary wall to the eastern neighbour.

ENV 1

Sediment and erosion control measures sufficient to prevent sediment from leaving the site must be installed prior to any disturbance of the site,

and maintained until all areas of disturbance have been stabilized or re-vegetated.

Advice:

For further guidance in preparing a Soil and Water Management Plan – in accordance with Fact sheet 3 Derwent Estuary Program click [here](#).

Reason for condition

To avoid the sedimentation of roads, drains, natural watercourses, Council land that could be caused by erosion and runoff from the development, and to comply with relevant State legislation.

ADVICE

The following advice is provided to you to assist in the implementation of the planning permit that has been issued subject to the conditions above. The advice is not exhaustive and you must inform yourself of any other legislation, by-laws, regulations, codes or standards that will apply to your development under which you may need to obtain an approval. Visit the Council's [website](#) for further information.

Prior to any commencement of work on the site or commencement of use the following additional permits/approval may be required from the Hobart City Council.

BUILDING PERMIT

You may need building approval in accordance with the *Building Act 2016*. Click [here](#) for more information.

This is a Discretionary Planning Permit issued in accordance with section 57 of the *Land Use Planning and Approvals Act 1993*.

PLUMBING PERMIT

You may need plumbing approval in accordance with the *Building Act 2016*, *Building Regulations 2016* and the National Construction Code. Click [here](#) for more information.

NOISE REGULATIONS

Click [here](#) for information with respect to noise nuisances in residential areas.

WASTE DISPOSAL

It is recommended that the developer liaise with the Council's Cleansing and Solid Waste Unit regarding reducing, reusing and recycling materials associated with demolition on the site to minimise solid waste being directed to landfill.





Further information regarding waste disposal can also be found on the Council's [website](#).

FEES AND CHARGES

Click [here](#) for information on the Council's fees and charges.

DIAL BEFORE YOU DIG

Click [here](#) for dial before you dig information.

- | | |
|---------------|---|
| Attachment A: | PLN-22-124 - 369 HUON ROAD SOUTH HOBART
TAS 7004 - Planning Committee or Delegated
Report ↓  |
| Attachment B: | PLN-22-124 - 369 HUON ROAD SOUTH HOBART
TAS 7004 - CPC Agenda Documents ↓  |
| Attachment C: | PLN-22-124 - 369 HUON ROAD SOUTH HOBART
TAS 7004 - Planning Referral Officer Cultural
Heritage Report ↓  |
| Attachment D: | PLN-22-124 - 369 HUON ROAD SOUTH HOBART
TAS 7004 - Amended Plans ↓  |

**APPLICATION UNDER HOBART INTERIM PLANNING SCHEME 2015**

Type of Report: Committee
Council: 29 August 2022
Expiry Date: 7 September 2022
Application No: PLN-22-124
Address: 369 HUON ROAD , SOUTH HOBART
Applicant: PRIME DESIGN (TAS) PTY LTD
10 GOODMAN COURT
INVERMAY 7248
Proposal: Partial Demolition, Alterations, and Swimming Pool
Representations: Twenty (20)
Performance criteria: Inner Residential Zone Development Standards, Historic Heritage Code

1. Executive Summary

- 1.1 Planning approval is sought for Partial Demolition, Alterations, and Swimming Pool at 369 HUON ROAD SOUTH HOBART TAS 7004.
- 1.2 More specifically the proposal includes:
- demolition of existing terrace, planter boxes and ancillary structures on eastern side of dwelling,
 - construction of raised terrace around a new 7.5m x 3.6m swimming pool to be installed to north east of the dwelling adjacent to two existing terraces,
 - the pool will have an infinity overflow on the northern (deep) end;
 - construction of a 14.6m long masonry wall along the eastern side boundary,
 - glass 1.2m high pool fence and barrier along the internal edges of the pool,
 - the boundary wall will range from 1.75m to 3.3m in height,
 - the boundary wall is proposed to be cement block with stone facing on the side of the subject site and untreated concrete block on the side of the neighbour.
- 1.3 The proposal relies on performance criteria to satisfy the following standards and codes:
- 1.3.1 Inner Residential Zone - Side setback and length
 - 1.3.3 Historic Heritage Code - Heritage Place - Demolition and New Works

- 1.4 Twenty (20) representation objecting to the proposal were received within the statutory advertising period between 28th March and 11th April 2022.
- 1.5 The proposal is recommended for approval subject to conditions.
- 1.6 The final decision is delegated to the Council, because more than five objections were received.
- 1.7 This application was considered by the City Planning Committee on 8 August 2022 and the item was deferred with a suggestion that there would be further consideration of the design to address the concerns held by the representors. The applicant has advised that they do not wish to make any further amendments to the application. This item returns to the Committee unchanged.

2. Site Detail

- 2.1 The site is located on the north eastern side Huon Road, with rear frontage to Wellesley Street. Surrounding uses are residential dwellings, predominantly on larger urban lots, however the eastern neighbouring lot has been subdivided in the past, creating two small lots fronting Huon Road and Wellesley Street respectively.



Figure 1: Site plan (Geo Cortex, 2022)

- 2.2 The subject site contains a substantial two storey heritage residence, located close to the Huon Road frontage. Whilst it fronts this road, the dwelling is orientated to the north (rear elevation). It sits within a large lot, which retains respectable proportions of the dwelling to its grounds. The land slopes down to the north. A pedestrian entrance is provided onto Wellesley Street.



Figure 2: 3D Aerial view to West (Bing Maps, 2022)

- 2.3 The building site is located below an existing patio off the main living area. French doors open onto the patio. The patio is at ground level, whilst the existing wooden deck extends over the falling slope to the north. The deck is retained to a level of approximately 1 metre currently, with a wooden enclosed balustrade and planter boxes.



Figure 3: View of building site from Wellesley St - the cubby house has since been removed (Officer photo, 2022)

- 2.4 The building site falls approximately 600mm over 9 metres. The blue marks on the fence shows the change in level in Figure 4 below. A 1.5m high paling fence separates the subject site from its eastern neighbours in the vicinity of the building site. The proposed elevated deck has 1.8m high privacy screening on the boundary.



Figure 4: View of building site (Officer photo, 2022)

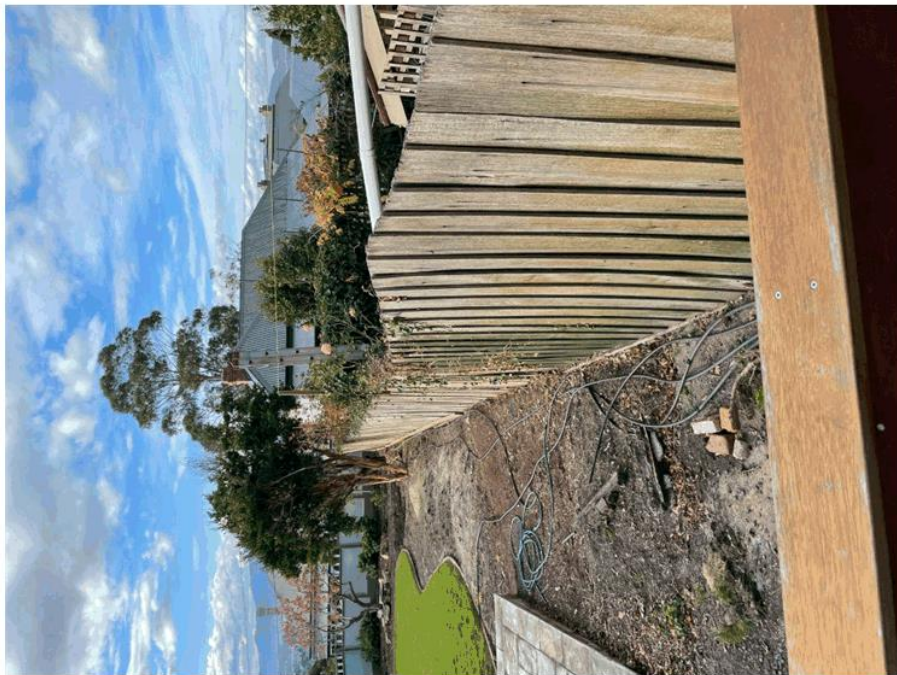


Figure 5: View of building site from deck to be demolished (Officer photo, 2022)

3. Proposal

3.1 Planning approval is sought for Partial Demolition, Alterations, and Swimming Pool at 369 HUON ROAD SOUTH HOBART TAS 7004.

3.2 More specifically the proposal includes:

- demolition of existing terrace, planter boxes and ancillary structures on eastern side of dwelling,
- construction of raised terrace around a new 7.5m x 3.6m swimming pool to be installed to north east of the dwelling adjacent to two existing terraces,
- the pool will have an infinity overflow on the northern (deep) end;
- construction of a 14.6m long masonry wall along the eastern side boundary,
- glass 1.2m high pool fence and barrier along the internal edges of the pool,
- the boundary wall will range from 1.75m to 3.3m in height,
- the boundary wall is proposed to be cement block with stone facing on the side of the subject site and untreated concrete block on the side of the neighbour.

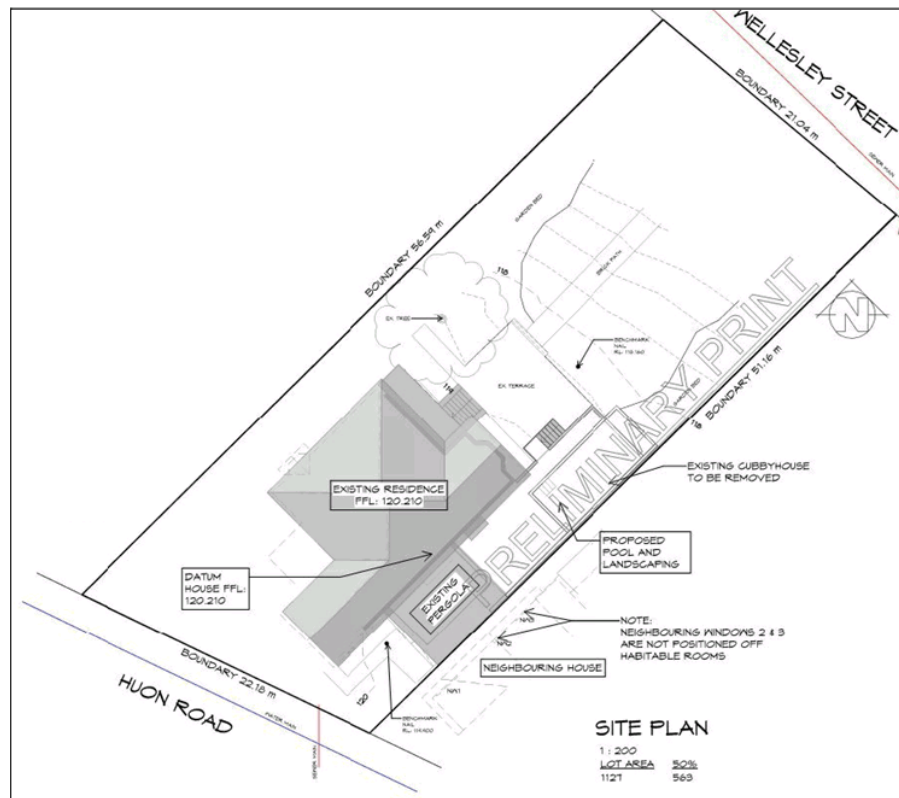


Figure 6: Applicant Site Plan (Prime Design, 2022)

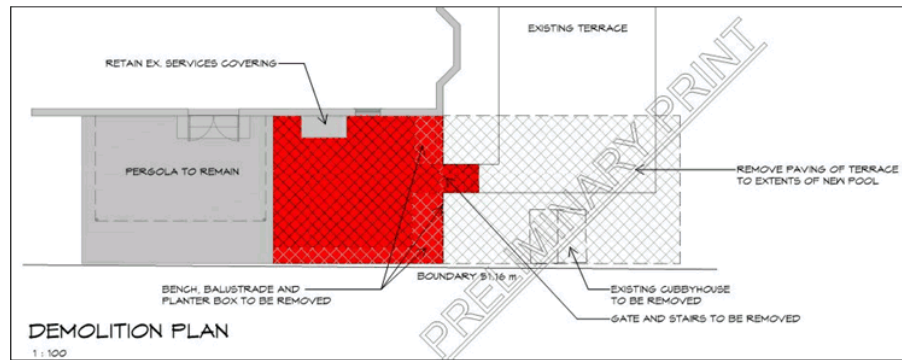


Figure 7: Demolition plan (Prime Design, 2022)

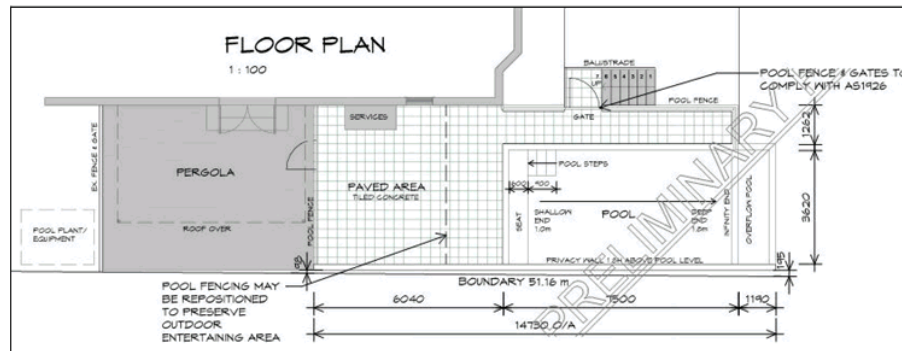


figure 8: Proposed Pool and Deck Plan (Prime Design, 2022)

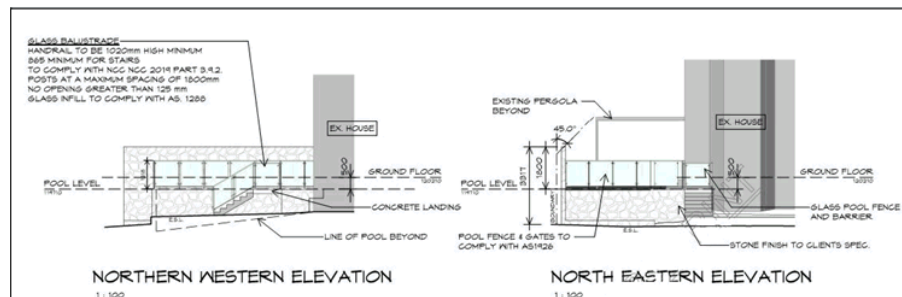


Figure 9: North East and North West Elevations (internal views within site) (Prime Design, 2022)

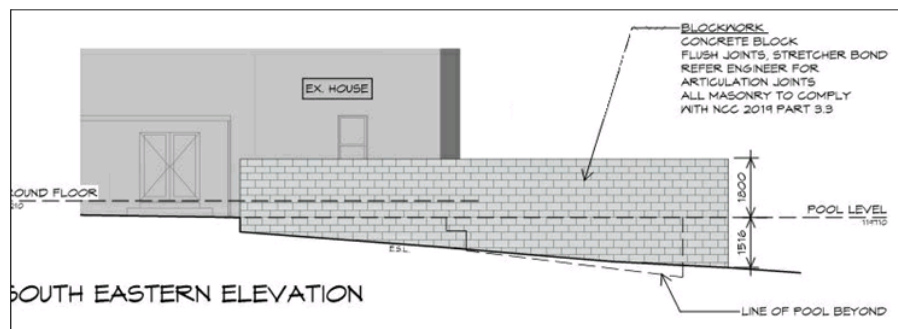


Figure 10: South West Elevation (view from Eastern neighbour's property) (Prime Design, 2022)

4. Background

4.1 Applications relevant to this site and proposal are listed below;

- NBW-19-84 - Internal works removing chimney breast and fireplace
- PLN-09-01579-01 - House extension/addition
- PLN-07-00136-01 - Fencing
- PLN-06-00348-01 (inc BLD-06-00348-01) - House Extension & Fence
- ENF-06-00348-01 - House Extension & Fence

5. Concerns raised by representors

5.1 Twenty (20) representations objecting to the proposal were received within the statutory advertising period between 28th March and 11th April 2022.

5.2 The following table outlines the concerns raised in the representations received. Those concerns which relate to a discretion invoked by the proposal are addressed in Section 6 of this report.

Correction required to plans. The two NNW side windows on the neighboring property are actually to habitable rooms and the sole source of natural light into these rooms.
The plans do not correctly show the rear boundary of 367 Huon Road, which suggests that the south eastern neighbour has more garden than is in reality. That neighbour is only 394m ² .
The Site, Demolition and Floor plans incorrectly locate the existing decking. It is shown extending to the boundary fence, whereas it actually ends 1 metres from the boundary due to the Privet hedge.

The plans incorrectly locate the dwelling on 367 Huon Road, which is only 1.5m off the mutual boundary.
The proposal will reduce all day natural light to 367 Huon Road residence and garden, including the vegetable garden.
It will run at a height of at least 3 metres 15.7m along the NNW side boundary of 367 Huon Road, which is unreasonable.
The proposed wall height will make the loss of light to the living room windows morbid and oppressive, which could affect occupants' mental health and generate additional power costs.
The proposed 3m+ concrete wall will be ugly and create an unreasonable visual impact to the neighbour. The neighbour will be unable to paint or plant to screen the wall as it is not on the mutual boundary.
The selection of material is offensive; sandstone blocks only on the applicant's side of the wall. The degree of impact could have been reduced with some consideration of the amenity of adjacent properties.
The height of the wall along most of the side boundary for 367 Huon Road will create a claustrophobic effect to that property.
The height of the wall will affect the airflow and therefore the micro climate of the backyard for 367 Huon Road, with regard to growing and enjoying that space.
The location of the swimming pool along the boundary fence will increase noise. Given the applicants' very larger garden, there is potential for this pool to be located further from neighbouring boundaries and dwellings, making the proposal more satisfactory to neighbours.
The location of pool pump and maintenance infrastructure will be close to neighbours' outdoor space and will be a constant noise that is unreasonable to subject residents to.
The proposal will devalue 367 Huon Road.
The proposed wall will be only 98mm from the existing timber fence at the south and 195mm at the northern end. This does not provide sufficient space for airflow or maintenance.
The proposal fails in building regulations on boundary walls and shows no consideration to neighbourly or community spirit. Council is requested to provide that all relevant building code provisions to enable further response.
Council is requested to provide an extension to the advertising period as there were only 8 business days in which to respond after receiving the notice in the mail.
Shadow diagrams should be provided.

The swimming pool should be built away from the boundary or as an inground pool, allowing the wall height to be reduced and the wall material should be change to sandstone or timber to provide a more aesthetic appearance to the neighbours.
The plans do not indicate how the wall will impact on 367 Huon Rd, nor does it should the relative sizes of the two properties. The plans do not indicate exactly where the wall will be, or its height in relation to the boundary between the two properties
Concerns over the inaccuracy of the Title plan, that does not show the resubdivision of 367 Huon Rd to create 2 Wellesley St.

6. Assessment

- 6.1 The *Hobart Interim Planning Scheme 2015* is a performance based planning scheme. To meet an applicable standard, a proposal must demonstrate compliance with either an acceptable solution or a performance criterion. Where a proposal complies with a standard by relying on one or more performance criteria, the Council may approve or refuse the proposal on that basis. The ability to approve or refuse the proposal relates only to the performance criteria relied on.
- 6.2 The site is located within the Inner Residential zone of the *Hobart Interim Planning Scheme 2015*.
- 6.3 The existing use is a Single Dwelling. The proposed use is Single Dwelling. The existing use is a No Permit Required use in the zone. The proposed use is a No Permit Required use in the zone.
- 6.4 The proposal has been assessed against:
- 6.4.1 D11.0 - Inner Residential Zone
- 6.4.4 E13.0 Historic Heritage Code
- 6.5 The proposal relies on the following performance criteria to comply with the applicable standards:
- 6.5.1 Inner Residential Zone:
- Side boundary setback and length – Part D 10.4.2 P3*
- 6.5.3 Historic Heritage Code:

Demolition and New Works on a Heritage Place - E13.7.1 P1 E13.7.2 P1- P5

6.6 Each performance criterion is assessed below.

6.7 Setback and Building Envelope Part D 11.4.2 P13

6.7.1 The acceptable solution at clause 11.4.2 A3 requires the combined length of walls within 1.5m of the side boundary to be no more than 9 metres.

6.7.2 The proposal includes a combined wall length of 14.7m located 0.2m off the side boundary.

6.7.3 The proposal does not comply with the acceptable solution; therefore assessment against the performance criterion is relied on.

6.7.4 The performance criterion at clause 11.4.2 P3 provides as follows:

The siting and scale of a dwelling must:

(a) not cause an unreasonable loss of amenity to adjoining properties, having regard to:

(i) reduction in sunlight to a habitable room (other than a bedroom) of a dwelling on an adjoining property;

(ii) overshadowing the private open space of a dwelling on an adjoining property;

(iii) overshadowing of an adjoining vacant property; or

(iv) visual impacts caused by the apparent scale, bulk or proportions of the dwelling when viewed from an adjoining property;

(b) provide separation between dwellings on adjoining properties that is consistent with that existing on established properties in the area; and

(c) not cause an unreasonable reduction in sunlight to an existing solar energy installation on:

(i) an adjoining property; or

(ii) another dwelling on the same site.

6.7.5 The proposed structure is located on the eastern side boundary of the property, slightly behind the existing dwelling and side patio/deck.

There are only two adjoining properties that are likely to be affected by the proposal. Neighbours to the south (across Huon Road), west (on the

other side of the house) and north (across Wellesley St) are sufficiently removed from the building site to be unaffected in any way by loss of sunlight, overshadowing, out of the established character separation between dwellings, visual impacts, or overshadowing of solar panel installations.

Eastern neighbours 367 Huon Road and 2 Wellesley Street are the result of previous subdivision of 367 Huon Road. The lots now comprise 395m² (2 Wellesley St) and 394m² (367 Huon Rd).

2 Wellesley St is located to the north east of the building site. Given the height of the rear end of the pool structure, it will protrude an additional 1.8m above the height of the existing 1.5metre high fence. This will be visible to the residents of this property when in the rear garden. Views towards the new structure will be oblique with a small section of the wall extending along this neighbour's side boundary. It is considered that the visual impact of this is limited being in the rear south western corner and backdropped by the substantial two storey dwelling on the subject site.

The proposal will not cause a reduction in sunlight to a habitable room or solar installation on site, it will not overshadow the private open space of 2 Wellesley St and it will not cause a significant visual impact and is not out of the established character separation between dwellings for this neighbour.

The neighbour most affected by this proposal is 367 Huon Road, which is a small lot on the south eastern side of the subject lot. This neighbouring lot contains a moderate sized 1920s Californian Bungalow single storey dwelling, located close to the Huon Road frontage and setback approximately 1.5m from the mutual boundary with the subject site. Due to the previous subdivision, the rear garden is very small for this property, with only between 3.5m and 6.5m distance from the rear of the dwelling to the rear boundary. The short distance and abundant vegetation along the northern boundary with 2 Wellesley St restricts sunlight to the garden.

The alignment along the side boundary is similar to the south eastern boundary of the neighbour's (367's) land with the side wall of the dwelling at 365 Huon Road, which also runs along the entire rear side boundary of this neighbour (367). The proposal reflects the existing situation on the south eastern boundary (of 367) and there are many structures to the sides of dwellings along this portion of Huon Road, giving an established character of separation between dwellings and properties.

Representations against the impact on this property, as well as concerns over the lack of detail on the plans were received, due to the 3.3m maximum height of the 14m long concrete wall on the boundary of this lot. Sunshade diagrams were requested to demonstrate the degree of impact, which show that the proposal will cause approximately half of the garden to lose sunlight in the afternoon on 21st June. The subject site existing dwelling and screening structures already shade the living spaces of this neighbouring dwelling from lunch time onwards. The new and increased impact by this proposal is mostly to the neighbour's garden. However, the garden will receive at least three (3) hours of sunlight on 21st June and the southern portion of the garden will not be shaded by the proposal. The layout of the neighbour's garden is such that the proposed wall will mainly overshadow the chicken coop. As such it is hard to justify the loss of sunlight to this.

The neighbour's main concern is the visual bulk of the structure when viewed from the adjoining lot.

Through negotiation, the applicants amended the plans to shorten and slightly lower the proposed boundary wall from 14 metres to 9 metres, this was partially achieved by retaining the existing deck, which had been noted for replacement. However, the wall length on the northern end has also been brought back by digging in the pool some 700mm and reducing the overflow pool. The northern extent of the wall has been reduced by 1.5 metres and lowered by 400mm. Notwithstanding these changes, it is calculated that the wall of the pool will still extend beyond the north western corner of the neighbour's property, creating an almost 3 metre high wall on the north western boundary. In recognition of this, the applicants have agreed to change the appearance of the wall, from cement block to stone finish, in keeping with the wall treatments for the internal elevations on site.

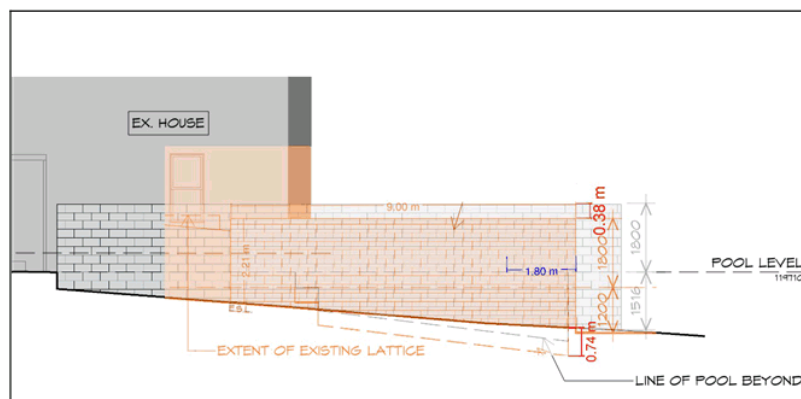


Figure 12: Overlay of Amended plans on Advertised plans (Prime Design, 2022)

- 6.7.6 Whilst the attempts to reduce the impact on the neighbours is laudable, it cannot overcome the fact that there will be a visual impact on this neighbour due to the configuration of that neighbouring lot. The wall will still extend beyond the north west corner of the neighbour's boundary and increases the visual bulk from a 1.5m high fence to 2.7m high at the north west corner.

Notwithstanding the fact that the neighbour considers it an important aspect for the use of the garden, being the shorter portion of fencing, the planning scheme does not provide much justification to force refusal. The proposed wall certainly will create a visual impact caused by the "apparent scale, bulk and proportions" when viewed from the adjoining property, but the question remains; is this an unreasonable impact? The increase in wall height by over a metre from the existing fence upon the small-sized garden is significant, but the distance being less than 4 metres on the side boundary can be argued to reduce the importance of the structural bulk. The neighbour's garden is full of prolific vegetation and plantings, which makes the space appear more confined.

Given that the proposed plans only slightly extended beyond the building envelope and the amended plans with the reduced the wall height wall fit within the building envelope, it suggests that a 3 metre high wall on a side boundary should be acceptable. Of course general development standards cannot address specific site characteristics, nor the expectations that residents have for amenity and enjoyment of their property. It is acknowledged that the planning controls do not always sufficiently protect existing amenity of neighbours; allowing development at the expense and to the detriment of adjacent neighbours. In this instance the site has a substantial garden, with plenty of options for alternative location of the swimming pool, which would cause less impact on neighbours. However, the proposal sufficiently addresses the applicable development standards to be able to be recommended for approval. It is noted that significant improvement through the reduced height, length, relocation of pumps, etc away from the mutual boundary and surface treatment of the neighbour's side of the fence will reduce the impact, but they will not remove all impacts for this neighbour.

Should the application be approved, it is recommended that the permit be conditioned to require amendment that reflects the design of the amended plans, to minimise the impact on the neighbour. The amended plans are

provided as an attachment to this report.

6.7.7 The proposal complies with the performance criterion.

6.8 Historic Heritage Code - Demolition in a Heritage Place - E13.7.1 P1

6.8.1 There is no acceptable solution for E13.7.1.

6.8.2 The proposal includes demolition of the existing wooden deck on the eastern side of the dwelling.

6.8.3 There is no acceptable solution; therefore assessment against the performance criterion is relied on.

6.8.4 The performance criterion at clause E13.7.1 P1 provides as follows:

Demolition must not result in the loss of significant fabric, form, items, outbuildings or landscape elements that contribute to the historic cultural heritage significance of the place unless all of the following are satisfied;

(a) there are, environmental, social, economic or safety reasons of greater value to the community than the historic cultural heritage values of the place;

(b) there are no prudent and feasible alternatives;

(c) important structural or façade elements that can feasibly be retained and reused in a new structure, are to be retained;

(d) significant fabric is documented before demolition.

6.8.5 The application was referred to Council's Cultural Heritage Officer, who advised the following;

Number 369 Huon Road 'Kinnoull' is a listed place in Table E13.1 of HIPS 2015. The two storey brick Federation era property has dual frontages onto both Huon Road and Wellesley Street. The proposed works must be assessed against E13.7 Development Standards for Heritage Places.

Proposal:

- Pool with associated landscaping, fencing, and gates

E13.7 Development Standards for Heritage Places

E13.7.1 Demolition

Objective:

To ensure that demolition in whole or part of a heritage place does not result in the loss of historic cultural heritage values unless there are exceptional circumstances.

Performance Criteria 1

Demolition must not result in the loss of significant fabric, form, items, outbuildings or landscape elements that contribute to the historic cultural heritage significance of the place unless all of the following are satisfied;

- (a) there are, environmental, social, economic or safety reasons of greater value to the community than the historic cultural heritage values of the place;*
- (b) there are no prudent and feasible alternatives;*
- (c) important structural or façade elements that can feasibly be retained and reused in a new structure, are to be retained;*
- (d) significant fabric is documented before demolition.*

The proposed demolition involves removal of landscaping elements and excavation for the in ground pool, there is no demolition of heritage fabric that contributes to the character of the heritage precinct. The proposed demolition works are considered to satisfy Performance Criteria 1 of E13.8.1

6.8.6 The proposal complies with the performance criterion.

6.9 Historic Heritage Code - New Works in a Heritage Place - E13.7.2 P1 - P5

6.9.1 There is no acceptable solution for E13.7.2.

6.9.2 The proposal includes new pool and decking.

6.9.3 There is no acceptable solution; therefore assessment against the performance criterion is relied on.

6.9.4 The performance criterion at clause E13.7.2 P1-P5 provides as follows:

Development must not result in any of the following:

- (a) loss of historic cultural heritage significance to the place through incompatible design, including in height, scale, bulk, form, fenestration, siting, materials, colours and finishes;*
- (b) substantial diminution of the historic cultural heritage significance of*

the place through loss of significant streetscape elements including plants, trees, fences, walls, paths, outbuildings and other items that contribute to the significance of the place.

- 6.9.5 The application was referred to Council's Cultural Heritage Officer, who advised the following;

E13.7.2 Buildings and Works other than Demolition

Objective:

To ensure that development at a heritage place is:

- (a) undertaken in a sympathetic manner which does not cause loss of historic cultural heritage significance; and*
- (b) designed to be subservient to the historic cultural heritage values of the place and responsive to its dominant characteristics.*

Performance Criteria 1

Development must not result in any of the following:

- (a) loss of historic cultural heritage significance to the place through incompatible design, including in height, scale, bulk, form, fenestration, siting, materials, colours and finishes;*
- (b) substantial diminution of the historic cultural heritage significance of the place through loss of significant streetscape elements including plants, trees, fences, walls, paths, outbuildings and other items that contribute to the significance of the place.*

The proposed in ground pool, associated landscaping, fencing and gate will not result in detriment to the significance of the heritage place as the proposed works are located in the yard to the side of the existing residence. There will be no detrimental impact upon the residence or wider streetscape. Performance Criteria 1 of E13.7.2 is considered satisfied.

In conclusion the proposal is considered to satisfy the relevant provisions of E13 the Historic Heritage Code of HIPS 2015.

- 6.9.6 The proposal complies with the performance criterion.

7. Discussion

- 7.1 Planning approval is sought for Partial Demolition, Alterations, and Swimming Pool at 369 HUON ROAD SOUTH HOBART TAS 7004.

7.2 The application was advertised and received twenty (20) representations. The representations raised concerns including inaccuracy of plans, loss of sunlight, loss of airflow and a feeling of claustrophobia to the neighbouring property, unreasonable visual impact through height and materials, location of pool infrastructure, request to extend advertising period and request to reduce the wall structure. The grounds relating to loss of sunlight, visual bulk and height of the wall have been discussed above. The applicants have provided an amended design that goes some way to addressing these concerns the plans showing the amended design are an attachment to this report). The applicant has agreed to provide the same stone treatment on the neighbour's side of the wall to assist in visual softening of the structure. The pool pump, etc has been relocated to the opposite side of the pool and enclosed to reduce noise to surrounding neighbours.

7.3 The representation concerned with loss of airflow through the garden, having two solid structures on both side boundaries is not supported by the planning scheme and in fact is perpetuated by the wording in the planning scheme that development should follow a consistent separation to adjoining properties. Given that a number of properties have development built to the side boundary, including the southern neighbour to 367 Huon Rd, it would appear that this is not a consideration under clause 11.4.2 of the planning scheme.

The representation requesting additional time relates to the fact that Council posts letters to neighbours, which may take more than three working days to be received. In this case the letters were sent Thursday 24th March and advertising commenced Monday 28th March, completing on Monday 11th April. It is not clear how representors only had 8 working days in which to respond. Notwithstanding this, the representation was received within time and did not require additional time.

The representations noting unreasonable bulk and scale, materials, location of pool infrastructure have been addressed by the amended plans. Other representation grounds are not supported by the planning scheme.

7.4 The proposal has been assessed against the relevant provisions of the planning scheme and is considered to perform well.

7.5 The proposal has been assessed by other Council officers, including the Council's Development Engineer and Cultural Heritage Officer. The officers have raised no objection to the proposal, subject to conditions.

7.6 The proposal is recommended for approval.

8. Conclusion

- 8.1 The proposed Partial Demolition, Alterations, and Swimming Pool at 369 HUON ROAD SOUTH HOBART TAS 7004 satisfies the relevant provisions of the *Hobart Interim Planning Scheme 2015*, and as such is recommended for approval.

9. Recommendations

That: Pursuant to the *Hobart Interim Planning Scheme 2015*, the Council approve the application for Partial Demolition, Alterations, and Swimming Pool at 369 HUON ROAD SOUTH HOBART TAS 7004 for the reasons outlined in the officer's report and a permit containing the following conditions be issued:

GEN

The use and/or development must be substantially in accordance with the documents and drawings that comprise PLN-22-124 369 HUON ROAD SOUTH HOBART TAS 7004 - Final Planning Documents except where modified below.

Reason for condition

To clarify the scope of the permit.

PLN s1

The northern end of the pool must be:

1. **excavated to a depth of 700mm below existing ground level; and**
2. **the wall height reduced to no more than 2.87m above existing ground level.**

Advice:

The amended plans dated 12/07/2022 are considered to meet this condition.

Reason for condition

To reduce the visual impacts of the bulk and scale of the boundary wall to the eastern neighbour.

PLN s2

The existing deck between the patio and pool structure must be retained, and the wall length of the pool structure must be reduced to no more than 9m.

Advice:

The amended plans dated 12/07/2022 are considered to meet this condition.

Reason for condition

To reduce the visual impacts of the bulk and scale of the boundary wall to the eastern neighbour.

PLN s3

The surface on the eastern neighbour's side of the wall must be finished with the same stone-facing as indicated for the north eastern and north western elevations.

Reason for condition

To To reduce the visual impacts of the bulk and scale of the boundary wall to the eastern neighbour.

ENV 1

Sediment and erosion control measures sufficient to prevent sediment from leaving the site must be installed prior to any disturbance of the site, and maintained until all areas of disturbance have been stabilized or re-vegetated.

Advice:

For further guidance in preparing a Soil and Water Management Plan – in accordance with Fact sheet 3 Derwent Estuary Program click [here](#).

Reason for condition

To avoid the sedimentation of roads, drains, natural watercourses, Council land that could be caused by erosion and runoff from the development, and to comply with relevant State legislation.

ADVICE

The following advice is provided to you to assist in the implementation of the planning permit that has been issued subject to the conditions above. The advice is not exhaustive and you must inform yourself of any other legislation, by-laws, regulations, codes or standards that will apply to your development under which you may need to obtain an approval. Visit the Council's [website](#) for further information.

Prior to any commencement of work on the site or commencement of use the following additional permits/approval may be required from the Hobart City Council.

BUILDING PERMIT

You may need building approval in accordance with the *Building Act 2016*. Click [here](#) for more information.

This is a Discretionary Planning Permit issued in accordance with section 57 of the *Land Use Planning and Approvals Act 1993*.

PLUMBING PERMIT

You may need plumbing approval in accordance with the *Building Act 2016*, *Building Regulations 2016* and the National Construction Code. Click [here](#) for more information.

NOISE REGULATIONS

Click [here](#) for information with respect to noise nuisances in residential areas.

WASTE DISPOSAL

It is recommended that the developer liaise with the Council's Cleansing and Solid Waste Unit regarding reducing, reusing and recycling materials associated with demolition on the site to minimise solid waste being directed to landfill.

Further information regarding waste disposal can also be found on the Council's [website](#).

FEES AND CHARGES

Click [here](#) for information on the Council's fees and charges.

DIAL BEFORE YOU DIG

Click [here](#) for dial before you dig information.



(Victoria Maxwell)

As signatory to this report, I certify that, pursuant to Section 55(1) of the Local Government Act 1993, I hold no interest, as referred to in Section 49 of the Local Government Act 1993, in matters contained in this report.



(Ben Ikin)

Senior Statutory Planner

As signatory to this report, I certify that, pursuant to Section 55(1) of the Local Government Act 1993, I hold no interest, as referred to in Section 49 of the Local Government Act 1993, in matters contained in this report.

Date of Report: 29 July 2022

Attachment(s):

Attachment B - CPC Agenda Documents

Attachment C - Planning Referral Officer Cultural Heritage Report

Attachment D - Amended Plans

Planning: #252224

Property

369 HUON ROAD SOUTH HOBART TAS 7004

**People****Applicant ***PRIME DESIGN (TAS) PTY LTD
03 6332 3790
info@primedesigntas.com.au**Owner ***Timothy and Bonnie Paine
369 Huon Road
SOUTH HOBART TAS 7004
0437 667 377
nathan@greenviewpoolsandlandscapes.com.au**Entered By**PRIME DESIGN (TAS) PTY LTD
03 6332 3790
info@primedesigntas.com.au**Use**

Single dwelling

Details

Have you obtained pre application advice?

☒ No

If YES please provide the pre application advice number eg PAE-17-xx

Are you applying for permitted visitor accommodation as defined by the State Government Visitor Accommodation Standards? Click on help information button for definition. If you are not the owner of the property you MUST include signed confirmation from the owner that they are aware of this application. *

☒ No

Is the application for SIGNAGE ONLY? If yes, please enter \$0 in the cost of development, and you must enter the number of signs under Other Details below. *

☒ No

If this application is related to an enforcement action please enter Enforcement Number

Details

What is the current approved use of the land / building(s)? *

Single dwelling

Please provide a full description of the proposed use or development (i.e. demolition and new dwelling, swimming pool and garage) *

Proposed pool and landscape works

Estimated cost of development *

50000.00

Existing floor area (m2)

385.00

Proposed floor area (m2)

72.67

Site area (m2)

1127

Carparking on Site

Total parking spaces

2

Existing parking spaces

2

N/A

☒ Other (no selection chosen)

Other Details

Does the application include signage? *

☒ No

How many signs, please enter 0 if there are none involved in this application? *

0

Tasmania Heritage Register

Is this property on the Tasmanian Heritage Register?

☒ No

Documents

Required Documents

Title (Folio text and Plan and Title - 369 Huon Road.pdf
Schedule of Easements) *

Plans (proposed, existing) * 2022_03_04 PDH21064 (Rev 02) 369 Huon Road, South Hobart.pdf

PROPOSED NEW POOL

369 HUON ROAD

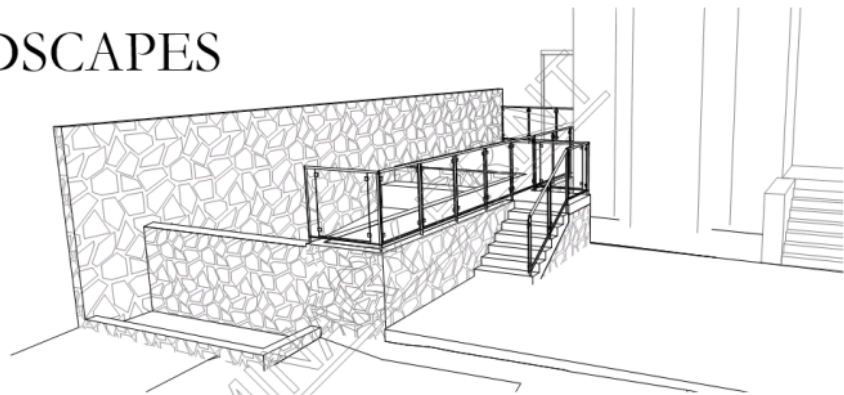
SOUTH HOBART

GREENVIEW POOLS & LANDSCAPES

PDH21064

BUILDING DRAWINGS

No	DRAWING
01	SITE PLAN
02	DEMOLITION PLAN
03	FLOOR PLAN
04	ELEVATIONS



PLANNING

GENERAL PROJECT INFORMATION

TITLE REFERENCE: 96001/7
SITE AREA: 1127 m²
DESIGN WIND SPEED:
SOIL CLASSIFICATION: H1
CLIMATE ZONE: 7
ALPINE AREA: NO
CORROSIVE ENVIRONMENT: NO
BAL RATING: TBA
OTHER KNOWN HAZARDS: NONE KNOWN

POOL AREA	30.00 m ² (3.23 SQUARES)
POOL DECK AREA	42.67 m ² (4.59 SQUARES)
TOTAL AREA	72.67 7.81



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info@primedesigntas.com.au primedesigntas.com.au
Accredited Building Practitioner: Frank Gekus -No CC246A

MARCH 2022

GENERAL NOTES

- CHECK & VERIFY ALL DIMENSIONS & LEVELS ON SITE
- WRITTEN DIMENSIONS TO TAKE PREFERENCE OVER SCALED
- ALL WORK TO BE STRICTLY IN ACCORDANCE WITH NCC 2019, ALL S.A.A. CODES & LOCAL AUTHORITY BY-LAWS
- ALL DIMENSIONS INDICATED ARE FRAME TO FRAME AND DO NOT ALLOW FOR WALL LININGS
- CONFIRM ALL FLOOR AREAS
- ALL PLUMBING WORKS TO BE STRICTLY IN ACCORDANCE WITH A.S. 3500 & APPROVED BY COUNCIL INSPECTOR
- BUILDER/PLUMBER TO ENSURE ADEQUATE FALL TO SITE CONNECTION POINTS IN ACCORDANCE WITH A.S. 3500 FOR STORMWATER AND SEWER BEFORE CONSTRUCTION COMMENCES
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE ENGINEER'S STRUCTURAL DRAWINGS
- ALL WINDOWS AND GLAZING TO COMPLY WITH A.S. 1288 & A.S. 2047
- ALL SET OUT OF BUILDINGS & STRUCTURES TO BE CARRIED OUT BY A REGISTERED LAND SURVEYOR AND CHECKED PRIOR TO CONSTRUCTION
- IF CONSTRUCTION OF THE DESIGN IN THIS SET OF DRAWINGS DIFFER FROM THE DESIGN AND DETAIL IN THESE AND ANY ASSOCIATED DOCUMENTS BUILDER AND OWNER ARE TO NOTIFY DESIGNER
- BUILDER'S RESPONSIBILITY TO COMPLY WITH ALL PLANNING CONDITIONS
- BUILDER TO HAVE STAMPED BUILDING APPROVAL DRAWINGS AND PERMITS PRIOR TO COMMENCEMENT OF CONSTRUCTION
- CONSTRUCTION TO COMPLY WITH AS 3459, READ IN CONJUNCTION WITH BUSHFIRE ATTACK LEVEL (BAL) ASSESSMENT REPORT.

SITE DETAIL

HORIZONTAL DATUM IS MGA (GDA94)

VERTICAL DATUM IS AHD

WARNINGS:

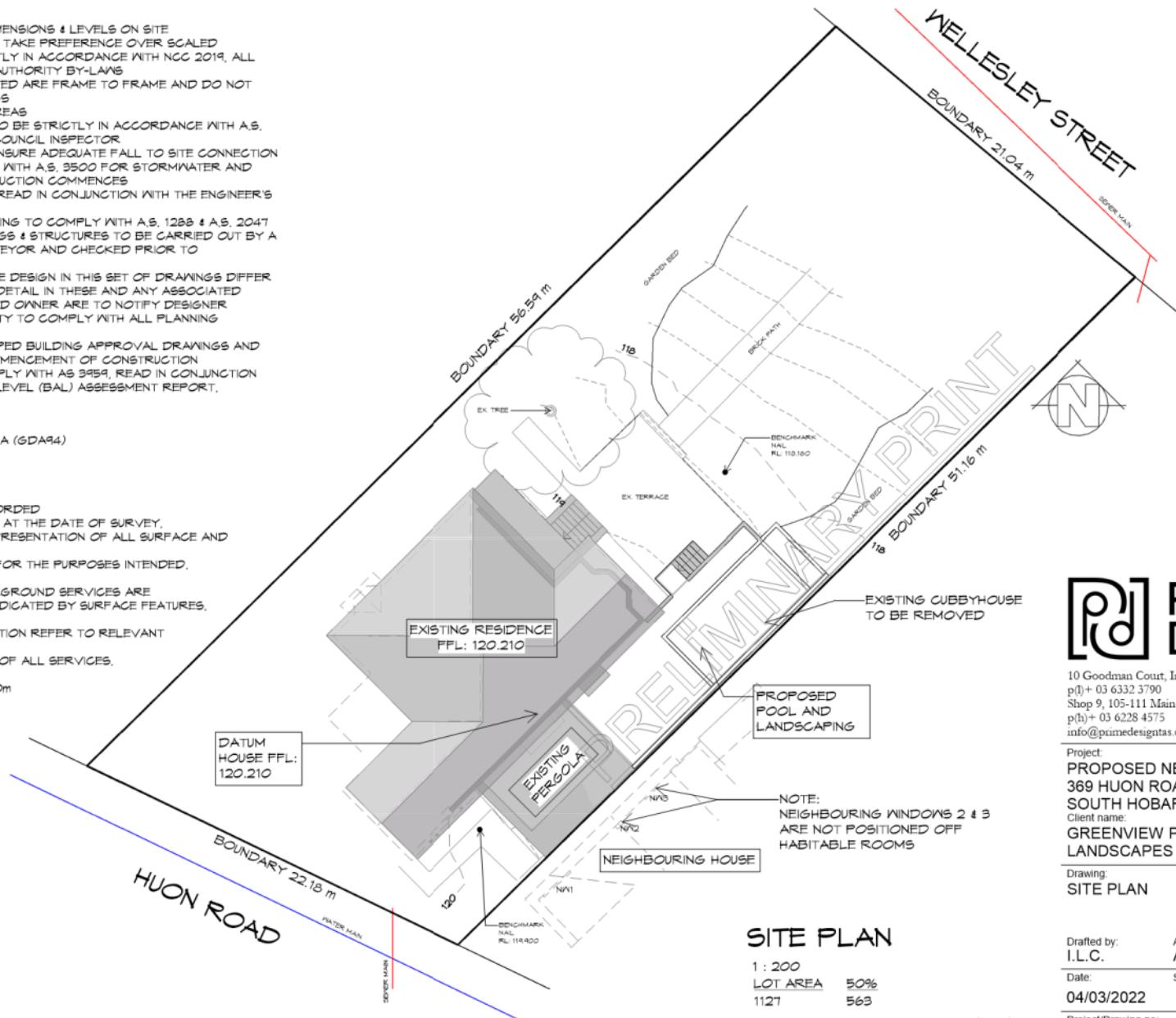
THE DETAIL SHOWN / RECORDED

- MAY ONLY BE CORRECT AT THE DATE OF SURVEY.
- IS NOT A COMPLETE REPRESENTATION OF ALL SURFACE AND UNDERGROUND DETAIL.
- SHOULD ONLY BE USED FOR THE PURPOSES INTENDED.

THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AS INDICATED BY SURFACE FEATURES.

PRIOR TO ANY CONSTRUCTION REFER TO RELEVANT AUTHORITIES FOR DETAILED LOCATION OF ALL SERVICES.

CONTOUR INTERVAL 0.200m



SITE PLAN

1 : 200
LOT AREA 50%
1127 563

PLANNING

NOTE: DO NOT SCALE OFF DRAWINGS

Prime Design

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Shop 9, 105-111 Main Road, Moonah Hobart 7009
p(h) + 03 6228 4575
info@primedesigntas.com.au primedesigntas.com.au

Project:

PROPOSED NEW POOL
369 HUON ROAD
SOUTH HOBBART
Client name:
GREENVIEW POOLS &
LANDSCAPES

Drawing:

SITE PLAN

Drafted by:
I.L.C.

Approved by:
A.C.M.

Date:

Scale:

04/03/2022

1 : 200

Project/Drawing no:

Revision:

PDH21064 -01

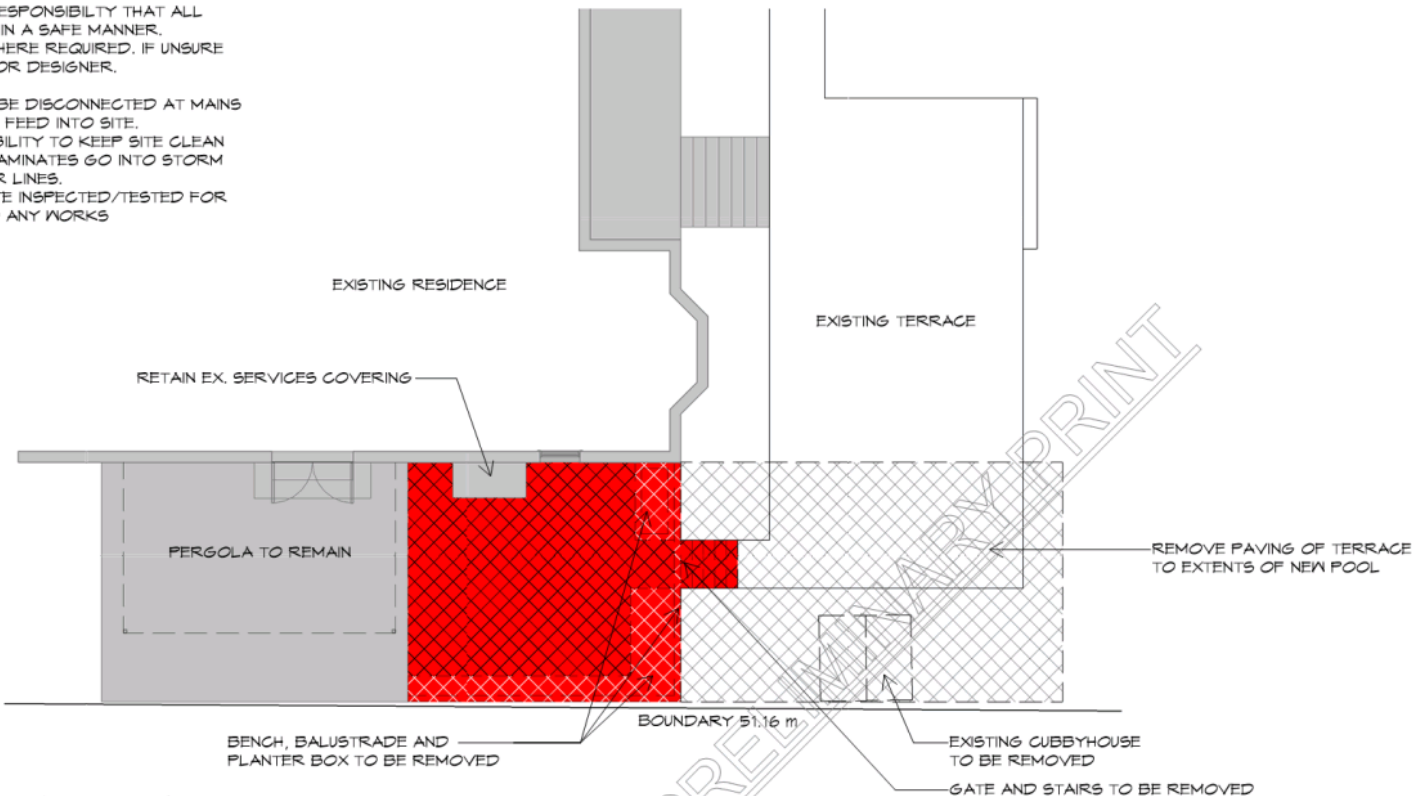
02

bdaa
BUILDING DESIGNERS
ASSOCIATION OF AUSTRALIA

Accredited building practitioner: Frank Gekus - No CC246A

DEMOLITION NOTE:

- IT IS THE BUILDERS RESPONSIBILITY THAT ALL WORKS TO BE DONE IN A SAFE MANNER.
- BUILDER TO PROP WHERE REQUIRED, IF UNSURE CONTACT ENGINEER OR DESIGNER.
- GAP ALL PLUMBING.
- ALL ELECTRICAL TO BE DISCONNECTED AT MAINS BOARD/STREET 1 OF FEED INTO SITE.
- BUILDERS RESPONSIBILITY TO KEEP SITE CLEAN TO ENSURE NO CONTAMINATES GO INTO STORM WATER/SEWER WATER LINES.
- BUILDER TO HAVE SITE INSPECTED/TESTED FOR ASBESTOS PRIOR TO ANY WORKS



DEMOLITION PLAN

1 : 100

PLANNING
NOTE: DO NOT SCALE OFF DRAWINGS



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Drafted by: I.L.C. Approved by: A.C.M.

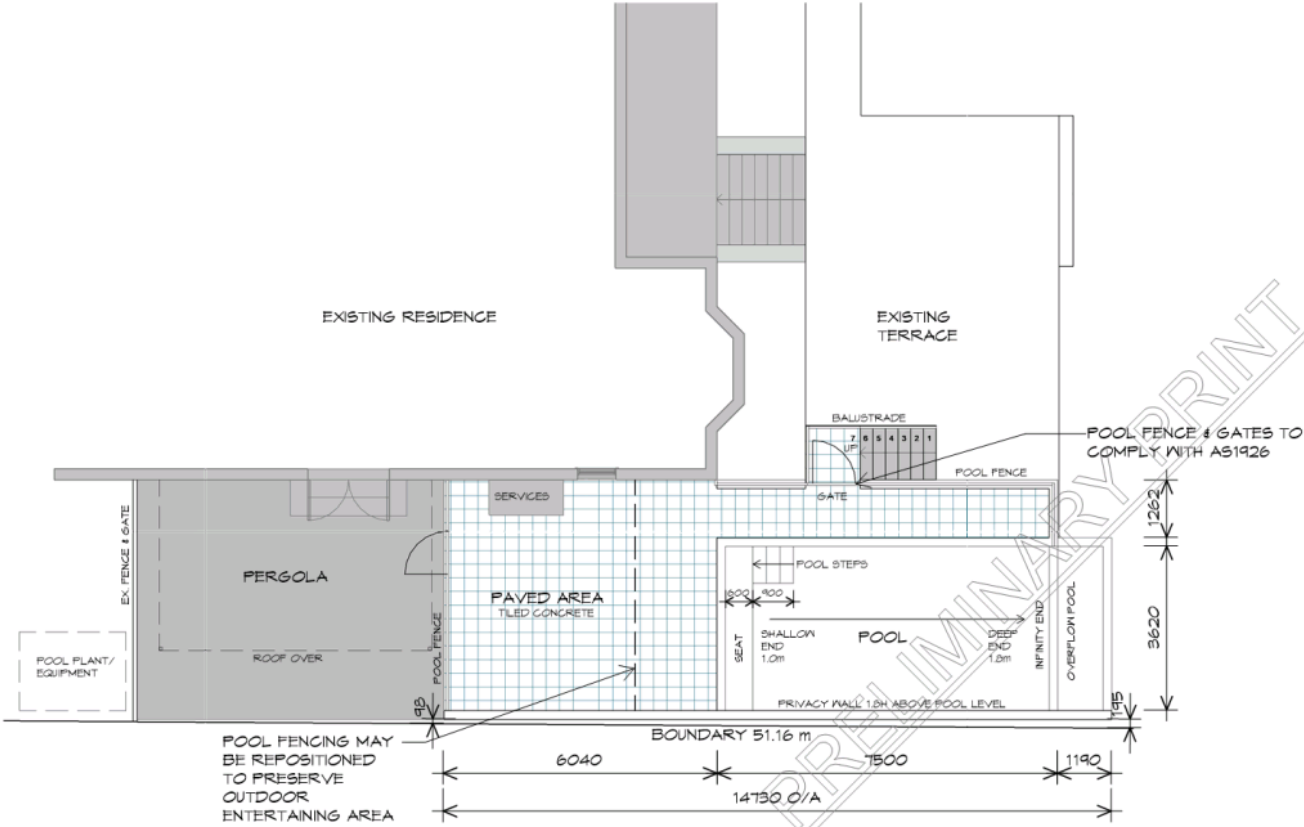


Drawing:
DEMOLITION PLAN

Date: 04/03/2022 Scale: 1 : 100

Project/Drawing no: PDH21064 -02 Revision: 02

Accredited building practitioner: Frank Geskus -No CC246A



FLOOR PLAN
1 : 100

POOL AREA	30.00 m2 (3.23 SQUARES)
POOL DECK AREA	42.67 m2 (4.59 SQUARES)
TOTAL AREA	72.67 7.81

NOTE:
FLOOR AREAS INCLUDE TO EXTERNAL FACE OF
BUILDING UNLESS OTHERWISE STATED.

PLANNING
NOTE: DO NOT SCALE OFF DRAWINGS

STAIRS		
No RISERS	RISER H'T	TREAD DEPTH
7	164	280

GOING NON SLIP TO COMPLY NCC 2019



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Drawing:
FLOOR PLAN

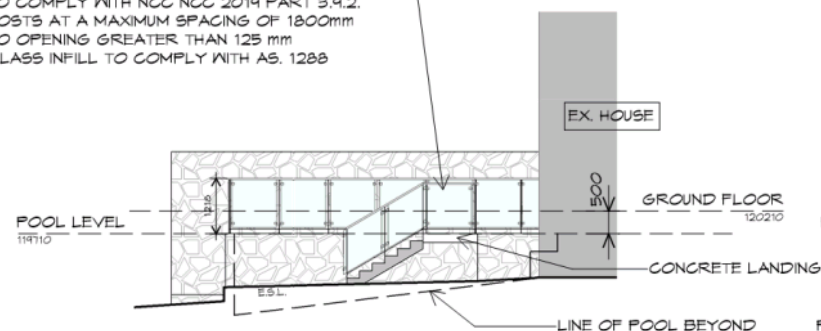
Drafted by:
A.C.M.
Date:
04/03/2022

Approved by:
A.C.M.
Scale:
1 : 100



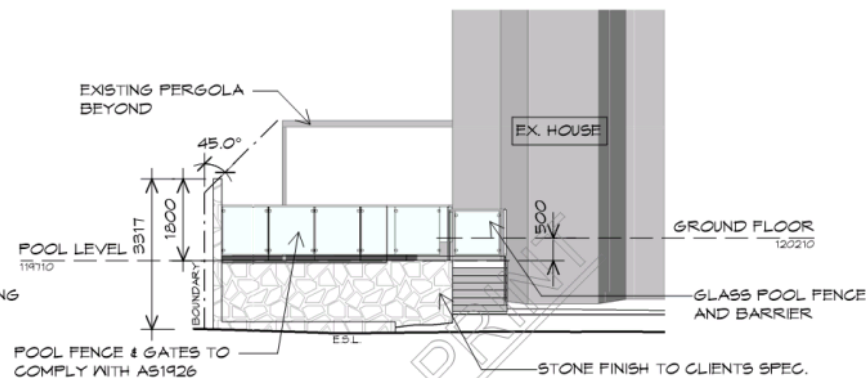
Project/Drawing no:
PDH21064 -03
Revision:
02
Accredited building practitioner: Frank Gekus -No CC246A

GLASS BALUSTRADE
HANDRAIL TO BE 1020mm HIGH MINIMUM
865 MINIMUM FOR STAIRS
TO COMPLY WITH NCC NCC 2019 PART 3.9.2.
POSTS AT A MAXIMUM SPACING OF 1800mm
NO OPENING GREATER THAN 125 mm
GLASS INFILL TO COMPLY WITH AS. 1288



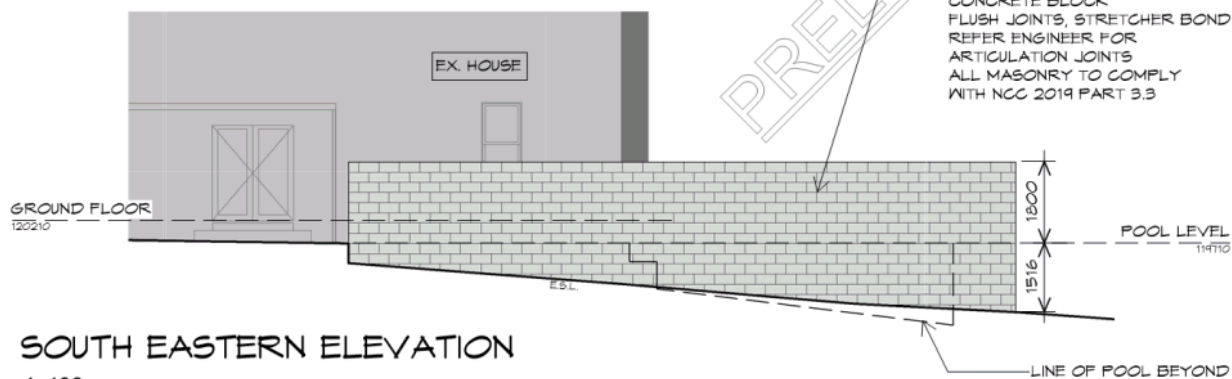
NORTHERN WESTERN ELEVATION

1 : 100



NORTH EASTERN ELEVATION

1 : 100



SOUTH EASTERN ELEVATION

1 : 100

PLANNING
NOTE: DO NOT SCALE OFF DRAWINGS



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PROPOSED NEW POOL
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SOUTH HOBART
Client name:
GREENVIEW POOLS &
LANDSCAPES

Drawing:
ELEVATIONS

Drafted by: I.L.C. Approved by: A.C.M.

Date: 04/03/2022 Scale: 1 : 100

Project/Drawing no: PDH21064 -04 Revision: 02

Accredited building practitioner: Frank Gekus -No CC246A

**RESULT OF SEARCH**

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

SEARCH OF TORRENS TITLE

VOLUME 96001	FOLIO 7
EDITION 6	DATE OF ISSUE 07-Dec-2018

SEARCH DATE : 05-Nov-2021

SEARCH TIME : 12.52 PM

DESCRIPTION OF LAND

City of HOBART

Lot 7 on Plan 96001 (formerly being P646)

Derivation : Part of 299 Acres Gtd. to R.L. Murray.

Prior CT 2888/84

SCHEDULE 1

M728458 TRANSFER to TIMOTHY DAVID PAINE and BONNIE GRACE
CAMPBELL PAINE Registered 07-Dec-2018 at 12.01 PM

SCHEDULE 2

Reservations and conditions in the Crown Grant if any

E156176 MORTGAGE to National Australia Bank Limited

Registered 07-Dec-2018 at 12.02 PM

UNREGISTERED DEALINGS AND NOTATIONS

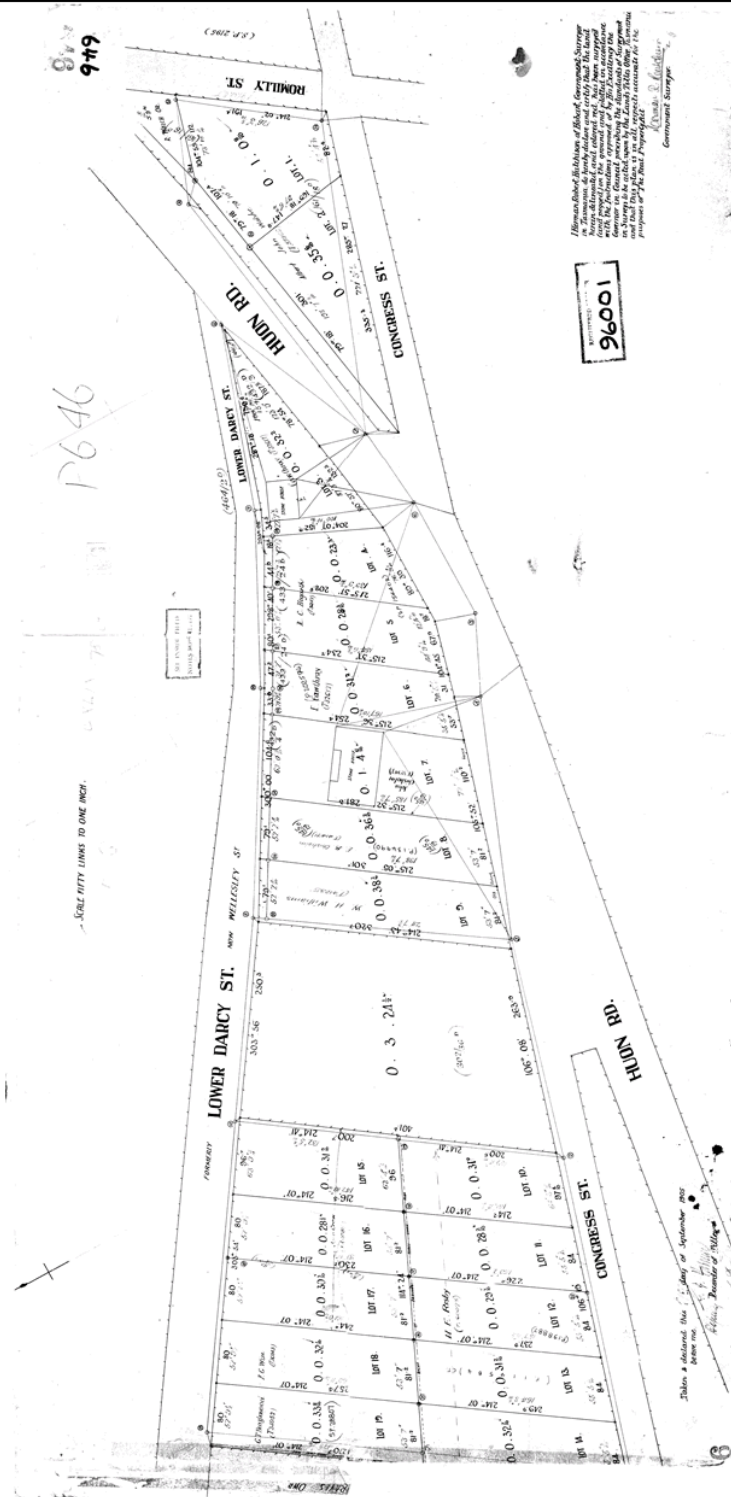
No unregistered dealings or other notations



FOLIO PLAN

RECORDED OF TITLES

Issued Pursuant to the Land Titles Act 1980



Application Referral Cultural Heritage - Response

From:	Allie Costin
Recommendation:	Proposal is acceptable without conditions.
Date Completed:	
Address:	369 HUON ROAD, SOUTH HOBART
Proposal:	Partial Demolition, Alterations, and Swimming Pool
Application No:	PLN-22-124
Assessment Officer:	Victoria Maxwell,

Referral Officer comments:

Number 369 Huon Road 'Kinnoull' is a listed place in Table E13.1 of HIPS 2015. The two storey brick Federation era property has dual frontages onto both Huon Road and Wellesley Street. The proposed works must be assessed against E13.7 Development Standards for Heritage Places.

Proposal:

- Pool with associated landscaping, fencing, and gates

E13.7 Development Standards for Heritage Places

E13.7.1 Demolition

Objective:

To ensure that demolition in whole or part of a heritage place does not result in the loss of historic cultural heritage values unless there are exceptional circumstances.

Performance Criteria 1

Demolition must not result in the loss of significant fabric, form, items, outbuildings or landscape elements that contribute to the historic cultural heritage significance of the place unless all of the following are satisfied;

- (a) there are, environmental, social, economic or safety reasons of greater value to the community than the historic cultural heritage values of the place;*
- (b) there are no prudent and feasible alternatives;*
- (c) important structural or façade elements that can feasibly be retained and reused in a new structure, are to be retained;*
- (d) significant fabric is documented before demolition.*

The proposed demolition involves removal of landscaping elements and excavation for the in ground pool, there is no demolition of heritage fabric that contributes to the character of the heritage precinct. The proposed demolition works are considered to satisfy Performance Criteria 1 of E13.8.1

E13.7.2 Buildings and Works other than Demolition

Objective:

To ensure that development at a heritage place is:

- (a) undertaken in a sympathetic manner which does not cause loss of historic cultural heritage significance; and*
- (b) designed to be subservient to the historic cultural heritage values of the place and*

responsive to its dominant characteristics.

Performance Criteria 1

Development must not result in any of the following:

- (a) loss of historic cultural heritage significance to the place through incompatible design, including in height, scale, bulk, form, fenestration, siting, materials, colours and finishes;*
- (b) substantial diminution of the historic cultural heritage significance of the place through loss of significant streetscape elements including plants, trees, fences, walls, paths, outbuildings and other items that contribute to the significance of the place.*

The proposed in ground pool, associated landscaping, fencing and gate will not result in detriment to the significance of the heritage place as the proposed works are located in the yard to the side of the existing residence. There will be no detrimental impact upon the residence or wider streetscape. Performance Criteria 1 of E13.7.2 is considered satisfied.

In conclusion the proposal is considered to satisfy the relevant provisions of E13 the Historic Heritage Code of HIPS 2015.

Allie Costin
6th of April 2022

PROPOSED NEW POOL

369 HUON ROAD

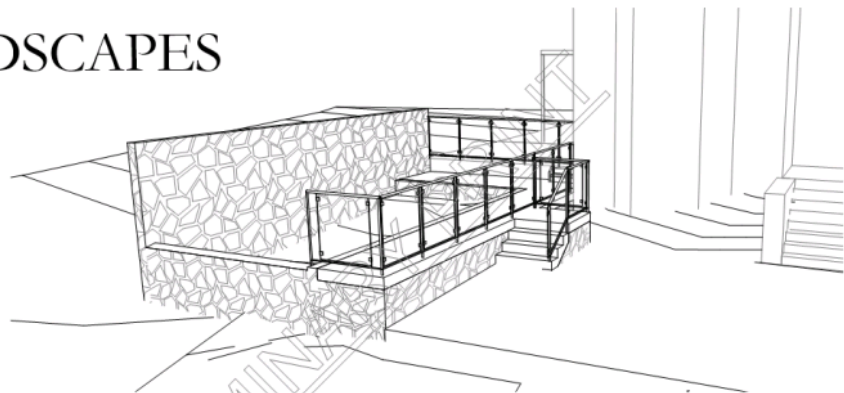
SOUTH HOBART

GREENVIEW POOLS & LANDSCAPES

PDH21064

BUILDING DRAWINGS

No	DRAWING
01	SITE PLAN
02	DEMOLITION PLAN
03	FLOOR PLAN
04	ELEVATIONS
05	SUN SHADOW DIAGRAMS



PLANNING

GENERAL PROJECT INFORMATION

TITLE REFERENCE: 96001/7
SITE AREA: 1127 m²
DESIGN WIND SPEED:
SOIL CLASSIFICATION: H1
CLIMATE ZONE: 7
ALPINE AREA: NO
CORROSIVE ENVIRONMENT: NO
BAL RATING: TBA
OTHER KNOWN HAZARDS: NONE KNOWN

POOL AREA	30.00 m ² (3.23 SQUARES)
POOL DECK AREA	42.67 m ² (4.59 SQUARES)
TOTAL AREA	72.67 7.81



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Shop 9, 105-111 Main Road, Moonah Hobart 7009
p(h) +03 6228 4575
info@primedesigntas.com.au primedesigntas.com.au
Accredited Building Practitioner: Frank Geskus -No CC246A

JULY 2022

GENERAL NOTES

- CHECK & VERIFY ALL DIMENSIONS & LEVELS ON SITE
- WRITTEN DIMENSIONS TO TAKE PREFERENCE OVER SCALED
- ALL WORK TO BE STRICTLY IN ACCORDANCE WITH NCC 2019, ALL S.A.A. CODES & LOCAL AUTHORITY BY-LAWS
- ALL DIMENSIONS INDICATED ARE FRAME TO FRAME AND DO NOT ALLOW FOR WALL LININGS
- CONFIRM ALL FLOOR AREAS
- ALL PLUMBING WORKS TO BE STRICTLY IN ACCORDANCE WITH A.S. 3500 & APPROVED BY COUNCIL INSPECTOR
- BUILDER/PLUMBER TO ENSURE ADEQUATE FALL TO SITE CONNECTION POINTS IN ACCORDANCE WITH A.S. 3500 FOR STORMWATER AND SEWER BEFORE CONSTRUCTION COMMENCES
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE ENGINEER'S STRUCTURAL DRAWINGS
- ALL WINDOWS AND GLAZING TO COMPLY WITH A.S. 1288 & A.S. 2047
- ALL SET OUT OF BUILDINGS & STRUCTURES TO BE CARRIED OUT BY A REGISTERED LAND SURVEYOR AND CHECKED PRIOR TO CONSTRUCTION
- IF CONSTRUCTION OF THE DESIGN IN THIS SET OF DRAWINGS DIFFER FROM THE DESIGN AND DETAIL IN THESE AND ANY ASSOCIATED DOCUMENTS BUILDER AND OWNER ARE TO NOTIFY DESIGNER
- BUILDER'S RESPONSIBILITY TO COMPLY WITH ALL PLANNING CONDITIONS
- BUILDER TO HAVE STAMPED BUILDING APPROVAL DRAWINGS AND PERMITS PRIOR TO COMMENCEMENT OF CONSTRUCTION
- CONSTRUCTION TO COMPLY WITH AS 3459, READ IN CONJUNCTION WITH BUSHFIRE ATTACK LEVEL (BAL) ASSESSMENT REPORT.

SITE DETAIL

HORIZONTAL DATUM IS MGA (GDA94)

VERTICAL DATUM IS AHD

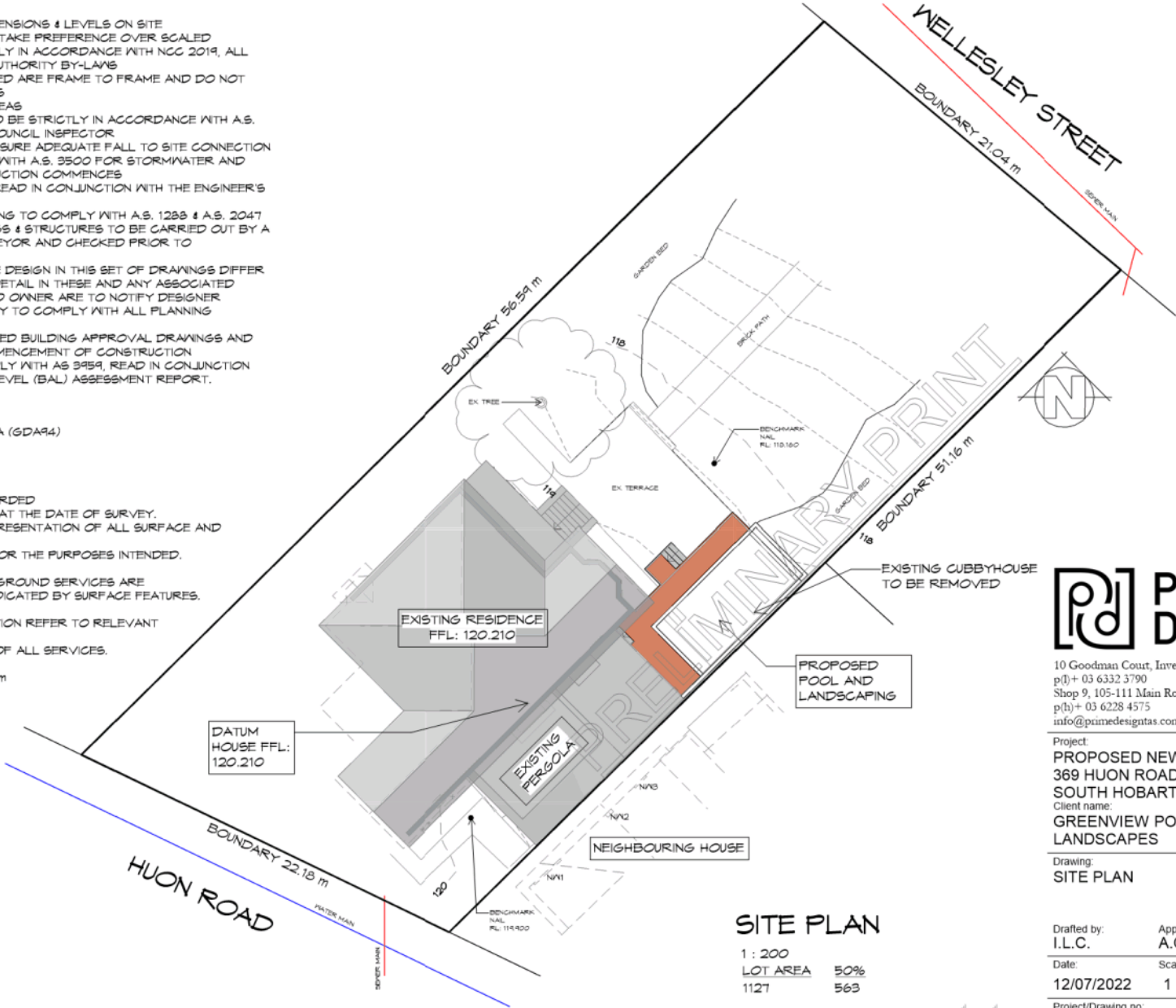
WARNINGS:

- THE DETAIL SHOWN / RECORDED
- MAY ONLY BE CORRECT AT THE DATE OF SURVEY.
- IS NOT A COMPLETE REPRESENTATION OF ALL SURFACE AND UNDERGROUND DETAIL.
- SHOULD ONLY BE USED FOR THE PURPOSES INTENDED.

THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AS INDICATED BY SURFACE FEATURES.

PRIOR TO ANY CONSTRUCTION REFER TO RELEVANT AUTHORITIES FOR DETAILED LOCATION OF ALL SERVICES.

CONTOUR INTERVAL 0.200m



SITE PLAN

1 : 200
LOT AREA 50%
1127 563

Prime Design

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info@primedesigntas.com.au primedesigntas.com.au

Project:
PROPOSED NEW POOL
369 HUON ROAD
SOUTH HOBART
Client name:
GREENVIEW POOLS & LANDSCAPES

Drawing:
SITE PLAN

Drafted by: I.L.C. Approved by: A.C.M.

Date: 12/07/2022 Scale: 1 : 200

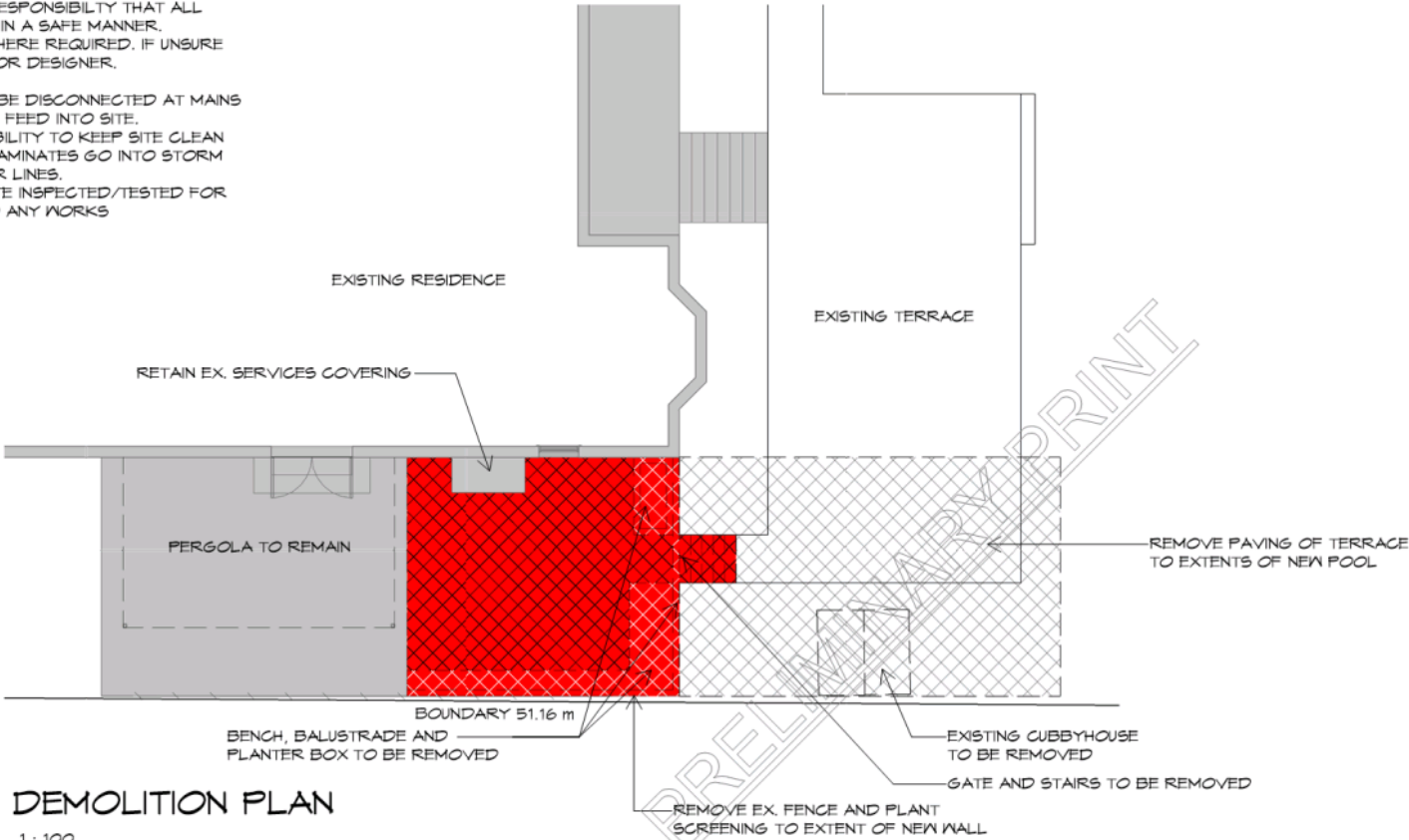
Project/Drawing no: PDH21064 -01 Revision: 05

Accredited building practitioner: Frank Geskus-No CC246A

bdaa
BUILDING DESIGNERS
ASSOCIATION OF AUSTRALIA

DEMOLITION NOTE:

- IT IS THE BUILDERS RESPONSIBILITY THAT ALL WORKS TO BE DONE IN A SAFE MANNER.
- BUILDER TO PROP WHERE REQUIRED. IF UNSURE CONTACT ENGINEER OR DESIGNER.
- CAP ALL PLUMBING.
- ALL ELECTRICAL TO BE DISCONNECTED AT MAINS BOARD/STREET 1 OF FEED INTO SITE.
- BUILDERS RESPONSIBILITY TO KEEP SITE CLEAN TO ENSURE NO CONTAMINATES GO INTO STORM WATER/SEWER WATER LINES.
- BUILDER TO HAVE SITE INSPECTED/TESTED FOR ASBESTOS PRIOR TO ANY WORKS



DEMOLITION PLAN
1 : 100

PLANNING
NOTE: DO NOT SCALE OFF DRAWINGS



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Project:
PROPOSED NEW POOL
369 HUON ROAD
SOUTH HOBART

Client name:
GREENVIEW POOLS &
LANDSCAPES

Drafted by: I.L.C. Approved by: A.C.M.

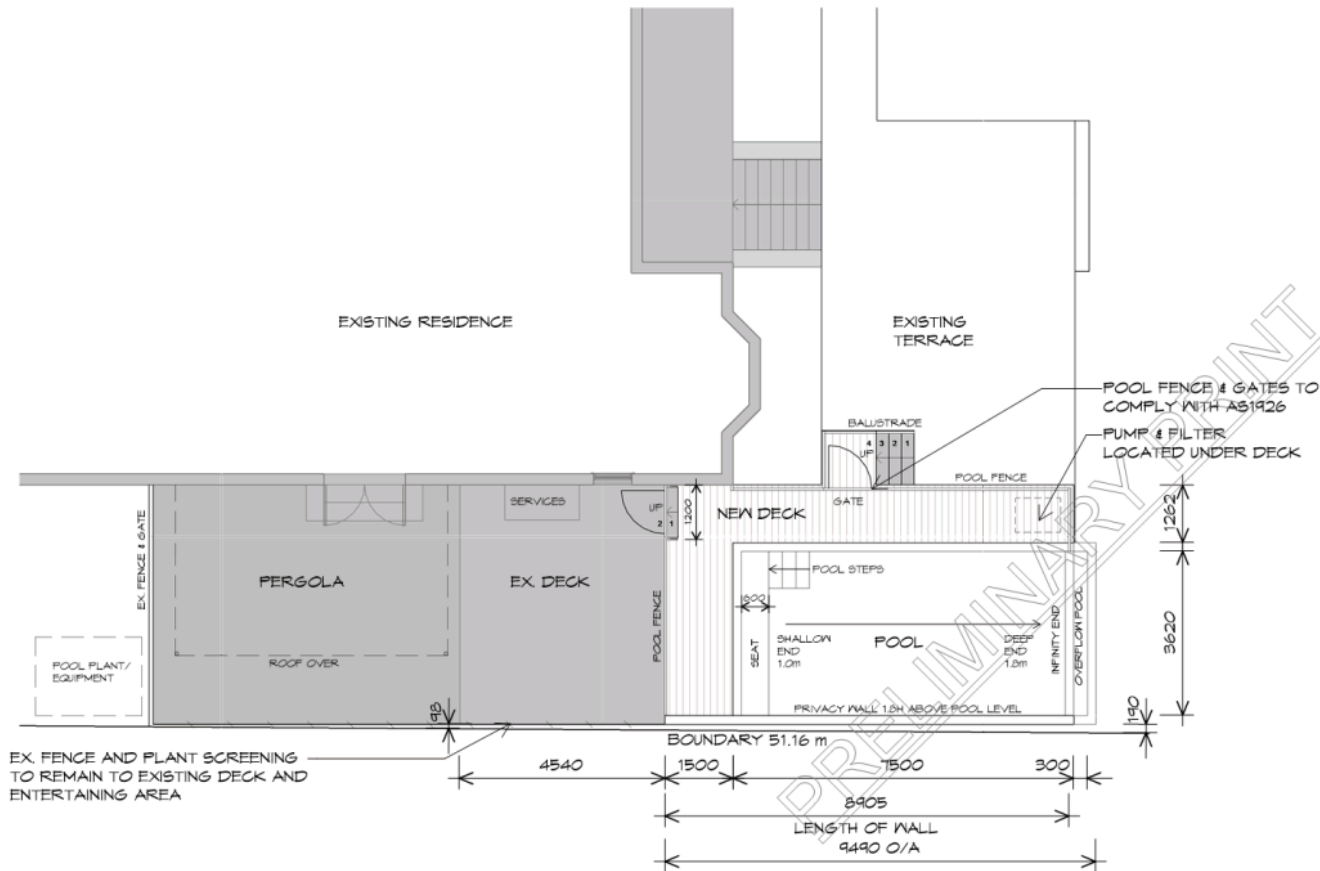


Drawing:
DEMOLITION PLAN

Date: 12/07/2022 Scale: 1 : 100

Project/Drawing no: PDH21064 -02 Revision: 05

Accredited building practitioner: Frank Geskus -No CC246A



FLOOR PLAN
1 : 100

POOL AREA	30.00 m2 (3.23 SQUARES)
POOL DECK AREA	42.67 m2 (4.59 SQUARES)
TOTAL AREA	72.67 7.81

NOTE:
FLOOR AREAS INCLUDE TO EXTERNAL FACE OF
BUILDING UNLESS OTHERWISE STATED.

STAIRS		
No RISERS	RISER H'T	TREAD DEPTH
4	183	280
GOING NON SLIP TO COMPLY WITH AS/NZS 4580:2019		



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Project:
PROPOSED NEW POOL
369 HUON ROAD
SOUTH HOBART
Client name:
GREENVIEW POOLS &
LANDSCAPES

Drawing:
FLOOR PLAN

Drafted by:
A.C.M.

Approved by:
A.C.M.

Date:
12/07/2022

Scale:
1 : 100

Project/Drawing no:
PDH21064 -03

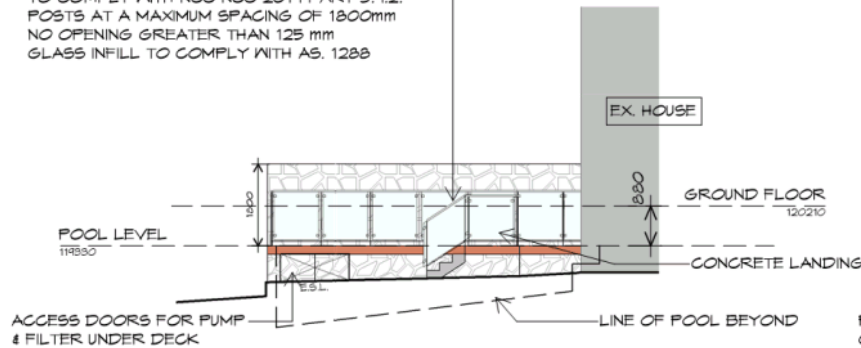
Revision:
05



Accredited building practitioner: Frank Giskus -No CC246A

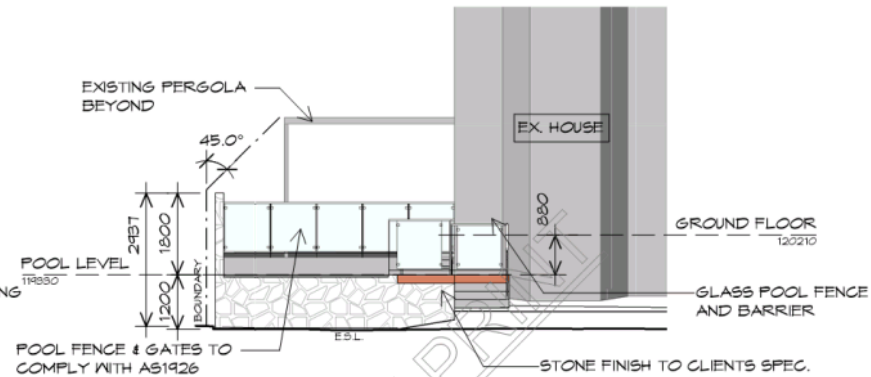
PLANNING
NOTE: DO NOT SCALE OFF DRAWINGS

GLASS BALUSTRADE
HANDRAIL TO BE 1020mm HIGH MINIMUM
865 MINIMUM FOR STAIRS
TO COMPLY WITH NCC NCC 2019 PART 3.9.2.
POSTS AT A MAXIMUM SPACING OF 1800mm
NO OPENING GREATER THAN 125 mm
GLASS INFILL TO COMPLY WITH AS. 1288



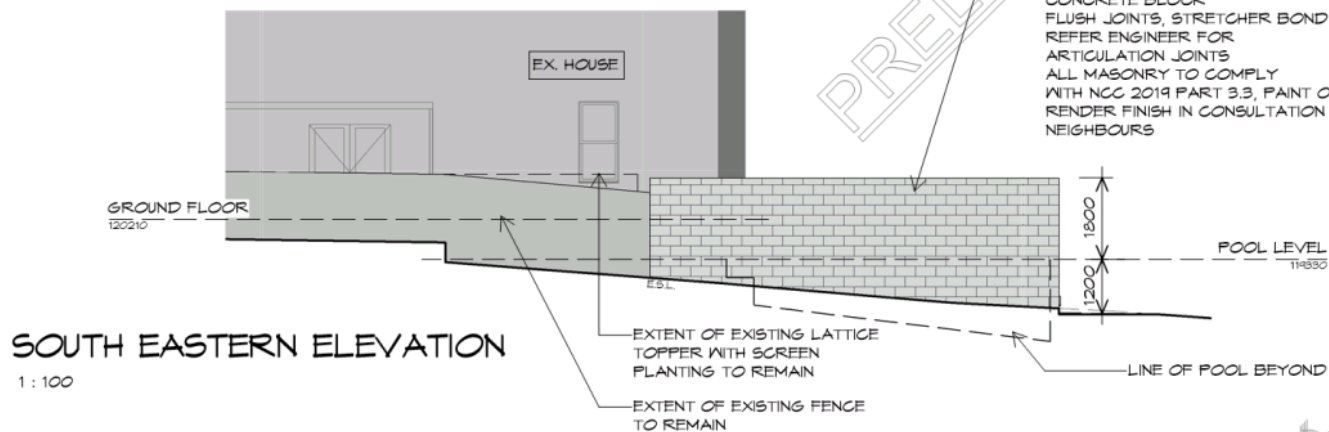
NORTHERN WESTERN ELEVATION

1 : 100



NORTH EASTERN ELEVATION

1 : 100



SOUTH EASTERN ELEVATION

1 : 100

PLANNING
NOTE: DO NOT SCALE OFF DRAWINGS



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Project:
PROPOSED NEW POOL
369 HUON ROAD
SOUTH HOBART
Client name:
GREENVIEW POOLS & LANDSCAPES

Drawing:
ELEVATIONS

Drafted by: I.L.C. Approved by: A.C.M.

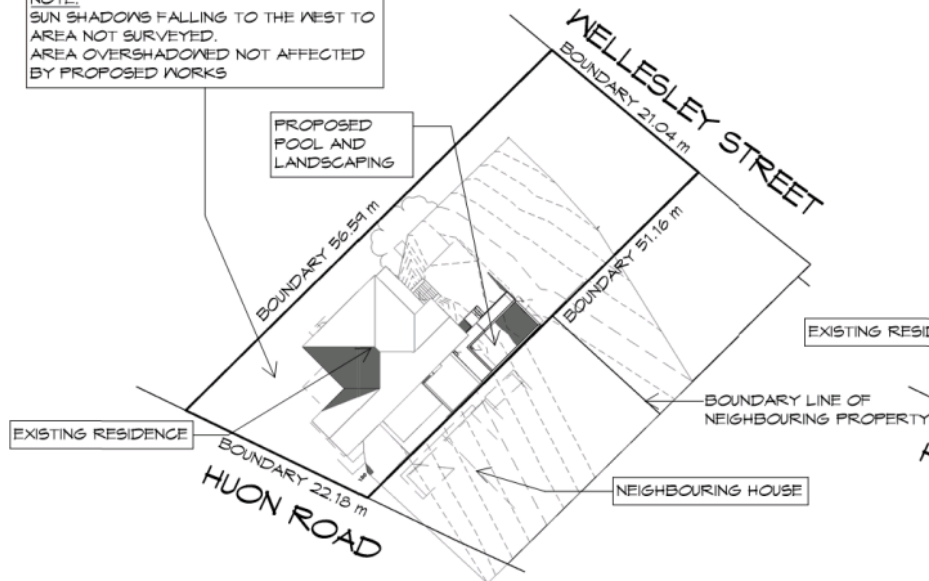
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Project/Drawing no: PDH21064 -04 Revision: 05

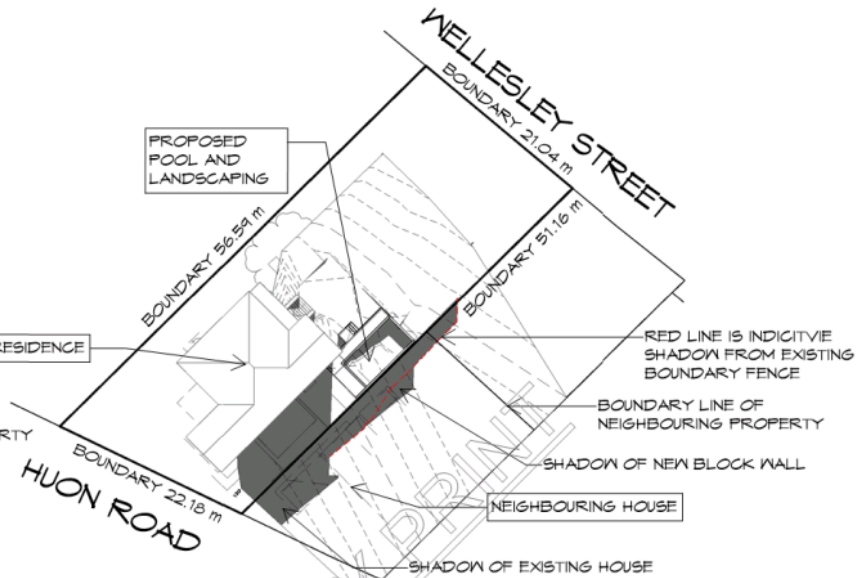
Accredited building practitioner: Frank Gekus -No CC246A

PLANNING
NOTE: DO NOT SCALE OFF DRAWINGS

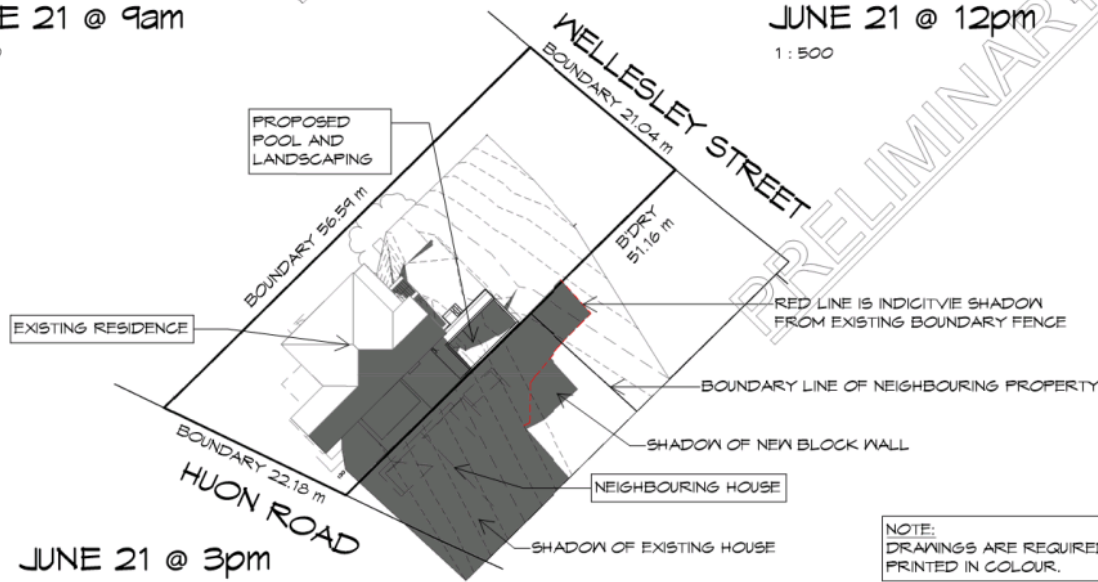
NOTE:
SUN SHADOWS FALLING TO THE WEST TO
AREA NOT SURVEYED.
AREA OVERSHADOWED NOT AFFECTED
BY PROPOSED WORKS



JUNE 21 @ 9am
1 : 500



JUNE 21 @ 12pm
1 : 500



JUNE 21 @ 3pm
1 : 500

NOTE:
DRAWINGS ARE REQUIRED TO BE VIEWED OR
PRINTED IN COLOUR.

Prime Design

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Project:
PROPOSED NEW POOL
369 HUON ROAD
SOUTH HOBART
Client name:
**GREENVIEW POOLS &
LANDSCAPES**

Drawing:
SUN SHADOW DIAGRAMS

Drafted by: I.L.C. Approved by: A.C.M.

Date: 12/07/2022 Scale: 1 : 500

Project/Drawing no: PDH21064 -05 Revision: 05

Accredited building practitioner: Frank Gekus -No CC246A

bdaa
BUILDING DESIGNERS
ASSOCIATION OF AUSTRALIA

From: Alycia McConalogue <Alycia@primedesigntas.com.au>
Sent: Tuesday, 26 July 2022 1:23 PM
To: Victoria Maxwell
Subject: 369 Huon Road, South Hobart - PLN-022-124

Caution! This message was sent from outside your organization.

[Allow sender](#) | [Block sender](#)

Hi Victoria,

Confirming that our clients will be happy to provide stone facing the neighbouring side of the boundary wall. Should you need any additional detail please don't hesitate to contact me.

Kind regards,

Alycia
McConalogue
HOBART OFFICE MANAGER | BUILDING DESIGNER
M. Architecture | B. Environmental Design

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Shop 9, 105-111 main Road
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alycia@primedesigntas.com.au
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**7.2.5 7/337 CHURCHILL AVENUE, SANDY BAY AND COMMON LAND OF
PARENT TITLE - CHANGE OF USE TO VISITOR ACCOMMODATION
PLN-22-449 - FILE REF: F22/81786**

Address: 7/337 Churchill Avenue, Sandy Bay and
Common Land of Parent Title

Proposal: Change of Use to Visitor Accommodation

Expiry Date: 7 October 2022

Extension of Time: Not applicable

Author: Adam Smee

RECOMMENDATION

That pursuant to the *Hobart Interim Planning Scheme 2015*, the Council approve the application for a change of use to visitor accommodation at 7/337 Churchill Avenue, Sandy Bay 7005 and the common land of parent title, for the reasons outlined in the officer's report and a permit containing the following conditions be issued:

GEN

The use and/or development must be substantially in accordance with the documents and drawings that comprise PLN-22-449 - 7 337 CHURCHILL AVENUE SANDY BAY TAS 7005 - Final Planning Documents.

Reason for condition

To clarify the scope of the permit.

PLN 18

Prior to the commencement of the approved use, a management plan for the operation of the visitor accommodation must be submitted and approved as a Condition Endorsement, to the satisfaction of the Council's Director City Life. The management plan must include measures to limit, manage, and mitigate unreasonable impacts upon the amenity of long term residents. These measures must include, but are not limited to, the following requirements:

1. To limit, manage, and mitigate noise generated as a result of the visitor accommodation.
2. To limit, manage, and mitigate potential behavioural issues caused as a result of the visitor accommodation.
3. To specify the maximum permitted occupancy of the visitor accommodation.
4. To provide a name and contact phone number of a person who will respond to any complaints regarding behaviour of guests. If the property is sold the Visitor Accommodation Management Plan (VAMP) must be updated with new contact details.

Once approved, the management plan must be implemented prior to the commencement of the approved use and must be maintained for as long as the visitor accommodation is in operation. The VAMP must be provided to adjacent property owners and occupiers within 14 days of being approved. If the property is sold, the updated VAMP (in accordance with the above point 4) must be provided to adjacent property owners and occupiers within 10 business days of settlement.

Advice:

This condition requires further information to be submitted as a Condition Endorsement. Refer to the Condition Endorsement advice at the end of this permit.

Reason for condition

To ensure that visitor accommodation does not cause an unreasonable loss of residential amenity.

CONDITION ENDORSEMENT




If any condition requires that further documents are submitted and approved, you will need to submit the relevant documentation to satisfy the condition via the Condition Endorsement Submission on Council's [online services e-planning portal](#). Detailed instructions can be found [here](#). Once approved, the Council will respond to you via email that the condition has been endorsed (satisfied).

VISITOR ACCOMMODATION

More information on visitor accommodation, including when building approval is required, can be found [here](#).

In all cases, check with your insurance company that you have adequate cover.

If you are providing food for consumption on the property, you may require a food business registration in accordance with the *Food Act 2003*. Click [here](#) for more information, or call our Environmental Health team on 6238 2711.

- | | |
|---------------|---|
| Attachment A: | PLN-22-449 - 7/337 CHURCHILL AVENUE SANDY BAY TAS 7005 - Planning Committee or Delegated Report ↓  |
| Attachment B: | PLN-22-449 - 7/337 CHURCHILL AVENUE SANDY BAY TAS 7005 - CPC Agenda Documents ↓  |
| Attachment C: | PLN-22-449 - 7337 CHURCHILL AVENUE SANDY BAY TAS 7005 - Attachment C - Draft Visitor Accommodation Management Plan (manager name and contact details removed) ↓  |

**APPLICATION UNDER HOBART INTERIM PLANNING SCHEME 2015**

Type of Report: Committee
Council: 29 August 2022
Expiry Date: 7 October 2022
Application No: PLN-22-449
Address: 7 / 337 CHURCHILL AVENUE , SANDY BAY
COMMON LAND OF PARENT TITLE
Applicant: Joanne Turfrey
7/337 Churchill Aveune
Proposal: Change of Use to Visitor Accommodation
Representations: One (1)
Performance criteria: Planning Directive No. 6 Exemption and Standards for Visitor
Accommodation in Planning Schemes:

Visitor Accommodation

Landslide Code:

Vulnerable Use

Parking and Access Code:

Number of Car Parking Spaces

1. Executive Summary

- 1.1 Planning approval is sought for a change of use to visitor accommodation at 7/337 Churchill Avenue, Sandy Bay and the common land of parent title.
- 1.2 More specifically the proposal includes a change of use of the multiple dwelling on the site to allow it to be used for visitor accommodation. The proposed visitor accommodation would have two bedrooms and a floor area of approximately 166m², including a garage. The garage would provide two on-site car parking spaces.
- 1.3 The proposal relies on performance criteria to satisfy the following standards and codes:

- 1.3.1 Planning Directive No. 6 Exemption and Standards for Visitor Accommodation in Planning Schemes
- 1.3.2 E3.0 Landslide Code - E3.6 Use Standards
- 1.3.3 E6.0 Parking and Access Code - E3.6 Use Standards
- 1.4 One (1) representation generally in support of the proposal was received within the statutory advertising period between 26 July and 8 August 2022.
- 1.5 The proposal is recommended for approval subject to conditions.
- 1.6 The final decision is delegated to the Council because certain applications that seek approval for visitor accommodation have been "called in" by the elected representatives.

2. Site Detail

- 2.1 The site is a residential property within the Sandy Bay area. The property has an area of approximately 4072m² and contains several conjoined multiple dwellings. Vehicular access to these dwellings is via a driveway within an access strip at the southern end of the property. The subject dwelling is one of ten conjoined dwellings that are arranged in a linear form on a north/south alignment. The subject dwelling is within the central section of the row of conjoined dwellings, although closer to the northern end than the southern. There is a vacant lot adjacent to the mid-point of the property's western boundary but the site is otherwise surrounded by established residential development.



Figure 1: aerial view of site (subject dwelling shaded in red, common land outlined in blue) and surrounding area.

3. Proposal

- 3.1 Planning approval is sought for a change of use to visitor accommodation at 7/337 Churchill Avenue, Sandy Bay and the common land of parent title.
- 3.2 More specifically the proposal includes a change of use of the multiple dwelling on the site to allow it to be used for visitor accommodation. The proposed visitor accommodation would have two bedrooms and a floor area of approximately 166m², including a garage. The garage would provide two on-site car parking spaces.

4. Background

- 4.1 Council issued a Planning Permit for demolition and and 10 multiple dwellings on the site in November 2016 (PLN-16-00019-01).

5. Concerns raised by representors

- 5.1 One representation, generally in support of the proposal was received within the statutory advertising period.
- 5.2 The following table outlines the concerns raised in the representations received. Those concerns which relate to a discretion invoked by the proposal are addressed in Section 6 of this report.

I don't oppose the application but want ensure that any conditions applied, if the application is approved, include compliance with the body corporate rules, specifically Rules 2, 5, 7 & 9 as per the attached document.
--

6. Assessment

- 6.1 The *Hobart Interim Planning Scheme 2015* is a performance based planning scheme. To meet an applicable standard, a proposal must demonstrate compliance with either an acceptable solution or a performance criterion. Where a proposal complies with a standard by relying on one or more performance criteria, the Council may approve or refuse the proposal on that basis. The ability to approve or refuse the proposal relates only to the performance criteria relied on.
- 6.2 The site is located within the General Residential Zone of the *Hobart Interim Planning Scheme 2015*.

- 6.3 The existing use is a multiple dwelling within the planning scheme's residential use class. The existing use is a permitted use in the above zone. The proposed use is also permitted use in the zone.
- 6.4 The proposal has been assessed against:
- 6.4.1 Planning Directive No. 6 Exemption and Standards for Visitor Accommodation in Planning Schemes
 - 6.4.2 E3.0 Landslide Code
 - 6.4.3 E6.0 Parking and Access Code
- 6.5 The proposal relies on the following performance criteria to comply with the applicable standards:
- 6.5.1 Planning Directive No. 6 Exemption and Standards for Visitor Accommodation in Planning Schemes:
Visitor Accommodation P2
 - 6.5.2 E3.0 Landslide Code:
E3.6.2 Vulnerable Use P2
 - 6.5.3 E6.0 Parking and Access Code:
E6.6.1 Number of Car Parking Spaces P1
- 6.6 Each relevant performance criterion is assessed below.
- 6.7 *Visitor Accommodation P2*
- 6.7.1 The acceptable solution A2 for visitor accommodation requires visitor accommodation to not be for a lot, as defined in the Strata Titles Act 1998, that is part of a strata scheme where another lot within that strata scheme is used for a residential use.
 - 6.7.2 The proposal includes visitor accommodation for strata lot that is part of a strata scheme where another lot is used for residential.
 - 6.7.3 The proposal does not comply with the above acceptable solution and therefore relies upon assessment against the below performance

criterion.

- 6.7.4 The performance criterion P2 for visitor accommodation provides as follows:

Visitor Accommodation within a strata scheme must not cause an unreasonable loss of residential amenity to long term residents occupying other lots within the strata scheme, having regard to:

- (a) the privacy of residents;*
- (b) any likely increase in noise;*
- (c) the residential function of the strata scheme;*
- (d) the location and layout of the lots;*
- (e) the extent and nature of any other non-residential uses; and*
- (f) any impact on shared access and common property.*

- 6.7.5 The proposal is considered unlikely to have an impact upon the privacy of long term residents on the site. The subject dwelling has separate access to the shared driveway on the site - i.e. the entrance to the dwelling is not shared with another dwelling. Given the design of the complex which contains the subject dwelling, there is considered to be limited opportunity for interaction between visitor accommodation guests and long term residents. Therefore, the proposal is considered unlikely to cause an unreasonable loss of residential amenity having regard to the privacy of residents.

- 6.7.6 A visitor accommodation use is considered no more likely to cause significant noise than a long-term residential use, given that both uses are inherently similar. While there have been isolated examples of visitor accommodation use leading to noise and other behavioural impacts upon residential use, the location and relatively smaller floor area of the subject dwelling is considered to ensure that this is less likely to occur as a result of the proposal. To further reduce the likelihood of loss of residential amenity as a result of the proposal, the proponent should be required to develop, implement, and maintain a Visitor Accommodation Management Plan for the proposed. This plan should be submitted to Council for approval before use of the site for visitor accommodation commences. A condition to this effect should be included upon any Planning Permit issued for the proposal.

- 6.7.7 The proposal would have limited impact upon the residential function of the strata scheme on the site. The other nine lots within the scheme would continue to be used for residential use meaning that the proposal would have limited impact upon the overall use of the site. As noted above,

there would be limited opportunity for interaction between visitor accommodation guests and long-term residents, meaning that the proposal is unlikely to significantly affect the residential experience on the site.

- 6.7.8 The location and layout of the lots within the strata scheme on the site is considered likely to reduce the potential for unreasonable loss of residential amenity as a result of the proposal. Each lot within the scheme is vertically separated from the adjoining lots which is considered to reduce the potential for noise or other impacts as a result of the proposed visitor accommodation use, when compared with a scheme where the lots are horizontally separated. The layout of the lots within the scheme also allows for separate access to each dwelling, which, as noted above, would reduce the potential for interaction between guests and long-term residents.
- 6.7.9 With regard to sub-clause (e), Council's records indicate that there are no non-residential uses on the site.
- 6.7.10 The proposal is likely to lead to fewer vehicle movements upon the shared driveway on the site, given that the proposed visitor accommodation is unlikely to enjoy 100% occupancy and that this use is generally considered to generate fewer vehicle movements than a long-term residential use. The proposal would have no other impact shared access on the site given that the subject dwelling has direct access to the shared driveway, as noted earlier.
- 6.7.11 As discussed later in the report, the proposal includes greater than the number of on-site car parking spaces than are usually required by the planning scheme's Parking and Access Code. Therefore, the proposal is considered unlikely to have any significant impact upon other common property on the site, such as the dedicated visitor car parking spaces as adequate car parking would be provided within the subject dwelling.
- 6.7.12 The proposal complies with the above performance criterion.
- 6.8 *E3.6.2 Vulnerable Use P2*
- 6.8.1 There is no acceptable solution for clause E3.6.2 which applies where a vulnerable use (which as defined in the Landslide Code includes visitor accommodation) is proposed on land that is within a Landslide Hazard Area.

6.8.2 The proposal includes a vulnerable use on land that is within a Landslide Hazard Area.

6.8.3 As there is no acceptable solution for the above clause the proposal therefore relies upon assessment against the below performance criterion.

6.8.4 The performance criterion P2 at clause E3.6.2 provides as follows:

Vulnerable use must satisfy all of the following:

*(a) No part of the vulnerable use is in a High Landslide Hazard Area;
(b) Landslide risk to occupants, staff, visitors and emergency personnel associated with the vulnerable use is either:*

(i) acceptable risk; or

(ii) capable of feasible and effective treatment through hazard management measures, so as to be tolerable risk.

(c) Landslide risk to occupants, staff and visitors takes into consideration their specific circumstances including their ability to:

(i) protect themselves and defend property from landslide;

(ii) evacuate in an emergency;

(iii) understand and respond to instructions in the event of a landslide;

whilst minimising risk to emergency personnel.

6.8.5 Council's Environmental Development Planner has assessed the proposal against the above performance criterion and provided the following comments:

Approval is sought to change the use of Unit 7, 337 Churchill Avenue, to visitor accommodation.

Landslide Code

The Code applies because a 'vulnerable use' is proposed within a Landslide Hazard Area. Part of the site is within a Low Landslide Hazard Area due to a modelled susceptibility to debris flow.



Image 1: Landslide Hazard area overlay

No Code exemptions apply.

The relevant standards are under clause E3.6.2. The application complies with acceptable solution A1 as the proposed use is visitor accommodation.

There is no acceptable solution for A2. Performance criterion P2 states the following:

Vulnerable use must satisfy all of the following:

(a) No part of the vulnerable use is in a High Landslide Hazard Area;

(b) Landslide risk to occupants, staff, visitors and emergency personnel associated with the vulnerable use is either:

(i) acceptable risk; or

(ii) capable of feasible and effective treatment through hazard management measures, so as to be tolerable risk.

(c) Landslide risk to occupants, staff and visitors takes into consideration their specific circumstances including their ability to:

(i) protect themselves and defend property from landslide;

(ii) evacuate in an emergency;
(iii) understand and respond to instructions in the event of a landslide;

whilst minimising risk to emergency personnel.

No part of the site is within a High LHA in conformity with P2(a).

With regard to P2(b) and (c), the landslide risk is considered to be acceptable because:

- Council's in-house debris flow modelling (which is considered to be more sophisticated than the modelling used for the Landslide Hazard Areas) shows any debris flow clear of Unit 7 (see Image 2 below).
- A landslide risk assessment was conducted for the development of the units and the debris flow risk was assessed as low and acceptable.
- The unit is relatively small with a simple layout and should be easy to evacuate. Egress/entry to the unit is on the other side of the unit to the modelled debris flow runout area.



Image 2: Council's debris flow modelling

The exercise of discretion is recommended with regard to E3.6.2

P2.

6.8.6 The proposal complies with the above performance criterion.

6.9 *E6.6.1 Number of Car Parking Spaces P1*

6.9.1 The acceptable solution at clause *E6.6.1* requires the number of on-site car parking spaces to be no greater than the number specified in Table E6.1.

6.9.2 The proposal includes greater than the number of on-site car parking spaces specified in Table E6.1.

6.9.3 The proposal does not comply with the above acceptable solution and therefore relies upon assessment against the below performance criterion.

6.9.4 The performance criterion at clause *E6.6.1* provides as follows:

The number of on-site car parking spaces must be sufficient to meet the reasonable needs of users, having regard to all of the following:

- (a) car parking demand;*
- (b) the availability of on-street and public car parking in the locality;*
- (c) the availability and frequency of public transport within a 400m walking distance of the site;*
- (d) the availability and likely use of other modes of transport;*
- (e) the availability and suitability of alternative arrangements for car parking provision;*
- (f) any reduction in car parking demand due to the sharing of car parking spaces by multiple uses, either because of variation of car parking demand over time or because of efficiencies gained from the consolidation of shared car parking spaces;*
- (g) any car parking deficiency or surplus associated with the existing use of the land;*
- (h) any credit which should be allowed for a car parking demand deemed to have been provided in association with a use which existed before the change of parking requirement, except in the case of substantial redevelopment of a site;*
- (i) the appropriateness of a financial contribution in lieu of parking towards the cost of parking facilities or other transport facilities, where such facilities exist or are planned in the vicinity;*
- (j) any verified prior payment of a financial contribution in lieu of parking*

for the land;

(k) any relevant parking plan for the area adopted by Council;

(l) the impact on the historic cultural heritage significance of the site if subject to the Local Heritage Code;

(m) whether the provision of the parking would result in the loss, directly or indirectly, of one or more significant trees listed in the Significant Trees Code.

- 6.9.5 The proposal would reduce the car parking demand on the site by replacing the residential use of the subject dwelling with a visitor accommodation use that requires one fewer car parking space in accordance with Table E6.1. As discussed earlier in the report, the provision of additional car parking is considered likely to reduce potential impacts upon residential amenity. There is limited availability of on-street car parking in the locality in a convenient location for users of the proposed visitor accommodation. Given the length of the driveway on the site and the location of the subject dwelling within the complex, the visitor accommodation would be a considerable distance (over 120m walking distance) from any on-street car parking provided on Churchill Avenue. There is no other public car parking provided in the locality.
- 6.9.6 There are bus stops on Churchill Avenue that within 400m walking distance of the site, however, given the location of the proposed visitor accommodation away from the Hobart CBD, it is considered less likely that guests would use buses or other modes of transport. No alternative arrangements for car parking provision are included in the proposal or considered necessary. There would be no reduction in car parking demand due to the sharing of car parking spaces by multiple use and there is no car parking deficiency or surplus associated with the existing use of the site.
- 6.9.7 A financial contribution in lieu of parking is clearly not appropriate given that greater than the number of car parking spaces would be provided for the proposed use. There is no relevant parking plan for the area and there would be no impact upon historic cultural significance as a result of the proposal. The proposal would have no impact upon a tree listed in the Significant Trees Code.
- 6.9.6 The proposal complies with the above performance criterion.

7. Discussion

- 7.1 Planning approval is sought for change of use to visitor accommodation at 7/337 Churchill Avenue, Sandy Bay and the common land of parent title.
- 7.2 The application was advertised and received one (1) representation. The representation confirmed that although they did not oppose the application, they wanted to ensure that if the proposal was approved and conditions applied on the permit, there would be a condition included to ensure compliance with the body corporate rules, specifically Rules 2, 5, 7 & 9.
- Whilst the intention of the representor is understood, conditioning for compliance with body corporate rules is not an appropriate function for a planning permit. Body corporate rules are set out in accordance with legislation separate to that which is associated with the planning process. The body corporate rules would still apply to the site regardless of any planning permit issued.
- 7.3 The proposal has been assessed against the relevant provisions of the planning scheme and is considered to comply.
- 7.4 The proposal has been assessed by other Council officers, including the Council's Environmental Development Planner. The officers have raised no objection to the proposal.
- 7.5 The proposal is recommended for approval.

8. Conclusion

- 8.1 The proposed a change of use to visitor accommodation at 7/337 Churchill Avenue, Sandy Bay and the common land of parent title, satisfies the relevant provisions of the *Hobart Interim Planning Scheme 2015* and is recommended for approval.

9. Recommendations

That: Pursuant to the *Hobart Interim Planning Scheme 2015*, the Council approve the application for a change of use to visitor accommodation at 7/337 Churchill Avenue, Sandy Bay and the common land of parent title, for the reasons outlined in the officer's report and a permit containing the following conditions be issued:

GEN

The use and/or development must be substantially in accordance with the documents and drawings that comprise PLN-22-449 - 7 337 CHURCHILL AVENUE SANDY BAY TAS 7005 - Final Planning Documents.

Reason for condition

To clarify the scope of the permit.

PLN 18

Prior to the commencement of the approved use, a management plan for the operation of the visitor accommodation must be submitted and approved as a Condition Endorsement, to the satisfaction of the Council's Director City Life. The management plan must include measures to limit, manage, and mitigate unreasonable impacts upon the amenity of long term residents. These measures must include, but are not limited to, the following requirements:

1. **To limit, manage, and mitigate noise generated as a result of the visitor accommodation.**
2. **To limit, manage, and mitigate potential behavioural issues caused as a result of the visitor accommodation.**
3. **To specify the maximum permitted occupancy of the visitor accommodation.**
4. **To provide a name and contact phone number of a person who will respond to any complaints regarding behaviour of guests. If the property is sold the Visitor Accommodation Management Plan (VAMP) must be updated with new contact details.**

Once approved, the management plan must be implemented prior to the commencement of the approved use and must be maintained for as long as the visitor accommodation is in operation. The VAMP must be provided to adjacent property owners and occupiers within 14 days of being approved. If the property is sold, the updated VAMP (in accordance with the above point 4)

must be provided to adjacent property owners and occupiers within 10 business days of settlement.

Advice:

This condition requires further information to be submitted as a Condition Endorsement. Refer to the Condition Endorsement advice at the end of this permit.

Reason for condition

To ensure that visitor accommodation does not cause an unreasonable loss of residential amenity.

CONDITION ENDORSEMENT

If any condition requires that further documents are submitted and approved, you will need to submit the relevant documentation to satisfy the condition via the Condition Endorsement Submission on Council's [online services e-planning portal](#). Detailed instructions can be found [here](#). Once approved, the Council will respond to you via email that the condition has been endorsed (satisfied).

VISITOR ACCOMMODATION

More information on visitor accommodation, including when building approval is required, can be found [here](#).

In all cases, check with your insurance company that you have adequate cover.

If you are providing food for consumption on the property, you may require a food business registration in accordance with the *Food Act 2003*. Click [here](#) for more information, or call our Environmental Health team on 6238 2711.



(Adam Smee)

Development Appraisal Planner

As signatory to this report, I certify that, pursuant to Section 55(1) of the Local Government Act 1993, I hold no interest, as referred to in Section 49 of the Local Government Act 1993, in matters contained in this report.



(Karen Abey)

Manager Development Appraisal

As signatory to this report, I certify that, pursuant to Section 55(1) of the Local Government Act 1993, I hold no interest, as referred to in Section 49 of the Local Government Act 1993, in matters contained in this report.


Date of Report: 10 August 2022

Attachment(s):

Attachment B - CPC Agenda Documents

PLN-22-449 - 337 CHURCHILL AVENUE PLN-22-449 - COMMON LAND OF PARENT TITLE

Application Information

▼ Application Details PLN-22-449 Change of Use to Visitor Accommodation 
 Submitted on: 13/07/2022
 Accepted as Valid on: 13/07/2022
 Target Time Frame: 42 Days.
 Elapsed Time: 8 Days (*Stopped: 2 Days*) = 6 Days Expiry date: 26/08/2022
 Officer: Adam Smee

Have you obtained pre application advice?

☒ No

If YES please provide the pre application advice number eg PAE-17-xx

Are you applying for permitted visitor accommodation as defined by the State Government Visitor Accommodation information button for definition. *

☒ Yes

Is the application for SIGNAGE ONLY? If yes, please enter \$0 in the cost of development, and you must enter the Other Details below. *

☒ No

If this application is related to an enforcement action please enter Enforcement Number

Details

What is the current approved use of the land / building(s)? *

Residential Dwelling

Please provide a full description of the proposed use or development (i.e. demolition and new dwelling, swimming and garage) *

Short stay accommodation

Estimated cost of development *

0.00

Existing floor area (m2)

174.00

Proposed floor area (m2)

Site area (m2)

Carparking on Site

Total parking spaces	Existing parking spaces	N/A
<div>2</div>	<div></div>	<div><input checked="" type="checkbox"/> Other (no selection chosen)</div>

Other Details

Does the application include signage? *

No

How many signs, please enter 0 if there are none involved in this application? *

0

Tasmania Heritage Register

Is this property on the Tasmanian Heritage Register?

No

**RESULT OF SEARCH**

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



SEARCH OF TORRENS TITLE

VOLUME 175755	FOLIO 0
EDITION 1	DATE OF ISSUE 03-Sep-2018

SEARCH DATE : 21-Jul-2022

SEARCH TIME : 11.25 AM

DESCRIPTION OF LAND

City of HOBART

The Common Property for Strata Scheme 175755

Derivation : Part of 52A-3R-0P Gtd. to G. Flexmore

Prior CT 116499/15

SCHEDULE 1

STRATA CORPORATION NUMBER 175755, WINSTON ON CHURCHILL, 337
CHURCHILL AVENUE, SANDY BAY

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
BURDENING EASEMENT the full and free right for the Lord Mayor
Aldermen and Citizens of the City of Hobart to enter
upon at all times with workmen and others and
machinery the Drainage Easement 2.00 wide marked F.G.
X.W. on P. 116499 to break up and excavate that land
to lay and maintain either thereon or therein water
pipes and valves and fittings for the purposes of the
Hobart Corporation Act 1962, and to run and pass
water through and along the same and from time to
time to inspect, cleanse, repair and maintain the
same and when and where necessary to lay new pipes in
substitution for and in addition thereto and to do
all necessary works and things in connection
therewith or as may be authorised by the Hobart
Corporation Act 1962, without doing unnecessary
damage and leaving the said piece or parcel of land
in a clean and tidy condition

BENEFITING EASEMENT: Right of Drainage over the drainage
easement marked M.M.Q. on P. 116499

BURDENING EASEMENT: Right of Drainage [appurtenant to Lot 4
shown on P. 116499) over the Drainage Easement marked
Q.N. and F.G.H.E. shown on P. 116499

BURDENING EASEMENT a right of drainage over the Drainage
Easement marked E.F.G.H. shown on P. 116499
(appurtenant to Lot 7 on Deeds Office Diagram No.

**RESULT OF SEARCH**

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

72/79 created by and more particularly referred to in
Conveyance No. 84/4816

BURDENING EASEMENT: Right of Drainage [appurtenant to Lot 12
on Sealed Plan NO. 3943) over the Drainage Easement
marked L.M.Q.N. and O.P.H.G. shown on P. 116499

BURDENING EASEMENT: Right of Drainage [appurtenant to Lot 13
on Sealed Plan NO. 3943) over the Drainage Easement
marked K.M.Q.N. and O.P.H.G. shown on P. 116499

BURDENING EASEMENT: Right of Drainage [appurtenant to Lot 14
on Sealed Plan No. 3943) over the Drainage Easement
marked J.M.Q.N. and O.P.H.G. shown on P. 116499

A414966 FENCING PROVISION in Transfer

E92387 APPLICATION for registration of a staged development
scheme Registered 28-Aug-2018 at noon

M760650 APPLICATION for registration of stage of staged dev.
scheme by amending Lot 10, creating Lots 4-7,
creating additional common property & adjusting unit
entitlements Registered 19-Jun-2019 at noon

M767423 APPLICATION by lot owners to amend Strata Plan by
amending Lot 10, creating Lots 8 & 9 & common
property and adjusting unit entitlements Registered
07-Aug-2019 at noon

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

**RESULT OF SEARCH**

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



SEARCH OF TORRENS TITLE

VOLUME 175755	FOLIO 7
EDITION 2	DATE OF ISSUE 19-Aug-2019

SEARCH DATE : 12-Jul-2022

SEARCH TIME : 01.33 PM

DESCRIPTION OF LAND

City of HOBART

Lot 7 on Strata Plan 175755 and a general unit entitlement
operating for all purposes of the Strata Scheme being a 10
undivided 1/100 interest

Derived from Strata Plan 175755

Derivation : Part of 52A-3R-0P Gtd. to G. Flexmore

SCHEDULE 1M768367 TRANSFER to JOANNE ELIZABETH TURFREY Registered
19-Aug-2019 at 12.01 PMSCHEDULE 2Reservations and conditions in the Crown Grant if any
The registered proprietor holds the lot and unit entitlement
subject to any interest noted on common property
Folio of the Register volume 175755 folio 0BENEFITING EASEMENT: Right of Drainage over the drainage
easement marked M.M.Q. on P. 116499

A414966 FENCING PROVISION in Transfer

E178316 MORTGAGE to AMP Bank Limited Registered 19-Aug-2019
at 12.02 PMUNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations



FOLIO PLAN

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



CITY OF HOBART		STRATA PLAN		Registered Number 175755
SUBURB SANDY BAY		NEW SHEET 1 OF 11 SHEETS PURSUANT TO (M767423)		
FOLIO REFERENCE FR 116499/15 FR 115755/10 116499/15		NAME OF STRATA SCHEME WINSTON ON CHURCHILL No. 337 CHURCHILL AVENUE, SANDY BAY		STRATA TITLES ACT 1998 REGISTERED 3 SEP 2018 <i>Alis Kara</i> Recorder of Titles
SITE COMPRISES THE WHOLE OF LOT 15 ON PLAN No. 116499		SCALE 1: 750	LENGTHS IN METRES	
MAPSHEET MUNICIPAL CODE No. (5224)14	LAST UPI No.			

SITE PLAN
 (P21963)
 (P730)D0 (P21963)

SURV. REF: 43943LM

NOTES: (i) ALL BUILDINGS ON THE SITE TO BE SHOWN ON SHEET 1. (ii) BUILDING TO SITE BOUNDARY OFFSETS OF LESS THAN 2.00 METRES TO BE SHOWN ON SHEET 1.		 Council Delegate Date: 16-7-2019	 Registered Land Surveyor Date: 28/5/19
STAGED/COMMUNITY DEVELOPMENT. SCHEME No. (IF APPLICABLE) E 92387 - (SDS)		LODGED BY PDA SURVEYORS BUTLER, MCINTYRE & BUTLER	



FOLIO PLAN

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



STRATA PLAN SHEET 2 OF 11 SHEETS PURSUANT TO (M767423)	STRATA TITLES ACT 1998 <div style="border: 1px solid black; padding: 2px; margin-top: 5px;"> <small>Council Delegate</small> </div>	Registered Number <div style="font-size: 1.2em; font-weight: bold; margin-top: 5px;">175755</div>
---	--	--

PART OF GROUND FLOOR LOTS 1-3
SCALE 1:200

THE HORIZONTAL LOT BOUNDARIES ARE SHOWN BY HEAVY UNBROKEN LINES DEFINED BY -

- UNLESS OTHERWISE DEFINED, ALONG THE OUTSIDE FACE OF THE BUILDING WALL OR DECK
- UNLESS OTHERWISE DEFINED, ALL LOT BOUNDARIES COMMON WITH ANOTHER LOT ARE THE CENTRE OF THE DIVIDING WALL INTERSECTING WITH THE EXTENSION OF THE FACE OF THE BUILDING
- THE OUTSIDE FACE OF THE BUILDING OR DECK LABELLED 'AA'
- THE CENTRE OF THE WALL LABELLED 'CC'
- A BOUNDARY LABELLED AC THAT IS PERPENDICULAR TO 'AA'

(MEASUREMENTS IN BRACKETS ARE FOR BOUNDARY FIXATION ONLY)

THE VERTICAL LOT BOUNDARIES EXTEND FROM THE 2.00 METRES BELOW GROUND LEVEL TO THE CENTRE OF THE CEILING OF THE GROUND FLOOR OF THE RESPECTIVE LOT.

 <small>Registered Land Surveyor</small>	23/5/19 <small>Date</small>
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FOLIO PLAN

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



STRATA PLAN SHEET 3 OF 11 SHEETS PURSUANT TO (M767423)	STRATA TITLES ACT 1998 <div style="border: 1px solid black; padding: 2px; margin-top: 5px;"> Council Delegate </div>	Registered Number <div style="font-size: 1.2em; font-weight: bold;">175755</div>
---	---	---

Council Delegate

16-7-2019
 Date

SITE BOUNDARY

DECK

PART OF LOT 1 96m²

PART OF LOT 2 95m²

PART OF LOT 3 95m²

PART OF LOT 4

PART OF LOT 5

PART OF LOT 6

FACE OF DECK

PART OF LOT 3

PART OF LOT 4

ENLARGEMENT A
SCALE 1:40

PART OF FIRST FLOOR LOTS 1-3
SCALE 1:200

THE HORIZONTAL LOT BOUNDARIES ARE SHOWN BY HEAVY UNBROKEN LINES DEFINED BY -

UNLESS OTHERWISE DEFINED, ARE ALONG THE OUTSIDE FACE OF THE BUILDING WALL OR DECK

UNLESS OTHERWISE DEFINED, ALL LOT BOUNDARIES COMMON WITH ANOTHER LOT ARE THE CENTRE OF THE DIVIDING WALL INTERSECTING WITH THE EXTENSION OF THE FACE OF THE BUILDING

THE OUTSIDE FACE OF THE BUILDING OR DECK LABELLED 'AA'

THE CENTRE OF THE WALL LABELLED 'CV'

A BOUNDARY LABELLED AC THAT IS PERPENDICULAR TO 'AA'

THE VERTICAL LOT BOUNDARIES EXTEND FROM THE CENTRE OF THE CEILING OF THE GROUND FLOOR UP TO THE UNDERSIDE OF THE EAVES AND GUTTERING OF THE RESPECTIVE LOT EXCEPT FOR -

THE HATCHED PORTION WHICH EXTENDS FROM THE CENTRE OF THE CEILING OF THE GROUND FLOOR TO 1.00 METRE BELOW THE UNDERSIDE OF THE EAVES AND GUTTERING OF LOT 3 AND FROM THE UNDERSIDE OF THE EAVES AND GUTTERING OF LOT 3 TO 15.00 METRE ABOVE GROUND LEVEL

THE BOUNDARY LABELLED 'AC' IS PERPENDICULAR TO 'CV'

THE BOUNDARY LABELLED 'AU' IS OPEN

THE BOUNDARY LABELLED 'UV' IS THE OUTSIDE FACE OF THE BUILDING ON THE FIRST FLOOR

(MEASUREMENTS IN BRACKETS ARE FOR BOUNDARY FIXATION ONLY)

Registered Land Surveyor

29/5/19
 Date



FOLIO PLAN

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



STRATA PLAN SHEET 4 OF 11 SHEETS PURSUANT TO (M767423)	STRATA TITLES ACT 1998 <div style="border: 1px solid black; padding: 2px; margin-top: 5px;"> Council Delegate </div>	Registered Number <div style="font-size: 1.2em; font-weight: bold;">175755</div>
<div style="text-align: center; margin-bottom: 20px;"> </div> <p>PART OF ROOF LOTS 1-3 SCALE 1:200</p> <p>THE HORIZONTAL LOT BOUNDARIES ARE SHOWN BY HEAVY UNBROKEN LINES DEFINED BY -</p> <p>LOT 1 DEFINED BY OUTSIDE FACE OF ROOF LABELLED 'AA' LOT 2 DEFINED BY OUTSIDE FACE OF ROOF LABELLED 'BB' LOT 3 DEFINED BY OUTSIDE FACE OF ROOF LABELLED 'CC', 'CD', 'CF', & 'DF'</p> <p>THE VERTICAL LOT BOUNDARIES EXTEND FROM THE UNDERSIDE OF THE EAVES AND GUTTERING OF EACH RESPECTIVE LOT, TO 15.00 METRES ABOVE GROUND LEVEL EXCEPT FOR-</p> <p>THE HATCHED PORTION LOTS 1 & 2 THAT IS: PART OF LOT 1 WHICH EXTENDS FROM THE UNDERSIDE OF THE EAVES AND GUTTERING OF LOT 1 UP TO 15.00 METRES ABOVE GROUND LEVEL PART OF LOT 2 WHICH EXTENDS FROM THE UNDERSIDE OF EAVES AND GUTTERING OF LOT 1 DOWN TO THE UNDERSIDE OF THE EAVES AND GUTTERING OF LOT 2</p> <p>THE HATCHED PORTION LOTS 2 & 3 THAT IS: PART OF LOT 2 WHICH EXTENDS FROM THE UNDERSIDE OF THE EAVES AND GUTTERING OF LOT 2 UP TO 15.00 METRES ABOVE GROUND LEVEL PART OF LOT 3 WHICH EXTENDS FROM THE UNDERSIDE OF EAVES AND GUTTERING OF LOT 2 DOWN TO THE UNDERSIDE OF THE EAVES AND GUTTERING OF LOT 3</p> <p>(MEASUREMENTS IN BRACKETS ARE FOR BOUNDARY FIXATION ONLY)</p>		
<div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid black; padding: 2px;"> Registered Land Surveyor </div> <div> 23/5/19 Date </div> </div>		



FOLIO PLAN

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



STRATA PLAN NEW SHEET 5 OF 11 SHEETS PURSUANT TO (M161473)		STRATA TITLES ACT 1998 Council Delegate	Registered Number 175755

PART OF GROUND FLOOR LOTS 4-7
 SCALE 1:150
 THE HORIZONTAL LOT BOUNDARIES ARE SHOWN BY HEAVY UNBROKEN LINES DEFINED BY -

- UNLESS OTHERWISE DEFINED, ALONG THE OUTSIDE FACE OF THE BUILDING WALL OR DECK
- UNLESS OTHERWISE DEFINED, ALL LOT BOUNDARIES COMMON WITH ANOTHER LOT ARE THE CENTRE OF THE DIVIDING WALL INTERSECTING WITH THE EXTENSION OF THE FACE OF THE BUILDING
- THE OUTSIDE FACE OF THE BUILDING OR DECK LABELLED 'CD', 'CF', & 'EF'
- THE CENTRE OF THE WALL LABELLED 'BB' & 'DD'
- THE BOUNDARIES LABELLED 'DG', & 'DE' ARE PERPENDICULAR TO 'DD'
- THE BOUNDARIES LABELLED 'BC' ARE PERPENDICULAR TO 'BB'

(MEASUREMENTS IN BRACKETS ARE FOR BOUNDARY FIXATION ONLY)

THE VERTICAL LOT BOUNDARIES EXTEND FROM THE 2.00 METRES BELOW GROUND LEVEL TO THE CENTRE OF THE CEILING OF THE GROUND FLOOR OF THE RESPECTIVE LOT.

Registered Land Surveyor

15/7/2019
 Date



FOLIO PLAN

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



STRATA PLAN		STRATA TITLES ACT 1998	Registered Number 175755
NEW SHEET 6 OF 11 SHEETS PURSUANT TO (M767423)		 Council Delegate	16-7-2019 Date
<p style="text-align: center;">ENLARGEMENT A SCALE 1:40</p>	<p style="text-align: center;">ENLARGEMENT B SCALE 1:40</p>	<p style="text-align: center;">ENLARGEMENT C SCALE 1:40</p>	
<p style="text-align: center;">PART OF FIRST FLOOR OF LOTS 4-7 SCALE 1:150</p> <p>THE HORIZONTAL LOT BOUNDARIES ARE SHOWN BY HEAVY UNBROKEN LINES DEFINED BY -</p> <ul style="list-style-type: none"> UNLESS OTHERWISE DEFINED, ARE ALONG THE OUTSIDE FACE OF THE BUILDING WALL OR DECK UNLESS OTHERWISE DEFINED, ALL LOT BOUNDARIES COMMON WITH ANOTHER LOT ARE THE CENTRE OF THE DIVIDING WALL INTERSECTING WITH THE EXTENSION OF THE FACE OF THE BUILDING THE OUTSIDE FACE OF THE BUILDING OR DECK LABELLED 'CE' & 'CD' & THE EXTENSION THEREOF LABELLED 'CZ' THE CENTRE OF THE WALL LABELLED 'BB', 'DV', 'VW', & 'DW' THE BOUNDARIES LABELLED 'DG', & 'DE' ARE PERPENDICULAR TO 'DD' THE BOUNDARIES LABELLED 'BC' ARE PERPENDICULAR TO 'BB' <p>THE VERTICAL LOT BOUNDARIES EXTEND FROM THE CENTRE OF THE CEILING OF THE GROUND FLOOR OF THE RESPECTIVE LOTS UP TO THE UNDERSIDE OF THE EAVES OF THE RESPECTIVE LOTS EXCEPT FOR-</p> <ul style="list-style-type: none"> THE HATCHED PORTION OF LOT 3 & 4 LABELLED 'WXYZCEDVW' THAT IS: PART OF LOT 3 WHICH EXTENDS FROM THE UNDERSIDE OF THE EAVES AND GUTTERING OF LOT 3 UP TO 15.00 METRES ABOVE GROUND LEVEL PART OF LOT 4 WHICH EXTENDS FROM THE CENTRE OF THE CEILING OF THE GROUND FLOOR OF LOT 3 ELONGATED UP TO THE UNDERSIDE OF THE EAVES AND GUTTERING OF LOT 3 THE BOUNDARY LABELLED 'WXYZ' THAT DEFINES THE EXTENT OF THE VERTICAL BOUNDARY OF LOT 3 IS THE OUTER FACE OF THE EAVES AND GUTTERING OF LOT 3 THE HATCHED PORTION LABELLED 'UVWDGTU' THAT IS: PART OF LOT 4 WHICH EXTENDS FROM 1.00 METRE BELOW THE UNDERSIDE OF THE EAVES AND GUTTERING OF LOT 3 UP TO THE UNDERSIDE OF THE EAVES AND GUTTERING OF LOT 3 THE BOUNDARY LABELLED TG IS AN EXTENSION OF GD THE BOUNDARY LABELLED TU IS OPEN THE BOUNDARY LABELLED 'UV' IS THE OUTSIDE FACE OF THE BUILDING ON THE FIRST FLOOR THE HATCHED PORTION OF LOTS 7 AND 8 THAT IS: PART OF LOT 7 WHICH EXTENDS FROM THE CENTRE OF THE CEILING OF THE GROUND FLOOR OF LOT 7 TO 0.50 METRES BELOW THE UNDERSIDE OF THE EAVES AND GUTTERING OF LOT 7 AND FROM THE UNDERSIDE OF THE EAVES AND GUTTERING OF LOT 7 TO 15.00 METRE ABOVE GROUND LEVEL <p>(MEASUREMENTS IN BRACKETS ARE FOR BOUNDARY FIXATION ONLY)</p>			
		 Registered Land Surveyor	15/7/2019 Date



FOLIO PLAN

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



STRATA PLAN NEW SHEET 7 OF 11 SHEETS PURSUANT TO (M767423)		STRATA TITLES ACT 1998 Council Delegate	Registered Number 175755
16-7-2019 Date			

ENLARGEMENT A
SCALE 1:40

ENLARGEMENT B
SCALE 1:40

PART OF ROOF LOTS 4-7
SCALE 1:150

THE HORIZONTAL LOT BOUNDARIES ARE SHOWN BY HEAVY UNBROKEN LINES DEFINED BY -
 LOT 4 DEFINED BY OUTSIDE FACE OF ROOF LABELLED 'GG', 'GV', 'GT', 'TU', & 'UV'
 LOT 5 DEFINED BY OUTSIDE FACE OF ROOF LABELLED 'HH'
 LOT 6 DEFINED BY OUTSIDE FACE OF ROOF LABELLED 'JJ'
 LOT 7 DEFINED BY OUTSIDE FACE OF ROOF LABELLED 'KK'
 THE OUTSIDE FACE OF THE BUILDING OR DECK LABELLED 'CE' & 'CD' & THE EXTENSION THEREOF LABELLED 'CZ'
 THE CENTRE OF THE WALL LABELLED 'DV', 'VW', & 'DW'
 THE BOUNDARIES LABELLED 'DG' & 'DE' ARE PERPENDICULAR TO 'DV'

THE VERTICAL LOT BOUNDARIES EXTEND FROM THE UNDERSIDE OF THE EAVES AND GUTTERING OF EACH RESPECTIVE LOT, TO 15.00m ABOVE GROUND LEVEL EXCEPT FOR-
 THE HATCHED PORTION LOTS 4 & 5 THAT IS:
 PART OF LOT 4 WHICH EXTENDS FROM THE UNDERSIDE OF THE EAVES AND GUTTERING OF LOT 4 UP TO 15.00m ABOVE GROUND LEVEL
 PART OF LOT 5 WHICH EXTENDS FROM THE UNDERSIDE OF EAVES AND GUTTERING OF LOT 4 DOWN TO THE UNDERSIDE OF THE EAVES AND GUTTERING OF LOT 5
 THE HATCHED PORTION LOTS 5 & 6 THAT IS:
 PART OF LOT 5 WHICH EXTENDS FROM THE UNDERSIDE OF THE EAVES AND GUTTERING OF LOT 5 UP TO 15.00m ABOVE GROUND LEVEL
 PART OF LOT 6 WHICH EXTENDS FROM THE UNDERSIDE OF EAVES AND GUTTERING OF LOT 5 DOWN TO THE UNDERSIDE OF THE EAVES AND GUTTERING OF LOT 6
 THE HATCHED PORTION LOTS 6 & 7 THAT IS:
 PART OF LOT 6 WHICH EXTENDS FROM THE UNDERSIDE OF THE EAVES AND GUTTERING OF LOT 6 UP TO 15.00m ABOVE GROUND LEVEL
 PART OF LOT 7 WHICH EXTENDS FROM THE UNDERSIDE OF EAVES AND GUTTERING OF LOT 6 DOWN TO THE UNDERSIDE OF THE EAVES AND GUTTERING OF LOT 7
 THE HATCHED PORTION OF LOT 3 & 4 LABELLED 'WXYZCEDVW' THAT IS:
 PART OF LOT 3 WHICH EXTENDS FROM THE UNDERSIDE OF THE EAVES AND GUTTERING OF LOT 3 UP TO 15.00 METRES ABOVE GROUND LEVEL
 PART OF LOT 4 WHICH EXTENDS FROM THE UNDERSIDE OF THE EAVES AND GUTTERING OF LOT 4 UP TO THE UNDERSIDE OF THE EAVES AND GUTTERING OF LOT 3
 THE BOUNDARY LABELLED 'WXYZ' THAT DEFINES THE EXTENT OF THE VERTICAL BOUNDARY OF LOT 3 IS THE OUTER FACE OF THE EAVES AND GUTTERING OF LOT 3
 THE HATCHED PORTION LABELLED 'UVWDTU' THAT IS:
 PART OF LOT 4 WHICH EXTENDS FROM 1.00 METRE BELOW THE UNDERSIDE OF THE EAVES AND GUTTERING OF LOT 3 UP TO THE UNDERSIDE OF THE EAVES AND GUTTERING OF LOT 3
 THE BOUNDARY LABELLED TG IS AN EXTENSION OF GD
 THE BOUNDARY LABELLED TU IS OPEN
 THE BOUNDARY LABELLED 'UV' IS THE OUTSIDE FACE OF THE BUILDING ON THE FIRST FLOOR

(MEASUREMENTS IN BRACKETS ARE FOR BOUNDARY FIXATION ONLY)

Registered Land Surveyor

15/7/2019
 Date



FOLIO PLAN

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



<p style="text-align: center;">STRATA PLAN</p> <p>NEW SHEET 8 OF 11 SHEETS PURSUANT TO (M76T423)</p>	<p style="text-align: center;">STRATA TITLES ACT 1998</p> <div style="border: 1px solid black; padding: 2px; text-align: center;"> Council Delegate </div>	<p style="text-align: right;">Registered Number</p> <p style="text-align: center; font-size: 1.2em;">175755</p>
<p>PART OF GROUND FLOOR LOTS 8-10 SCALE 1:300</p> <p>THE HORIZONTAL LOT BOUNDARIES ARE SHOWN BY HEAVY UNBROKEN LINES DEFINED BY - UNLESS OTHERWISE DEFINED, ALONG THE OUTSIDE FACE OF THE BUILDING WALL OR DECK UNLESS OTHERWISE DEFINED, ALL LOT BOUNDARIES COMMON WITH ANOTHER LOT ARE THE CENTRE OF THE DIVIDING WALL INTERSECTING WITH THE EXTENSION OF THE FACE OF THE BUILDING THE FACE OF BUILDING WALL OR DECK LABELLED 'BB' AND 'BC' AND EXTENSION THEREOF LABELLED 'BB*' THE CENTRE OF THE WALL LABELLED 'AA' THE TOE OF RETAINING WALL LABELLED 'B+C' THE BOUNDARY 'AB' IS PERPENDICULAR TO 'AA' THE BOUNDARY B+D IS OPEN AND PARALLEL TO 'CC' THE BOUNDARY 'CD' IS OPEN AND PERPENDICULAR TO 'CC'</p> <p>THE VERTICAL LOT BOUNDARY EXTENDS FROM 2.00M BELOW GROUND LEVEL TO THE LEVEL OF THE CENTRE OF THE CEILING OF THE GROUND FLOOR OF THE CORRESPONDING LOT</p> <p>(MEASUREMENTS IN BRACKETS ARE FOR BOUNDARY FIXATION ONLY)</p>		
<div style="display: flex; justify-content: space-between;"> <div> Registered Land Surveyor </div> <div> 20/5/19 Date </div> </div>		



FOLIO PLAN

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



STRATA PLAN		STRATA TITLES ACT 1998	Registered Number 175755
NEW SHEET 9 OF 11 SHEETS PURSUANT TO (M767423)		 Council Delegate _____ Date <u>16-7-2019</u>	

ENLARGEMENT A
SCALE 1:40

ENLARGEMENT B
SCALE 1:40

PART OF FIRST FLOOR LOTS 8-10
SCALE 1:300

THE HORIZONTAL LOT BOUNDARIES ARE SHOWN BY HEAVY UNBROKEN LINES DEFINED BY -

- UNLESS OTHERWISE DEFINED, ALONG THE OUTSIDE FACE OF THE BUILDING WALL OR DECK
- UNLESS OTHERWISE DEFINED, ALL LOT BOUNDARIES COMMON WITH ANOTHER LOT ARE THE CENTRE OF THE DIVIDING WALL INTERSECTING WITH THE EXTENSION THE CENTRE OF THE WALL LABELLED 'BB'
- THE FACE OF THE BUILDING OR DECK LABELLED 'CE' & 'DE'
- THE FACE OF THE EAVES AND GUTTERING LABELLED 'EE'
- THE BOUNDARY 'AB' & 'BC' ARE PERPENDICULAR TO 'BB'
- THE BOUNDARY 'AE' IS PARALLEL TO 'BB'
- THE BOUNDARY 'BE' & 'CE' ARE OPEN

THE VERTICAL LOT BOUNDARY EXTENDS FROM THE LEVEL OF THE CENTRE OF THE CEILING OF THE GROUND FLOOR UP TO THE UNDERSIDE OF THE EAVES AND GUTTERING OF THE CORRESPONDING LOT, EXCEPT FOR:

THE HATCHED PORTION OF LOT 7 & 8 LABELLED 'EEEECBBA' THAT IS:

- PART OF LOT 7 WHICH EXTENDS FROM THE UNDERSIDE OF THE EAVES AND GUTTERING OF LOT 7 UP TO 15.00M ABOVE GROUND LEVEL
- PART OF LOT 8 WHICH EXTENDS FROM THE CENTRE OF THE CEILING OF THE GROUND FLOOR OF LOT 7 ELONGATED UP TO THE UNDERSIDE OF THE EAVES AND GUTTERING OF LOT 7

THE HATCHED PORTION OF LOT 7 & 8 LABELLED 'EDECB' THAT IS:

- PART OF LOT 7 WHICH EXTENDS FROM THE CENTRE OF THE CEILING OF THE GROUND FLOOR OF LOT 7 TO 0.50 METRES BELOW THE UNDERSIDE OF THE EAVES AND GUTTERING OF LOT 7
- PART OF LOT 8 WHICH EXTENDS FROM 0.50M BELOW THE UNDERSIDE OF THE EAVES AND GUTTERING OF LOT 7 TO THE UNDERSIDE OF THE EAVES AND GUTTERING OF LOT 7

(MEASUREMENTS IN BRACKETS ARE FOR BOUNDARY FIXATION ONLY)

Registered Land Surveyor

28/5/19
 Date



FOLIO PLAN

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



STRATA PLAN		STRATA TITLES ACT 1998	Registered Number 175755
NEW SHEET 10 OF 11 SHEETS PURSUANT TO (M767423)		 Council Delegate _____ Date <u>16-7-2019</u>	

PART OF LOT 7 & 8
0.7m²

SEE ENLARGEMENT A

PART OF LOT 7

PART OF LOT 8

SEE ENLARGEMENT B

ENLARGEMENT C
SCALE 1:40

PART OF LOT 7

PART OF LOT 7 & 8
0.7m²

ENLARGEMENT A
SCALE 1:40

PART OF LOT 7

PART OF LOT 8

ENLARGEMENT B
SCALE 1:40

PART OF ROOF LOTS 8-10
SCALE 1:300



THE HORIZONTAL LOT BOUNDARIES ARE SHOWN BY HEAVY UNBROKEN LINES DEFINED BY -
 UNLESS OTHERWISE DEFINED, ALONG THE OUTSIDE FACE OF THE EAVES AND GUTTERING
 THE CENTRE OF THE WALL LABELLED 'BB'
 THE FACE OF THE BUILDING OR DECK LABELLED 'CE' & 'DE'
 THE FACE OF THE EAVES AND GUTTERING LABELLED 'EE' & 'GG'
 THE BOUNDARY 'AB', 'BC' & 'FG' ARE PERPENDICULAR TO 'BB'
 THE BOUNDARY 'AE' IS PARALLEL TO 'BB'
 THE BOUNDARY 'BE', 'CE' & 'EF' ARE OPEN

THE VERTICAL LOT BOUNDARY EXTENDS FROM THE UNDERSIDE OF THE EAVES AND GUTTERING UP TO 15.00 METRES ABOVE GROUND LEVEL, EXCEPT FOR:
 THE HATCHED PORTION OF LOT 7 & 8 LABELLED 'EEECBBAE' THAT IS:
 PART OF LOT 7 WHICH EXTENDS FROM THE UNDERSIDE OF THE EAVES AND GUTTERING OF LOT 7 UP TO 15.00M ABOVE GROUND LEVEL
 PART OF LOT 8 WHICH EXTENDS FROM THE CENTRE OF THE CEILING OF THE GROUND FLOOR OF LOT 7 ELONGATED UP TO THE UNDERSIDE OF THE EAVES AND GUTTERING OF LOT 7
 THE HATCHED PORTION OF LOT 7 & 8 LABELLED 'EDECBEE' THAT IS:
 PART OF LOT 7 WHICH EXTENDS FROM THE UNDERSIDE OF THE EAVES AND GUTTERING OF LOT 7 TO 15.00 METRE ABOVE GROUND LEVEL
 PART OF LOT 8 WHICH EXTENDS FROM 0.50M BELOW THE UNDERSIDE OF THE EAVES AND GUTTERING OF LOT 7 TO THE UNDERSIDE OF THE EAVES AND GUTTERING OF LOT 7
 (MEASUREMENTS IN BRACKETS ARE FOR BOUNDARY FIXATION ONLY)

Registered Land Surveyor

20/5/19
 Date



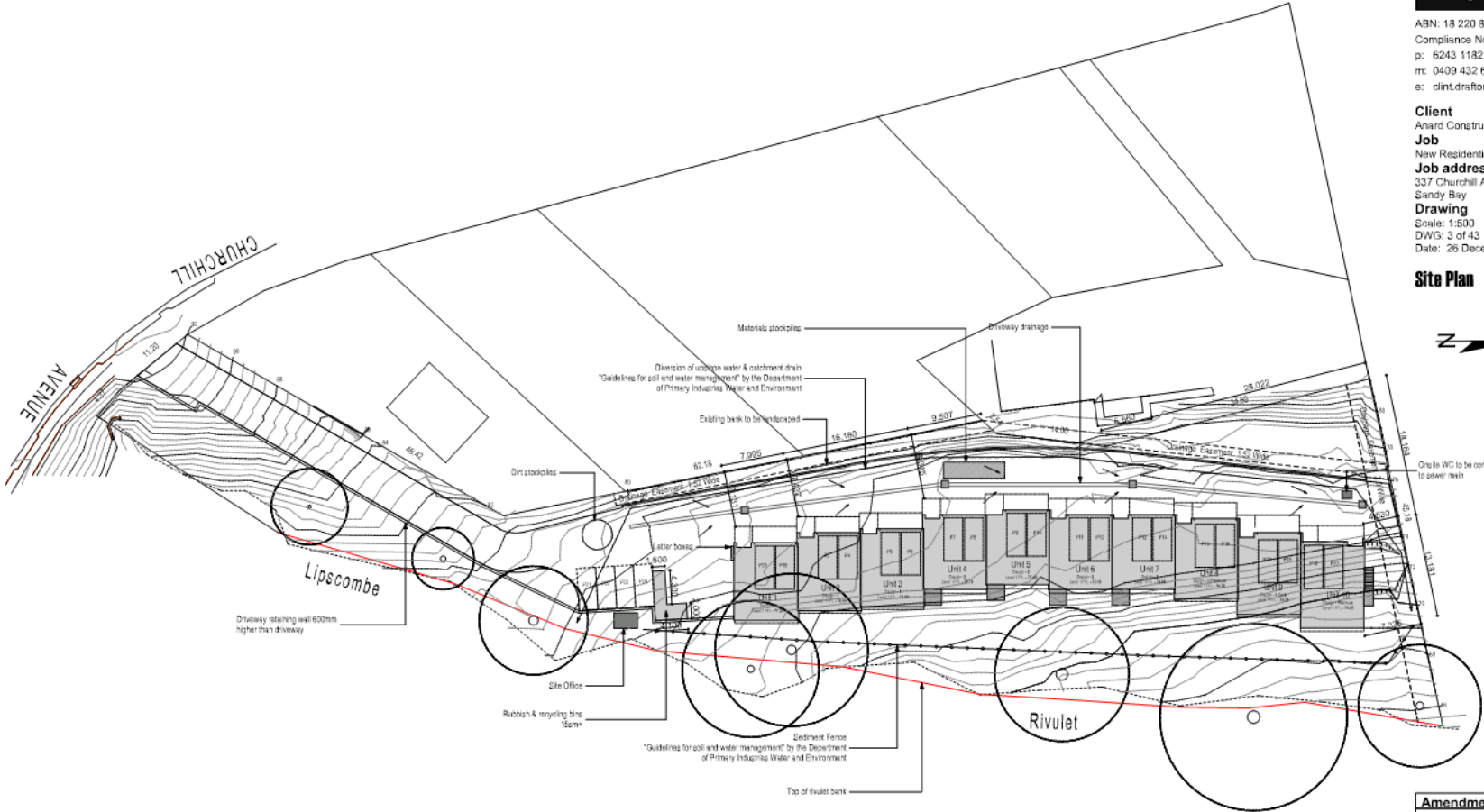
STRATA PLAN		STRATA TITLES ACT 1998	Registered Number 175755																																																
SHEET 11 OF 11 SHEETS PURSUANT TO (M767423)																																																			
NAME OF BODY CORPORATE: STRATA CORPORATION No. 175755 No. 337 CHURCHILL AVENUE, SANDY BAY		WINSTON ON CHURCHILL																																																	
ADDRESS FOR THE SERVICE OF NOTICES: No. 337 CHURCHILL AVENUE, SANDY BAY 7005																																																			
SURVEYORS CERTIFICATE		COUNCIL CERTIFICATE																																																	
<p>I Alexander Purden McIndoe of Kingston a surveyor registered under the Surveyors Act 2002 certify that the building or buildings erected on the site and drawn on sheet 1 of this plan are within the site boundaries of the folio stated on sheet 1 and any encroachment beyond those boundaries is properly authorised according to law.</p> <div style="display: flex; justify-content: space-between; margin-top: 20px;"><div style="text-align: center;"> _____ Registered Land Surveyor</div><div style="text-align: center;"><u>28/5/19</u> Date</div><div style="text-align: center;"><u>43943LM</u> Ref No</div></div>		<p>I certify that the Hobart City Council has:</p> <p>(a) approved the lots shown in this plan and</p> <p>(b) issued this certificate of approval in accordance with section 31 of the Strata Titles Act 1998</p> <div style="display: flex; justify-content: space-between; margin-top: 20px;"><div style="text-align: center;"> _____ Council Delegate</div><div style="text-align: center;"><u>16-7-2019</u> Date</div><div style="text-align: center;"><u>STR-19-37 & 56068105</u> Ref No</div></div>																																																	
GENERAL UNIT ENTITLEMENTS																																																			
<table border="1" style="width: 100%; border-collapse: collapse;"><thead><tr><th style="width: 15%;">LOT</th><th style="width: 85%;">UNIT ENTITLEMENT</th></tr></thead><tbody><tr><td>1</td><td>10</td></tr><tr><td>2</td><td>10</td></tr><tr><td>3</td><td>10</td></tr><tr><td>4</td><td>10</td></tr><tr><td>5</td><td>10</td></tr><tr><td>6</td><td>10</td></tr><tr><td>7</td><td>10</td></tr><tr><td>8</td><td>10</td></tr><tr><td>9</td><td>10</td></tr><tr><td>10</td><td>10</td></tr><tr><td> </td><td> </td></tr><tr><td> </td><td> </td></tr><tr><td> </td><td> </td></tr><tr><td> </td><td> </td></tr><tr><td> </td><td> </td></tr><tr><td> </td><td> </td></tr><tr><td> </td><td> </td></tr><tr><td> </td><td> </td></tr><tr><td> </td><td> </td></tr><tr><td> </td><td> </td></tr><tr><td> </td><td> </td></tr><tr><td> </td><td> </td></tr><tr><td>TOTAL</td><td>100</td></tr></tbody></table>				LOT	UNIT ENTITLEMENT	1	10	2	10	3	10	4	10	5	10	6	10	7	10	8	10	9	10	10	10																									TOTAL	100
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TOTAL	100																																																		



ABN: 18 220 805 704
Compliance No: CC 1159 Q
p: 6243 1182
m: 0409 432 670
e: clint.draftone@bigpond.com

Client
Anard Constructions
Job
New Residential Units
Job address
337 Churchill Avenue,
Sandy Bay
Drawing
Scale: 1:500
DWG: 3 of 43
Date: 26 December 2016

Site Plan



Amendments	
Date	By
1-2-2016	CW
12-2-2016	CW
22-3-2016	CW
9-5-2016	CW
19-9-2016	CW

Builders, Tradesmen, Sub-contractors and Prefabricators to verify all dimensions and levels prior to commencing any building works. Use written dimensions only. Do not scale from drawings.

A change of use to visitor accommodation is proposed for 7/337 Churchill Avenue, Sandy Bay.
There are two car parking spaces in the internal garage as detailed on this plan plus additional visitor parking on site



ABN: 18 220 805 704
Compliance No: CC 1159 Q
p: 6243 1182
m: 0409 432 670
e: clint.draftone@bigpond.com

Client
Anard Constructions
Job
New Residential Units
Job address
337 Churchill Avenue,
Sandy Bay
Drawing
Scale: 1:100
DWG: 12 of 43
Date: 26 December 2016

Floor Plan Unit 7



Walls

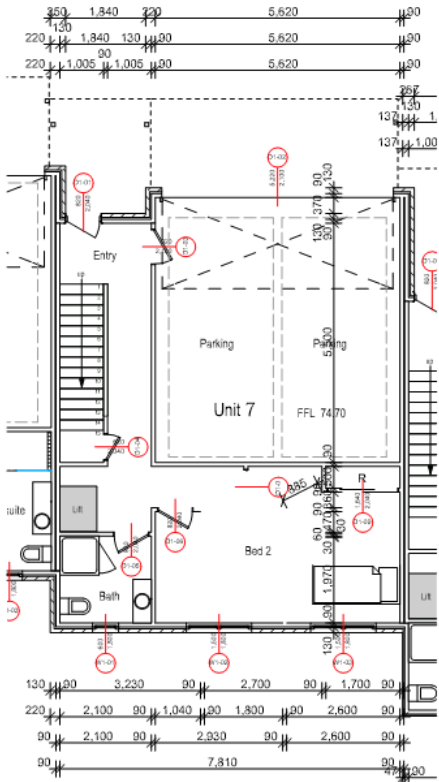
- Existing Walls
- New Walls
- Walls to be removed

Windows

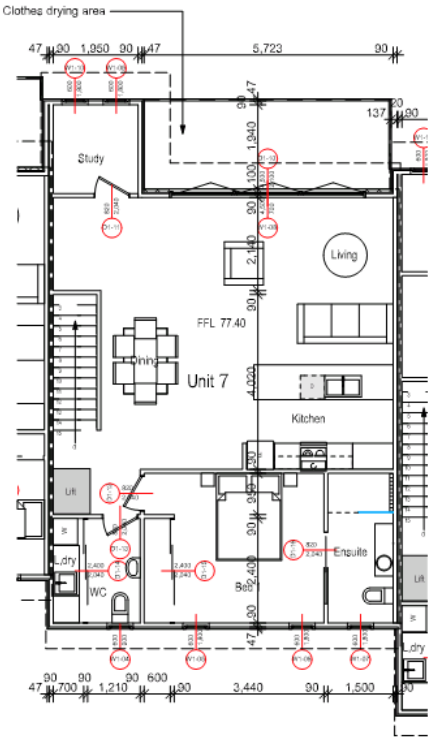
Width 1,210 Hight 800

W06 Window number

Amendments	
Date	By
Builders, Tradesmen, Sub-contractors and Prefabricators to verify all dimensions and levels prior to commencing any building works. Use written dimensions only. Do not scale from drawings.	



Level 1



Level 2

VISITOR MANAGEMENT PLAN

PROPERTY ADDRESS: 7/337 Churchill Avenue, Sandy Bay

PLANNING PERMIT REF.: PLN-22-449

CONDITION NO.: N/A

CURRENT MANAGER'S NAMES:

CURRENT MANAGER'S NO.:

This visitor management plan sets out the requirements which must be met while the visitor accommodation use operates at this property in order to limit, manage and mitigate unreasonable impacts upon the amenity of surrounding properties.

It is a mandatory requirement that this visitor management plan is complied with and if it is breached then this will constitute a breach of the planning permit, which may give rise to enforcement action by the Hobart City Council.

The operators of the visitor accommodation at the property must comply with the following requirements:

1. Appoint a Manager who will actively manage the property.

The Managers who is specified above are the initial Managers. If the Manager and/or their phone number changes, the new name and/or phone number must be provided within 24 hours to:

- (a) the City Planning Division of the City of Hobart by emailing planning@hobartcity.com.au; and
- (b) each neighbouring property, including those properties which are next to the property, over the road and behind the property.

The Manager must take steps to ensure that all bookings and use of the property comply with this visitor management plan.

2. The maximum number of guests allowed to use the property is 5.

All online booking platforms listing the visitor accommodation and all guest check in notices will state the following:

- (a) The maximum number of guests who are permitted to use the property is **5**.
- (b) If you are planning to have more than **5** visitors at the property during your stay, please discuss your plans with us right now.

The guest numbers of all bookings must be monitored by the Manager of the visitor accommodation.

- 3. The maximum number of vehicles to be associated with guests is 2 standard vehicles that are all capable of being driven onto the site.**

All online booking platforms listing the visitor accommodation and all guest check in notices will state the following:

- (a) The maximum number of vehicles which may be associated with any booking is 2 standard vehicles that are all capable of being driven onto the site.
- (b) Guests are requested to use on-site parking. Onsite parking is provided within a 2 space internal garage.

- 4. The property must be used in a way which is respectful of the residential setting of the property.**

All online booking platforms listing the visitor accommodation and all guest check in notices will state the following:

- (a) We expect all guests treat our house with respect.
- (b) Guests are advised to be respectful of the residential setting of the visitor accommodation at all times, and to keep noise to a minimum, especially when using any outdoor areas of the property including the property's decks and balconies.
- (c) The property is not to be used for parties or functions.
- (d) The Manager of the visitor accommodation will monitor the behaviour of all guests. If any neighbours make any complaint to the Manager of the visitor accommodation, the Manager of the visitor accommodation will immediately visit the site to address that complaint.
- (e) If the Manager's directions are not complied with then the booking may be terminated immediately and the costs of accommodation will not be refunded.

- 5. An appropriate waste management protocol must be implemented.**

The Manager must ensure that rubbish is removed as appropriate. There are permanent rubbish collection skip bins, including recycling, available on site which are emptied on a weekly basis as arranged by the body corporate. Online booking platforms and house rules clearly define the expectations for rubbish removal after each guest has

3

checked out from the visitor accommodation. Cleaners are also aware of the location and expectation of use of the communal rubbish removal skip bins.

6. Circulation of this visitor management plan

This visitor management plan must be provided to each neighbouring property, including those properties which are next to the property, over the road and behind the property prior to the commencement of the visitor accommodation use.

**7.2.6 4 RUPARA AVENUE, WEST HOBART - CHANGE OF USE TO
VISITOR ACCOMMODATION
PLN-22-161 - FILE REF: F22/81794**

Address: 4 Rupara Avenue, West Hobart

Proposal: Change of Use to Visitor Accommodation

Expiry Date: 28 September 2022

Extension of Time: Not applicable

Author: Michael McClenahan

RECOMMENDATION

That pursuant to the *Hobart Interim Planning Scheme 2015*, the Council approve the application for a change of use to visitor accommodation, at 4 Rupara Avenue, West Hobart 7000 for the reasons outlined in the officer's report and a permit containing the following conditions be issued:

PLN 18

Prior to the commencement of the approved use, a management plan for the operation of the visitor accommodation must be submitted and approved as a Condition Endorsement, to the satisfaction of the Council's Director City Life. The management plan must include measures to limit, manage and mitigate unreasonable impacts upon the amenity of long term residents. These measures must include, but are not limited to, the following requirements:

1. To limit, manage, and mitigate noise generated as a result of the visitor accommodation.
2. To limit, manage, and mitigate behaviour issues caused as a result of the visitor accommodation.
3. To maintain the security of the building where the visitor accommodation would be located, including managing and/or limiting access to shared areas and facilities.
4. To specify the maximum permitted occupancy of the visitor accommodation.
5. To specify that guests must utilise the site for the parking of vehicles, that the maximum number of vehicles to be parked on the site (X), and detail where the parking spaces are located and how the

spaces are to be accessed. Additionally, at the booking stage, guests should be discouraged from bringing more than X vehicles and the parking of any additional vehicles in nearby streets should also be discouraged.

6. To provide a name and contact phone number of a person who will respond to any complaints regarding behaviour of guests. If the property is sold the Visitor Accommodation Management Plan (VAMP) must be updated with new contact details.

Once approved, the management plan must be implemented prior to the commencement of the approved use and must be maintained for as long as the visitor accommodation is in operation. The VAMP must be provided to adjacent property owners and occupiers within 14 days of being approved. If the property is sold, the updated VAMP (in accordance with 6. above) must be provided to adjacent property owners and occupiers within 10 business days of settlement.

Advice:

This condition requires further information to be submitted as a Condition Endorsement. Refer to the Condition Endorsement advice at the end of this permit.

Reason for condition

To ensure that visitor accommodation does not cause an unreasonable loss of residential amenity.

ADVICE

The following advice is provided to you to assist in the implementation of the planning permit that has been issued subject to the conditions above. The advice is not exhaustive and you must inform yourself of any other legislation, by-laws, regulations, codes or standards that will apply to your development under which you may need to obtain an approval. Visit the Council's [website](#) for further information.

Prior to any commencement of work on the site or commencement of use the following additional permits/approval may be required from the Hobart City Council.

NOISE REGULATIONS

Click [here](#) for information with respect to noise nuisances in residential areas.

FEES AND CHARGES

Click [here](#) for information on the Council's fees and charges.

VISITOR ACCOMMODATION

More information on visitor accommodation, including when building approval is required, can be found [here](#).

In all cases, check with your insurance company that you have adequate cover.



If you are in a bushfire prone area there may be a need to create/review the Bushfire Management Hazard Plan for your property.

If you have a spa or a pool at your property then you are required to test for microbiological quality and chemical parameters on a monthly basis, under the *Public Health Act 1997*. If you have any questions about this then please call our Environmental Health team on 6238 2711.

If you are providing food for consumption on the property, you may require a food business registration in accordance with the *Food Act 2003*. Click [here](#) for more information, or call our Environmental Health team on 6238 2711.

You are encouraged to have in place a management plan for the operation of the visitor accommodation. The management plan should include measures to limit, manage and mitigate unreasonable impacts upon the amenity of permanent residents, including addressing issues like noise, waste management, customer behaviour, security, and maximum occupancy.

Visitor accommodation is also considered to be a commercial use and also not eligible to residential parking permits. Under the current policy for the issuing of residential parking permits, the proposed change of use to visitor accommodation would not entitle the property to a residential parking permit, or a transferable "bed and breakfast" parking permit.

- Attachment A: PLN-22-161 - 4 RUPARA AVENUE WEST
HOBART TAS 7000 - Planning Committee or
Delegated Report ↓ 
- Attachment B: PLN-22-161 - 4 RUPARA AVENUE WEST
HOBART TAS 7000 - CPC Agenda Documents ↓


**APPLICATION UNDER HOBART INTERIM PLANNING SCHEME 2015**

Type of Report: Committee
Committee: 22 August 2022
Expiry Date: 28 September 2022
Application No: PLN-22-161
Address: 4 RUPARA AVENUE , WEST HOBART
Applicant: Richard Law
4 Rupara Avenue
Proposal: Change of Use to Visitor Accommodation
Representations: Five
Performance criteria: Parking and Access Code

1. Executive Summary

- 1.1 Planning approval is sought for a Change of Use to Visitor Accommodation, at 4 Rupara Avenue, West Hobart.
- 1.2 More specifically the proposal includes:
 - Complete change of use of three bedroom single dwelling and attached one bedroom bedsit from Residential to two Visitor Accommodation units
 - No on-site car parking will be provided
- 1.3 The proposal relies on performance criteria to satisfy the following standards and codes:
 - 1.3.1 Parking and Access Code - Number of Parking Spaces
- 1.4 Five (5) representations objecting to the proposal were received within the statutory advertising period between 25/07/22 - 08/08/22.
- 1.5 The proposal is recommended for approval subject to conditions.
- 1.6 The final decision is delegated to the Committee because five or more objections were received during the statutory advertising period.

2. Site Detail

- 2.1 The subject site is located at 4 Rupara Avenue, West Hobart and comprises a single title lot approximately 627m² in size. The site presently contains a single storey dwelling with attached one bedroom bedsit at the rear as well as an attached carport and detached outbuilding. The surrounding area is characterised by residential uses.



Figure 1: Aerial image of the subject site (bordered in blue) and surrounding area.

3. Proposal

- 3.1 Planning approval is sought for a Change of Use to Visitor Accommodation, at 4 Rupara Avenue, West Hobart.
- 3.2 More specifically the proposal includes:
- Complete change of use of three bedroom single dwelling and attached one bedroom bedsit from Residential to two Visitor Accommodation units
 - No on-site car parking will be provided

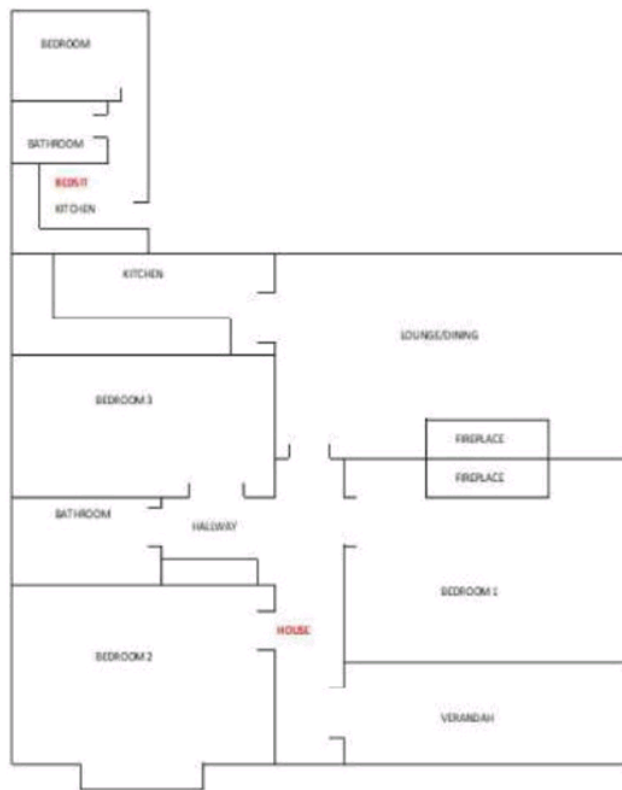


Figure 2: Provided floor plan of existing dwelling.

4. Background

4.1 There is no relevant background for this application.

5. Concerns raised by representors

5.1 Five (5) representations objecting to the proposal were received within the statutory advertising period between 25/07/22 - 08/08/22.

5.2 The following table outlines the concerns raised in the representations received. Those concerns which relate to a discretion invoked by the proposal are addressed in Section 6 of this report.

Housing Issues

The Council should not approve this application for a family-style home in a residential area to be converted into short stay visitor accommodation. As the Council is likely aware, the current rental vacancy rate in Hobart is 0.6% and anything between 0% and 2.5% is considered to be tight. It is near impossible for people wishing to live in Hobart and contribute to its community to find rental accommodation at all, let alone at an affordable price. Further, the continual rise in house prices is putting home ownership as alternative to renting out of reach for most residents of the city.

In 2020, the Tasmanian Parliament's House of Assembly Select Committee on Housing Affordability tabled the report from its Inquiry into Housing Affordability Dr. Julia Verdouw and Professor Richard Eccleston from the Institute for the Study of Social Change submitted that "Airbnb-style accommodation, including bed and breakfast establishments, also enjoyed strong growth, with an 8% jump in visitor numbers. But there have also been losers. Tasmania faces significant housing challenges, including an acute shortage of affordable long-term rental accommodation, particularly in Greater Hobart. Housing shortages have worsened as the short stay accommodation sector has expanded." (p 34)

With this in mind, the Council should not approve applications to convert into visitor accommodation homes that could house a family or other group of residents who would contribute to the vibrant life of the city of Hobart. A house such as that at 4 Rupara Ave would better serve the community if it were made available to the long-term rental market rather than turned into tourist accommodation

Please consider this matter and the Council's responsibilities to the residents of Hobart seriously before approving this application.

Residential Amenity

Rupara Avenue is a quiet suburban street, housing many long-term residents including several single women and growing families.

Turning 4 Rupara Avenue into visitor accommodation will also change the dynamics of the street, and not necessarily for the better. For instance, when disruptive, heavy drinking, or noisy holiday-makers choose to stay. This is bound to occur from time to time since the owners of 4 Rupara Avenue cannot guarantee the calibre of people who would be seeking visitor accommodation.

It seems from this description that this application goes against the Hobart City Councils decision in March of this year to prohibit new short stay permits in residential zones. Rupara Avenue is a lovely quiet street and it would be disappointing to see the residential make up of the street change.

Parking Stress

I am concerned that making 4 Rupara Avenue available as visitor accommodation will put further parking stress on nearby residents, particularly at the top end of the street where the road is flatter and wider. In reality, there could be three cars associated with visitors staying in the front part of the house, and two cars driven by the visitors staying out the back. That's potentially five cars, three more than there is room for on the street at the front of the house. And when holiday-makers arrive in their Kombi vans, four wheel drives, campervans, Winnebagos, or with a trailer in tow, passing cars will have added difficulty in getting through the bottleneck that already exists in that narrow part of the street, and damage to nearby parked cars would be more likely.

It is also my understanding that residential parking in Rupara Avenue has become increasing difficult over the past few years due to the increased traffic in Summerhill Road as these residents are utilising Rupara Avenue for parking. The application states that two on street parking spaces will be required for visitors staying at 4 Rupara Avenue. However the proposed visitor accommodation has a total of 4 bedrooms so it is possible there will be a requirement for more than two on street parking spaces which are currently at a premium.

Rupara Avenue becomes particularly narrow in the vicinity of my property (3 Rupara) and in the past I have had difficulty in moving in and out of my off street parking if there have been large vehicles parked on the opposite side of the road outside 4 Rupara and near my driveway. An increase in traffic and the potential for larger vehicles linked to the proposed accommodation would seem inappropriate for this narrow part of the avenue.

6. Assessment

- 6.1 The *Hobart Interim Planning Scheme 2015* is a performance based planning scheme. To meet an applicable standard, a proposal must demonstrate compliance with either an acceptable solution or a performance criterion. Where a proposal complies with a standard by relying on one or more performance criteria, the Council may approve or refuse the proposal on that basis. The ability to approve or refuse the proposal relates only to the performance criteria relied on.
- 6.2 The site is located within the General Residential Zone of the *Hobart Interim*

Planning Scheme 2015.

6.3 The existing use is Residential (single dwelling). The proposed use is Visitor Accommodation. The existing use is a no permit required use in the zone. The proposed use is a permitted use in the zone.

6.4 The proposal has been assessed against:

6.4.1 Planning Directive No.6

6.4.2 E6.0 Parking and Access Code

6.5 The proposal relies on the following performance criteria to comply with the applicable standards:

6.5.1 Parking and Access Code:

Number of Parking Spaces - E6.6.1 P1

6.6 Each performance criterion is assessed below.

6.7 Number of Parking Spaces - E6.6.1 P1

6.7.1 The acceptable solution at clause 6.6.1 A1 requires the number of on-site car parking spaces must be no less than and no greater than the number specified in Table E6.1, two spaces.

6.7.2 The proposal includes no on-site car parking spaces.

6.7.3 The proposal does not comply with the acceptable solution; therefore assessment against the performance criterion is relied on.

6.7.4 The performance criterion at clause 6.6.1 P1 provides as follows:

The number of on-site car parking spaces must be sufficient to meet the reasonable needs of users, having regard to all of the following:

(a) car parking demand;

(b) the availability of on-street and public car parking in the locality;

(c) the availability and frequency of public transport within a 400m

walking distance of the site;

(d) the availability and likely use of other modes of transport;

(e) the availability and suitability of alternative arrangements for car parking provision;

(f) any reduction in car parking demand due to the sharing of car parking spaces by multiple uses, either because of variation of car parking demand over time or because of efficiencies gained from the consolidation of shared car parking spaces;

(g) any car parking deficiency or surplus associated with the existing use of the land;

(h) any credit which should be allowed for a car parking demand deemed to have been provided in association with a use which existed before the change of parking requirement, except in the case of substantial redevelopment of a site;

(i) the appropriateness of a financial contribution in lieu of parking towards the cost of parking facilities or other transport facilities, where such facilities exist or are planned in the vicinity;

(j) any verified prior payment of a financial contribution in lieu of parking for the land;

(k) any relevant parking plan for the area adopted by Council;

(l) the impact on the historic cultural heritage significance of the site if subject to the Local Heritage Code;

(m) whether the provision of the parking would result in the loss, directly or indirectly, of one or more significant trees listed in the Significant Trees Code.

6.7.5 The proposal was referred to Council's Development Engineer who has provided the following assessment:

The number of on-site car parking spaces must be sufficient to meet the reasonable needs of users, having regard to all of the following:

(a) car parking demand; - **The proposed use of two visitor**

accommodation uses requires two (2) on-site car parking spaces which is not to be utilised within the existing driveway due to the narrow nature of the driveway, resulting in a two (2) space deficiency. Therefore there is no further on-site car parking deficiency. It may be argued that the proposed use may generate less parking demand as not all patrons may utilise a motor vehicle.

(b) the availability of on-street and public car parking in the locality; - **There is a reasonable supply of on-street parking in the surrounding road network.**

(c) the availability and frequency of public transport within a 400m walking distance of the site; - **Metro Tasmania operate regular bus services within 400 metres of the subject site.**

(d) the availability and likely use of other modes of transport; - **The site is located a convenient walking distance from shops, and services.**

(e) the availability and suitability of alternative arrangements for car parking provision; - **No alternative parking provision is available or considered necessary.**

(f) any reduction in car parking demand due to the sharing of car parking spaces by multiple uses, either because of variation of car parking demand over time or because of efficiencies gained from the consolidation of shared car parking spaces; - **Not applicable.**

(g) any car parking deficiency or surplus associated with the existing use of the land; - **The current use as a dwelling would have required two (2) on-site car parking space to meet the acceptable solution therefore the current on-site car parking deficiency is two (2) parking spaces as a result of the existing driveway not being utilized for on-site car parking due to the narrow nature of the driveway.**

(h) any credit which should be allowed for a car parking demand deemed to have been provided in association with a use which existed before the change of parking requirement, except in the case of substantial redevelopment of a site; - **Not applicable.**

(i) the appropriateness of a financial contribution in lieu of parking towards the cost of parking facilities or other transport facilities, where such facilities exist or are planned in the vicinity; - **Not applicable.**

(j) any verified prior payment of a financial contribution in lieu of parking for the land; - **Not applicable.**

(k) any relevant parking plan for the area adopted by Council; - **Not applicable.**

(l) the impact on the historic cultural heritage significance of the site if subject to the Local Heritage Code; - **Not applicable.**

(m) whether the provision of the parking would result in the loss, directly or indirectly, of one or more significant trees listed in the Significant Trees Code. - **No impact.**

Based on the above assessment and given the submitted documentation, the parking provision may be accepted under Performance Criteria P1:E6.6.1 of the Planning Scheme. This is particularly due to the actual parking demands that will be generated by the development.

Representations have been received regarding the impact to on street parking and the flow of traffic due to the width of the street.

Development Engineering response to representation:

The applicant does not propose to utilize any on-site car parking within the existing driveway due to the narrow nature of the existing driveway. The applicant has provided comments that the existing residents of the dwelling do not utilize the existing driveway for on-site car parking due to the narrow nature of the driveway and the residents vehicles are parked on the street. The current use (dwelling) would have required two (2) on-site car parking spaces which is not utilised within the existing driveway due to the narrow nature of the driveway, resulting in a two (2) space deficiency. The proposed use of two (2) visitor accommodation uses requires two (2) on-site car parking spaces (one space for each visitor accommodation use) which is not to be utilised within the existing driveway due to the narrow nature of the driveway, resulting in a two (2) space deficiency. There is no further on-site car parking deficiency. The number of parking spaces requirement will not change with the proposed use. Based on parking requirements and the existing parking practices it is considered that on street parking will not change with the proposed use and it may be argued that the proposed use may generate less parking demand as not all patrons may utilise a motor vehicle.

Vehicles may be parked on street where it is legal to do so such that suitable width of road way is available in accordance with the legal requirements.

- 6.7.6 The proposal complies with the performance criterion.

7. Discussion

- 7.1 Planning approval is sought for a Change of Use to Visitor Accommodation, at 4 Rupara Avenue, West Hobart.

- 7.2 The application was advertised and received five (5) representations. The representations raised concerns including risk of the change of use further restricting housing availability, pressure the change of use will have on on-street parking in the area, and impacts to the residential amenity of the area.

The concerns regarding parking pressure have been addressed in section 6 of this report by the assessing Development Engineer. The proposal has met the acceptable solutions of Planning Directive No.6 and as such amenity impacts are not assessed. A Visitor Accommodation Management Plan will be conditioned as part of any approval to ensure the appropriate management of the use and minimising impacts to existing residential amenity. It is acknowledged that while long-term housing availability continues to be a pressing issue in Hobart these issues cannot be considered as part of this planning assessment as Planning Directive No.6 does not include the matter as a relevant assessment criteria.

- 7.3 The proposal has been assessed against the relevant provisions of the planning scheme and is considered to perform well.
- 7.4 The proposal has been assessed by other Council officers, including the Council's Development Engineer. The officers have raised no objection to the proposal, subject to conditions.
- 7.5 The proposal is recommended for approval.

8. Conclusion

- 8.1 The proposed Change of Use to Visitor Accommodation, at 4 Rupara Avenue, West Hobart satisfies the relevant provisions of the *Hobart Interim Planning Scheme 2015*, and as such is recommended for approval.

9. Recommendations

That: Pursuant to the *Hobart Interim Planning Scheme 2015*, the Council approve the application for a Change of Use to Visitor Accommodation, at 4 Rupara Avenue, West Hobart for the reasons outlined in the officer's report and a permit containing the following conditions be issued:

PLN 18

Prior to the commencement of the approved use, a management plan for the operation of the visitor accommodation must be submitted and approved as a Condition Endorsement, to the satisfaction of the Council's Director City Life. The management plan must include measures to limit, manage and mitigate unreasonable impacts upon the amenity of long term residents. These measures must include, but are not limited to, the following requirements:

1. To limit, manage, and mitigate noise generated as a result of the visitor accommodation.
2. To limit, manage, and mitigate behaviour issues caused as a result of the visitor accommodation.
3. To maintain the security of the building where the visitor accommodation would be located, including managing and/or limiting access to shared areas and facilities.
4. To specify the maximum permitted occupancy of the visitor accommodation.
5. To specify that guests must utilise the site for the parking of vehicles, that the maximum number of vehicles to be parked on the site (X), and detail where the parking spaces are located and how the spaces are to be accessed. Additionally, at the booking stage, guests should be discouraged from bringing more than X vehicles and the parking of any additional vehicles in nearby streets should also be discouraged.
6. To provide a name and contact phone number of a person who will respond to any complaints regarding behaviour of guests. If the property is sold the Visitor Accommodation Management Plan (VAMP) must be updated with new contact details.

Once approved, the management plan must be implemented prior to the commencement of the approved use and must be maintained for as long as the visitor accommodation is in operation. The VAMP must be provided to adjacent property owners and occupiers within 14 days of being approved. If the property is sold, the updated VAMP (in accordance with 6. above) must be

provided to adjacent property owners and occupiers within 10 business days of settlement.

Advice:

This condition requires further information to be submitted as a Condition Endorsement. Refer to the Condition Endorsement advice at the end of this permit.

Reason for condition

To ensure that visitor accommodation does not cause an unreasonable loss of residential amenity.

ADVICE

The following advice is provided to you to assist in the implementation of the planning permit that has been issued subject to the conditions above. The advice is not exhaustive and you must inform yourself of any other legislation, by-laws, regulations, codes or standards that will apply to your development under which you may need to obtain an approval. Visit the Council's [website](#) for further information.

Prior to any commencement of work on the site or commencement of use the following additional permits/approval may be required from the Hobart City Council.

NOISE REGULATIONS

Click [here](#) for information with respect to noise nuisances in residential areas.

FEES AND CHARGES

Click [here](#) for information on the Council's fees and charges.

VISITOR ACCOMMODATION

More information on visitor accommodation, including when building approval is required, can be found [here](#).

In all cases, check with your insurance company that you have adequate cover.

If you are in a bushfire prone area there may be a need to create/review the Bushfire Management Hazard Plan for your property.

If you have a spa or a pool at your property then you are required to test for

microbiological quality and chemical parameters on a monthly basis, under the *Public Health Act 1997*. If you have any questions about this then please call our Environmental Health team on 6238 2711.

If you are providing food for consumption on the property, you may require a food business registration in accordance with the *Food Act 2003*. Click [here](#) for more information, or call our Environmental Health team on 6238 2711.

You are encouraged to have in place a management plan for the operation of the visitor accommodation. The management plan should include measures to limit, manage and mitigate unreasonable impacts upon the amenity of permanent residents, including addressing issues like noise, waste management, customer behaviour, security, and maximum occupancy.

Visitor accommodation is also considered to be a commercial use and also not eligible to residential parking permits. Under the current policy for the issuing of residential parking permits, the proposed change of use to visitor accommodation would not entitle the property to a residential parking permit, or a transferable "bed and breakfast" parking permit.



(Michael McClenahan)

Development Appraisal Planner

As signatory to this report, I certify that, pursuant to Section 55(1) of the Local Government Act 1993, I hold no interest, as referred to in Section 49 of the Local Government Act 1993, in matters contained in this report.



(Karen Abey)

Manager Development Appraisal

As signatory to this report, I certify that, pursuant to Section 55(1) of the Local Government Act 1993, I hold no interest, as referred to in Section 49 of the Local Government Act 1993, in matters contained in this report.

Date of Report: 10 August 2022

Attachment(s):

Attachment B - CPC Agenda Documents

Planning: #253412

Property

4 RUPARA AVENUE WEST HOBART TAS 7000

People**Applicant ***

Richard Law
4 Rupara Avenue
WEST HOBART TAS 7000
+61408956112
emma@athol.com.au

Owner *

Richard Law
4 Rupara Avenue
WEST HOBART TAS 7000
+61408956112
emma@athol.com.au

Entered By

EMMA LACEY
0408956112
emma@athol.com.au

Use

Visitor accomodation

Details

Have you obtained pre application advice?

☒ No

If YES please provide the pre application advice number eg PAE-17-xx

Are you applying for permitted visitor accommodation as defined by the State Government Visitor Accommodation Standards? Click on help information button for definition. If you are not the owner of the property you MUST include signed confirmation from the owner that they are aware of this application. *

☒ Yes

Is the application for SIGNAGE ONLY? If yes, please enter \$0 in the cost of development, and you must enter the number of signs under Other Details below. *

☒ No

If this application is related to an enforcement action please enter Enforcement Number

City of Hobart

Senior Statutory Planning Officer

City Life

Thursday 7th July 2022

Dear Sir/Madam,

RE: 4 Rupara Avenue, West Hobart

Change of use to Visitor Accommodation

Application No. PLN-22-161

Further to your letter dated 25th March 2022, please find following the further information that was requested.

Parking and Access

PA1

We were not planning on offering on site car parking, because the driveway is very narrow, and we didn't want to have guests arrive and be disappointed if they couldn't fit their vehicle in the drive. It is quite difficult to exit a vehicle when parked in the driveway. The owners who are currently living in the property have two vehicles which they park on the road directly in front of the property. They would not be parking there if the property is converted to visitor accommodation, meaning these two spaces would become available. Therefore, if two visitors car were parked there there would be no additional car spaces taken up in the street than there are currently.

Planning

PLN Fi1

The gross floor area of the existing house is 134.5m². We plan on sectioning this off so the main house is 115m² and the studio/bedsit is 19.5m².

Regards,

Emma Lacey

Per Richard Law

**RESULT OF SEARCH**

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

SEARCH OF TORRENS TITLE

VOLUME	FOLIO
198585	1
EDITION	DATE OF ISSUE
5	30-Jan-2020

SEARCH DATE : 23-Mar-2022

SEARCH TIME : 03.27 PM

DESCRIPTION OF LAND

City of HOBART

Lot 1 on Plan 198585

Derivation : Part of 10A-1R-37Ps. & 0A-3R-27.1/2Ps. Gtd. to R.

Officer and H. Cane respectively.

Prior CT 2561/38

SCHEDULE 1E94367 ASSENT to RICHARD LAW Registered 05-Jun-2017 at 12.
01 PMSCHEDULE 2

Reservations and conditions in the Crown Grant if any

E207577 MORTGAGE to AFSH Nominees Pty Ltd Registered
30-Jan-2020 at 12.01 PMUNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

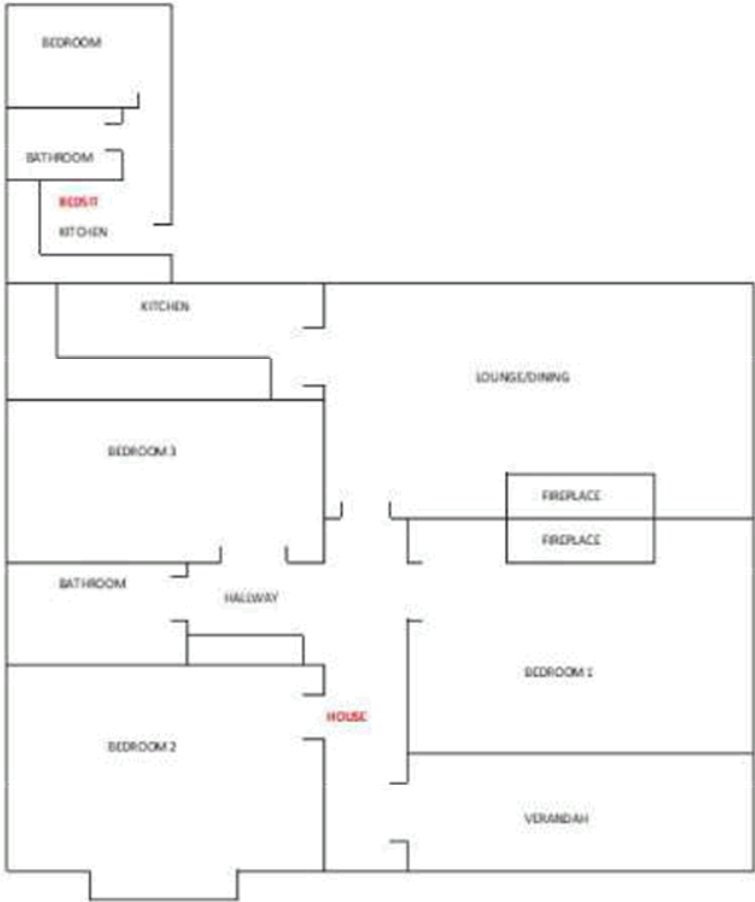
**FOLIO PLAN**

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



OWNER FOLIO REFERENCE C.T. 2561-38 GRANTEE		PLAN OF TITLE LOCATION HOBART FIRST SURVEY PLAN No. _____ COMPILED BY L.T.O. SCALE 1: 500 LENGTHS IN METRES		Registered Number P198585 APPROVED 27 NOV. 1997..... <i>Michael Chin</i> Recorder of Titles
MAPSHEET MUNICIPAL CODE No. 114 (5225-42)	LAST UPI No 2103035	LAST PLAN No.	ALL EXISTING SURVEY NUMBERS TO BE CROSS REFERENCED ON THIS PLAN	



**7.2.7 1 ASCOT AVENUE, SANDY BAY AND ADJACENT ROAD RESERVE
PLN-22-319 - FILE REF: F22/81813**

Address: 1 Ascot Avenue, Sandy Bay and Adjacent Road Reserve

Proposal: Partial Demolition and Alterations to Access, Driveway, and Parking

Expiry Date: 1 September 2022

Extension of Time: Not applicable

Author: Adam Smee

RECOMMENDATION

That pursuant to the *Hobart Interim Planning Scheme 2015*, the City Planning Committee, in accordance with the delegations contained in its terms of reference, approve the application for partial demolition and alterations to access, driveway, and parking at 1 Ascot Avenue, Sandy Bay 7005 and adjacent road reserve for the reasons outlined in the officer's report and a permit containing the following conditions be issued:

GEN

The use and/or development must be substantially in accordance with the documents and drawings that comprise PLN-22-319 - 1 ASCOT AVENUE SANDY BAY TAS 7005 - Final Planning Documents except where modified below.

Reason for condition

To clarify the scope of the permit.

TW

The use and/or development must comply with the requirements of TasWater as detailed in the form Submission to Planning Authority Notice, Reference No. TWDA 2022/00785-HCC dated 30/5/2022 as attached to the permit.

Reason for condition

To clarify the scope of the permit.

ENG sw1

All stormwater from the proposed development (including but not limited to: roofed areas, ag drains, retaining wall ag drains and impervious surfaces such as driveways and paved areas) must be drained to the Council's stormwater infrastructure prior to first occupation or commencement of use (whichever occurs first).

Advice:

Under section 23 of the Urban Drainage Act 2013 it is an offence for a property owner to direct stormwater onto a neighbouring property.

Reason for condition

To ensure that stormwater from the site will be discharged to a suitable Council approved outlet.

ENG 3a

The access driveway and parking area must be constructed in accordance with the following documentation which forms part of this permit: PLN-22-319 -
1 ASCOT AVENUE SANDY BAY TAS 7005 - Driveway Plans submitted to Council on the 22 July 2022.

Any departure from that documentation and any works which are not detailed in the documentation must be either:

- (a) approved by the Director City Life, via a condition endorsement application; or
- (b) designed and constructed in accordance with Australian Standard AS/NZ 2890.1:2004.

The works required by this condition must be completed prior to first occupation.

Reason for condition

To ensure the safety of users of the access and parking module, and compliance with the relevant Australian Standard.

ENG 3c

Prior to the first occupation, a suitably qualified engineer must certify that the access driveway and parking area has been constructed in accordance with design drawings approved by Condition ENG 3a.

Advice:

We strongly encourage you to speak to your engineer before works begin so that you can discuss the number and nature of the inspections they will need to do during the works in order to provide this certification. It may be necessary for a surveyor to also be engaged to ensure that the driveway will be constructed as approved.

The reason this condition has been imposed as part of your planning permit is that the driveway is outside the Australian Standard gradients or design parameters. If the driveway is not constructed as it has been approved then this may mean that the driveway will either be unsafe or will not function properly.

An example certificate is available on our [website](#).

Reason for condition

To ensure the safety of users of the access and parking module, and compliance with the relevant Australian Standard.

ENG 1

Any damage to council infrastructure resulting from the implementation of this permit, must, at the discretion of the Council:

1. Be met by the owner by way of reimbursement (cost of repair and reinstatement to be paid by the owner to the Council); or
2. Be repaired and reinstated by the owner to the satisfaction of the Council.

A photographic record of the Council's infrastructure adjacent to the subject site must be provided to the Council prior to any commencement of works.

A photographic record of the Council's infrastructure (e.g. existing

property service connection points, roads, buildings, stormwater, footpaths, driveway crossovers and nature strips, including if any, pre-existing damage) will be relied upon to establish the extent of damage caused to the Council's infrastructure during construction. In the event that the owner/developer fails to provide to the Council a photographic record of the Council's infrastructure, then any damage to the Council's infrastructure found on completion of works will be deemed to be the responsibility of the owner.

Reason for condition

To ensure that any of the Council's infrastructure and/or site-related service connections affected by the proposal will be altered and/or reinstated at the owner's full cost.

ENG r1

The excavation and earth-retaining structures and removing part of a retaining wall within the highway reservation must not undermine the stability and integrity of the highway reservation and its infrastructure.

Detailed design drawings, structural certificates and associated geotechnical assessments of the items above within the Ascot Avenue highway reservation must be submitted and approved as a Condition Endorsement, prior to the commencement of work and must:

1. Be prepared and certified by a suitable qualified person and experienced engineer;
2. Not undermine the stability of the highway reservation;
3. Be designed in accordance with AS 4678, with a design life in accordance with table 3.1 typical application major public infrastructure works;
4. Take into account any additional surcharge loadings as required by relevant Australian Standards;
5. Take into account and reference accordingly any Geotechnical findings;
6. Detail any mitigation measures required;
7. Detail the design and location of the footing adjacent to the Ascot Avenue highway reservation;

The structural certificate and/or drawings should note the above as required.

All work required by this condition must be undertaken in accordance with the approved select design drawing and structural certificates.

Advice:

This condition requires further information to be submitted as a Condition Endorsement. Refer to the Condition Endorsement advice at the end of this permit.

Reason for condition

To ensure that the stability and integrity of the Council's highway reservation is not compromised by the development.

ENG r3

Prior to the commencement of use, the proposed driveway crossover on the Ascot Avenue highway reservation must be designed and constructed in accordance with:

- Urban - TSD-R09-v3 – Urban Roads Driveways and TSD R14-v3
Type KC vehicular crossing, without the invert lip in the gutter;
- Footpath - Urban Roads Footpaths TSD-R11-v3.

Design drawings must be submitted and approved as a Condition Endorsement prior to any approval under the Building Act 2016. The design drawings must:

1. Show the cross and long section of the driveway crossover within the highway reservation and onto the property;
2. Detail any services or infrastructure (i.e. light poles, pits, awnings) at or near the proposed driveway crossover;
3. Show swept path templates in accordance with AS/NZS 2890.1 2004(B85 or B99 depending on use, design template);
4. If the design deviates from the requirements of the TSD, then demonstrate that a B85 vehicle or a B99 depending on use (AS/NZS 2890.1 2004, section 2.6.2), can access the driveway from the road pavement into the property without scraping the vehicle's underside;
5. Show that vehicular and pedestrian sight lines are met as per AS/NZS 2890.1 2004.

6. Be prepared and certified by a suitable qualified person, to satisfy the above requirements.

All work required by this condition must be undertaken in accordance with the approved drawings.

Advice:

This condition requires further information to be submitted as a Condition Endorsement. Refer to the Condition Endorsement advice at the end of this permit.

Please note that the proposal does not include adjustment of footpath levels. Any adjustment to footpath levels necessary to suit the design of proposed floor, parking module, or driveway levels will require separate agreement from Council's Program Leader Road Services and may require further planning approval. It is advised to place a note to this effect on construction drawings for the site and/or other relevant engineering drawings to ensure that contractors are made aware of this requirement.

Reason for condition

To ensure that works will comply with the Council's standard requirements.

ADVICE

The following advice is provided to you to assist in the implementation of the planning permit that has been issued subject to the conditions above. The advice is not exhaustive and you must inform yourself of any other legislation, by-laws, regulations, codes or standards that will apply to your development under which you may need to obtain an approval. Visit the Council's [website](#) for further information.

Prior to any commencement of work on the site or commencement of use the following additional permits/approval may be required from the Hobart City Council.

BUILDING PERMIT

You may need building approval in accordance with the *Building Act 2016*. Click [here](#) for more information.

This is a Discretionary Planning Permit issued in accordance with section 57 of the *Land Use Planning and Approvals Act 1993*.

PLUMBING PERMIT

You may need plumbing approval in accordance with the *Building Act 2016*, *Building Regulations 2016* and the National Construction Code. Click [here](#) for more information.

OCCUPATION OF THE PUBLIC HIGHWAY

You may require an occupational license for structures in the Hobart City Council highway reservation, in accordance with conditions to be established by the Council. Click [here](#) for more information.

You may require a Permit to Open Up and Temporarily Occupy a Highway (for work in the road reserve). Click [here](#) for more information.

STORMWATER

Please note that in addition to a building and/or plumbing permit, development must be in accordance with the Hobart City Council's Infrastructure By law. Click [here](#) for more information.

WORK WITHIN THE HIGHWAY RESERVATION

Please note development must be in accordance with the Hobart City Council's Infrastructure by law. Click [here](#) for more information.

DRIVEWAY SURFACING OVER HIGHWAY RESERVATION



If a coloured or textured surface is used for the driveway access within the Highway Reservation, the Council or other service provider will not match this on any reinstatement of the driveway access within the Highway Reservation required in the future.

FEES AND CHARGES

Click [here](#) for information on the Council's fees and charges.

DIAL BEFORE YOU DIG

Click [here](#) for dial before you dig information.

- Attachment A: PLN-22-319 - 1 ASCOT AVENUE SANDY BAY
TAS 7005 - Planning Committee or Delegated
Report ↓ 
- Attachment B: PLN-22-319 - 1 ASCOT AVENUE SANDY BAY
TAS 7005 - CPC Agenda Documents ↓ 

**APPLICATION UNDER HOBART INTERIM PLANNING SCHEME 2015**

Type of Report: Committee
Committee: 22 August 2022
Expiry Date: 1 September 2022
Application No: PLN-22-319
Address: 1 ASCOT AVENUE , SANDY BAY
ADJACENT ROAD RESERVE
Applicant: JOANNE ELIZABETH CRAWLEY
1 ASCOT AVENUE
Proposal: Partial Demolition and Alterations to Access, Driveway, and Parking
Representations: No representations.
Performance criteria: Parking and Access Code:

Design of Vehicular Accesses and Layout of Parking Areas.

1. Executive Summary

- 1.1 Planning approval is sought for partial demolition and alterations to access, driveway, and parking at 1 Ascot Avenue, Sandy Bay and adjacent road reserve.
- 1.2 More specifically the proposal includes:
- widening the existing crossover to the subject property to be 4.6m wide. This widening would be achieved by extending the crossover at its southern end. A section of the crossover at its northern end would revert to kerb and gutter. A rock retaining wall would be altered to allow for the crossover widening.
 - widening the driveway on the subject property to allow for access to two new on-site car parking spaces.
 - construction of the on-site car parking spaces at the end of the new driveway.
- 1.3 The proposal relies on performance criteria to satisfy the following standards and codes:
- 1.3.1 E6.0 Parking and Access Code - E6.7 Development Standards
- 1.4 No representations were received during the statutory advertising period between 28 July and 11 August 2022.

- 1.5 The proposal is recommended for approval subject to conditions.
- 1.6 The final decision is delegated to the City Planning Committee, because the proposal includes work within a road reservation.

2. Site Detail

- 2.1 The proposed development site is a residential lot within the Sandy Bay area and the adjacent road reserve. The lot is roughly wedge shape and has an area of 675m². The lot has frontage to Ascot Avenue on its north-eastern boundary. The land rises fairly steeply from the frontage toward the rear of the property. The dwelling on the site occupies a central position on the property. The site is close to the intersection of Ascot Avenue and Churchill Avenue to the north-east. The site is surrounded by established residential use and development.



Figure 1: aerial view of site (outlined in blue) and surrounding area.

3. Proposal

- 3.1 Planning approval is sought for partial demolition and alterations to access, driveway, and parking at 1 Ascot Avenue, Sandy Bay and adjacent road reserve.

3.2 More specifically the proposal includes:

- widening the existing crossover to the subject property to be 4.6m wide. This widening would be achieved by extending the crossover at its southern end. A section of the crossover at its northern end would revert to kerb and gutter. A rock retaining wall would be altered to allow for the crossover widening.
- widening the driveway on the subject property to allow for access to two new on-site car parking spaces.
- construction of the on-site car parking spaces at the end of the new driveway.

4. Background

4.1 Council issued a Planning Permit for partial demolition, alterations, and alterations to car parking, driveway, and landscaping on the site in March 2020 (see PLN-20-103).

5. Concerns raised by representors

5.1 No representations were received during the statutory advertising period.

6. Assessment

6.1 The *Hobart Interim Planning Scheme 2015* is a performance based planning scheme. To meet an applicable standard, a proposal must demonstrate compliance with either an acceptable solution or a performance criterion. Where a proposal complies with a standard by relying on one or more performance criteria, the Council may approve or refuse the proposal on that basis. The ability to approve or refuse the proposal relates only to the performance criteria relied on.

6.2 The site is located within the General Residential Zone of the *Hobart Interim Planning Scheme 2015*.

6.3 The existing use is a single dwelling within the planning scheme's residential use class. The existing use is a permitted use in the above zone. The proposed development would be associated with the existing use.

6.4 The proposal has been assessed against:

6.4.1 10.0 General Residential Zone

- 6.4.2 E6.0 Parking and Access Code
- 6.4.3 E7.0 Stormwater Management Code
- 6.5 The proposal relies on the following performance criteria to comply with the applicable standards:
 - 6.5.1 E6.0 Parking and Access Code:
 - E6.7.2 Design of Vehicular Accesses, and,*
 - E6.7.5 Layout of Parking Areas.*
- 6.6 Each relevant performance criterion is assessed below.
- 6.7 *E6.7.2 Design of Vehicular Accesses*
 - 6.7.1 The acceptable solution at clause *E6.7.2* requires an access to comply with section 3 – “Access Facilities to Off-street Parking Areas and Queuing Areas” of *AS/NZS 2890.1:2004 Parking Facilities Part 1: Off-street car parking*.
 - 6.7.2 The proposal includes an access that would not comply with the above section of the Australian Standard.
 - 6.7.3 The proposal does not comply with the above acceptable solution and therefore relies upon assessment against the below performance criterion.
 - 6.7.4 The performance criterion at clause *E6.7.2* provides as follows:
 - Design of vehicle access points must be safe, efficient and convenient, having regard to all of the following:*
 - (a) avoidance of conflicts between users including vehicles, cyclists and pedestrians;*
 - (b) avoidance of unreasonable interference with the flow of traffic on adjoining roads;*
 - (c) suitability for the type and volume of traffic likely to be generated by the use or development;*
 - (d) ease of accessibility and recognition for users.*
 - 6.7.5 Council's Development Engineer has assessed the proposed alterations to the access to the site and provided the following comments:

The application aims to improve the access gradients, and hence improves pedestrian sight lines. Based on the above assessment and given the submitted documentation, sight lines that may be accepted under Performance Criteria P1:E6.7.2 of the Planning Scheme. Given the location of the access and driveway, and the low volume of traffic on the road from which the property gains access.

Surrounding properties exhibit similar access provisions.

6.7.6 The proposal complies with the above performance criterion.

6.8 *E6.7.5 Layout of Parking Areas*

6.8.1 The acceptable solution at clause *E6.7.5* requires the layout of car parking spaces to comply with section 2 "Design of Parking Modules, Circulation Roadways and Ramps" of *AS/NZS 2890.1:2004 Parking Facilities Part 1: Off-street car parking*.

6.8.2 The proposal includes a layout of car parking spaces that would not comply with the above section of the Australian Standard.

6.8.3 The proposal does not comply with the above acceptable solution and therefore relies upon assessment against the below performance criterion.

6.8.4 The performance criterion at clause *E6.7.5* provides as follows:

The layout of car parking spaces, access aisles, circulation roadways and ramps must be safe and must ensure ease of access, egress and manoeuvring on-site.

6.8.5 Council's Development Engineer has assessed the proposed layout of car parking spaces and provided the following comments:

Submitted documentation does not satisfy the transition requirement with transitions over 15% sag on entry. Engineer Peter Holmes and owner Joanne Crawley have agreed that this outcome is acceptable with the scope of the project to improve the current access conditions that do not allow a vehicle to access the driveway without scraping. Driveway gradient over 25% in straight section, accepted under performance. Submitted documentation appears to meet these parameters and therefore may be accepted under Performance Criteria P1:E6.7.5 given the driveway configuration.

6.8.6 The proposal complies with the above performance criterion.

7. Discussion

- 7.1 Planning approval is sought for partial demolition and alterations to access, driveway, and parking at 1 Ascot Avenue, Sandy Bay and adjacent road reserve.
- 7.2 The application was advertised and no representations were received.
- 7.3 The proposal has been assessed against the relevant provisions of the planning scheme and is considered to comply.
- 7.4 The proposal has been assessed by other Council officers, including the Council's Development Engineer. The officers have raised no objection to the proposal, subject to conditions.
- 7.5 The proposal is recommended for approval.

8. Conclusion

- 8.1 The proposed partial demolition and alterations to access, driveway, and parking at 1 Ascot Avenue, Sandy Bay and adjacent road reserve, satisfies the relevant provisions of the *Hobart Interim Planning Scheme 2015* and is recommended for approval.

9. Recommendations

That: Pursuant to the *Hobart Interim Planning Scheme 2015*, the City Planning Committee, in accordance with the delegations contained in its terms of reference, approve the application for partial demolition and alterations to access, driveway, and parking at 1 Ascot Avenue, Sandy Bay and adjacent road reserve for the reasons outlined in the officer's report and a permit containing the following conditions be issued:

GEN

The use and/or development must be substantially in accordance with the documents and drawings that comprise PLN-22-319 - 1 ASCOT AVENUE SANDY BAY TAS 7005 - Final Planning Documents except where modified below.

Reason for condition

To clarify the scope of the permit.

TW

The use and/or development must comply with the requirements of TasWater as detailed in the form Submission to Planning Authority Notice, Reference No. TWDA 2022/00785-HCC dated 30/5/2022 as attached to the permit.

Reason for condition

To clarify the scope of the permit.

ENG sw1

All stormwater from the proposed development (including but not limited to: roofed areas, ag drains, retaining wall ag drains and impervious surfaces such as driveways and paved areas) must be drained to the Council's stormwater infrastructure prior to first occupation or commencement of use (whichever occurs first).

Advice:

Under section 23 of the Urban Drainage Act 2013 it is an offence for a property owner to direct stormwater onto a neighbouring property.

Reason for condition

To ensure that stormwater from the site will be discharged to a suitable Council approved outlet.

ENG 3a

The access driveway and parking area must be constructed in accordance with the following documentation which forms part of this permit: PLN-22-319 - 1 ASCOT AVENUE SANDY BAY TAS 7005 - Driveway Plans submitted to Council on the 22 July 2022.

Any departure from that documentation and any works which are not detailed in the documentation must be either:

- (a) approved by the Director City Life, via a condition endorsement application; or
- (b) designed and constructed in accordance with Australian Standard AS/NZ 2890.1:2004.

The works required by this condition must be completed prior to first occupation.

Reason for condition

To ensure the safety of users of the access and parking module, and compliance with the relevant Australian Standard.

ENG 3c

Prior to the first occupation, a suitably qualified engineer must certify that the access driveway and parking area has been constructed in accordance with design drawings approved by Condition ENG 3a.

Advice:

We strongly encourage you to speak to your engineer before works begin so that you can discuss the number and nature of the inspections they will need to do during the works in order to provide this certification. It may be necessary for a surveyor to also be engaged to ensure that the driveway will be constructed as approved.

The reason this condition has been imposed as part of your planning permit is that the driveway is outside the Australian Standard gradients or design parameters. If

the driveway is not constructed as it has been approved then this may mean that the driveway will either be unsafe or will not function properly.

An example certificate is available on our [website](#).

Reason for condition

To ensure the safety of users of the access and parking module, and compliance with the relevant Australian Standard.

ENG 1

Any damage to council infrastructure resulting from the implementation of this permit, must, at the discretion of the Council:

1. **Be met by the owner by way of reimbursement (cost of repair and reinstatement to be paid by the owner to the Council); or**
2. **Be repaired and reinstated by the owner to the satisfaction of the Council.**

A photographic record of the Council's infrastructure adjacent to the subject site must be provided to the Council prior to any commencement of works.

A photographic record of the Council's infrastructure (e.g. existing property service connection points, roads, buildings, stormwater, footpaths, driveway crossovers and nature strips, including if any, pre-existing damage) will be relied upon to establish the extent of damage caused to the Council's infrastructure during construction. In the event that the owner/developer fails to provide to the Council a photographic record of the Council's infrastructure, then any damage to the Council's infrastructure found on completion of works will be deemed to be the responsibility of the owner.

Reason for condition

To ensure that any of the Council's infrastructure and/or site-related service connections affected by the proposal will be altered and/or reinstated at the owner's full cost.

ENG r1

The excavation and earth-retaining structures and removing part of a retaining wall within the highway reservation must not undermine the stability and integrity of the highway reservation and its infrastructure.

Detailed design drawings, structural certificates and associated geotechnical assessments of the items above within the Ascot Avenue highway reservation must be submitted and approved as a Condition Endorsement, prior to the commencement of work and must:

1. Be prepared and certified by a suitable qualified person and experienced engineer;
2. Not undermine the stability of the highway reservation;
3. Be designed in accordance with AS 4678, with a design life in accordance with table 3.1 typical application major public infrastructure works;
4. Take into account any additional surcharge loadings as required by relevant Australian Standards;
5. Take into account and reference accordingly any Geotechnical findings;
6. Detail any mitigation measures required;
7. Detail the design and location of the footing adjacent to the Ascot Avenue highway reservation;

The structural certificate and/or drawings should note the above as required.

All work required by this condition must be undertaken in accordance with the approved select design drawing and structural certificates.

Advice:

This condition requires further information to be submitted as a Condition Endorsement. Refer to the Condition Endorsement advice at the end of this permit.

Reason for condition

To ensure that the stability and integrity of the Council's highway reservation is not compromised by the development.

ENG r3

Prior to the commencement of use, the proposed driveway crossover on the Ascot Avenue highway reservation must be designed and constructed in accordance with:

- Urban - TSD-R09-v3 – Urban Roads Driveways and TSD R14-v3 Type KC vehicular crossing, without the invert lip in the gutter;
- Footpath - Urban Roads Footpaths TSD-R11-v3.

Design drawings must be submitted and approved as a Condition Endorsement prior to any approval under the Building Act 2016. The design drawings must:

1. **Show the cross and long section of the driveway crossover within the highway reservation and onto the property;**
2. **Detail any services or infrastructure (i.e. light poles, pits, awnings) at or near the proposed driveway crossover;**
3. **Show swept path templates in accordance with AS/NZS 2890.1 2004(B85 or B99 depending on use, design template);**
4. **If the design deviates from the requirements of the TSD, then demonstrate that a B85 vehicle or a B99 depending on use (AS/NZS 2890.1 2004, section 2.6.2), can access the driveway from the road pavement into the property without scraping the vehicle's underside;**
5. **Show that vehicular and pedestrian sight lines are met as per AS/NZS 2890.1 2004.**
6. **Be prepared and certified by a suitable qualified person, to satisfy the above requirements.**

All work required by this condition must be undertaken in accordance with the approved drawings.

Advice:

This condition requires further information to be submitted as a Condition Endorsement. Refer to the Condition Endorsement advice at the end of this permit.

Please note that the proposal does not include adjustment of footpath levels. Any adjustment to footpath levels necessary to suit the design of proposed floor, parking module, or driveway levels will require separate agreement from Council's Program Leader Road Services and may require further planning approval. It is advised to place a note to this effect on construction drawings for the site and/or other relevant engineering drawings to ensure that contractors are made aware of this requirement.

Reason for condition

To ensure that works will comply with the Council's standard requirements.

ADVICE

The following advice is provided to you to assist in the implementation of the planning permit that has been issued subject to the conditions above. The advice is not exhaustive and you must inform yourself of any other legislation, by-laws, regulations,

codes or standards that will apply to your development under which you may need to obtain an approval. Visit the Council's [website](#) for further information.

Prior to any commencement of work on the site or commencement of use the following additional permits/approval may be required from the Hobart City Council.

BUILDING PERMIT

You may need building approval in accordance with the *Building Act 2016*. Click [here](#) for more information.

This is a Discretionary Planning Permit issued in accordance with section 57 of the *Land Use Planning and Approvals Act 1993*.

PLUMBING PERMIT

You may need plumbing approval in accordance with the *Building Act 2016*, *Building Regulations 2016* and the National Construction Code. Click [here](#) for more information.

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Reservation, the Council or other service provider will not match this on any reinstatement of the driveway access within the Highway Reservation required in the future.

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(Adam Smee)

Development Appraisal Planner

As signatory to this report, I certify that, pursuant to Section 55(1) of the Local Government Act 1993, I hold no interest, as referred to in Section 49 of the Local Government Act 1993, in matters contained in this report.



(Karen Abey)

Manager Development Appraisal

As signatory to this report, I certify that, pursuant to Section 55(1) of the Local Government Act 1993, I hold no interest, as referred to in Section 49 of the Local Government Act 1993, in matters contained in this report.

Date of Report: 15 August 2022

Attachment(s):

Attachment B - CPC Agenda Documents

PLN-22-319 - 1 ASCOT AVENUE PLN-22-319 - ADJACENT ROAD RESERVE

Application Information

▼ Application Details PLN-22-319 Partial Demolition and Alterations to Access, Driveway, and Parking 
 Submitted on: 22/05/2022
 Accepted as Valid on: 23/05/2022
 Target Time Frame: 42 Days.
 Elapsed Time: 64 Days (*Stopped: 63 Days*) = 1 Days Expiry date: 05/09/2022
 Officer: Adam Smee

Have you obtained pre application advice?

☒ Yes

If YES please provide the pre application advice number eg PAE-17-xx

Are you applying for permitted visitor accommodation as defined by the State Government Visitor Accommodation information button for definition. *

☒ No

Is the application for SIGNAGE ONLY? If yes, please enter \$0 in the cost of development, and you must enter the Other Details below. *

☒ No

If this application is related to an enforcement action please enter Enforcement Number

Details

What is the current approved use of the land / building(s)? *

single dwelling

Please provide a full description of the proposed use or development (i.e. demolition and new dwelling, swimming and garage) *

widening of existing crossover in road reserve/verge

Estimated cost of development *

30000.00

Existing floor area (m2)

Proposed floor area (m2)

Site area (m2)

20

Carparking on Site

Total parking spaces	Existing parking spaces	N/A
<div>2</div>	<div>2</div>	<div><input checked="" type="checkbox"/> Other (no selection chosen)</div>

Other Details

Does the application include signage? *

☒ No

How many signs, please enter 0 if there are none involved in this application? *

0

Tasmania Heritage Register

Is this property on the Tasmanian Heritage Register?

☒ No



Submission to Planning Authority Notice

Council Planning Permit No.	PLN-22-319	Council notice date	25/05/2022
TasWater details			
TasWater Reference No.	TWDA 2022/00785-HCC	Date of response	30/05/2022
TasWater Contact	Timothy Carr	Phone No.	0419 306 130
Response issued to			
Council name	CITY OF HOBART		
Contact details	coh@hobartcity.com.au		
Development details			
Address	1 ASCOT AVE, SANDY BAY	Property ID (PID)	5600734
Description of development	Partial Demolition and Alterations to Driveway		
Schedule of drawings/documents			
Prepared by	Drawing/document No.	Revision No.	Date of Issue
Joanne Crawley Building Design	Proposed Crossover Detail – A 5 of 7	-	22/05/2022
Conditions			
<p>Pursuant to the <i>Water and Sewerage Industry Act</i> 2008 (TAS) Section 56P(1) TasWater imposes the following conditions on the permit for this application:</p> <p>CONNECTIONS, METERING & BACKFLOW</p> <ol style="list-style-type: none"> Any removal/supply and installation of water meters and/or the removal of redundant and/or installation of new and modified property service connections must be carried out by TasWater at the developer's cost. <p>TASWATER ASSETS</p> <ol style="list-style-type: none"> The developer must take all precautions to protect existing TasWater infrastructure. Any damage caused to existing TasWater infrastructure during the construction period must be promptly reported to TasWater and repaired by TasWater at the developer's cost. <p>DEVELOPMENT ASSESSMENT FEES</p> <ol style="list-style-type: none"> The applicant or landowner as the case may be, must pay a development assessment fee of \$219.04 to TasWater, as approved by the Economic Regulator and the fee will be indexed, until the date paid to TasWater. <p>The payment is required within 30 days of the issue of an invoice by TasWater.</p>			
Advice			
<p>General</p> <p>For information on TasWater development standards, please visit https://www.taswater.com.au/building-and-development/technical-standards</p> <p>For application forms please visit https://www.taswater.com.au/building-and-development/development-application-form</p>			
Declaration			
The drawings/documents and conditions stated above constitute TasWater's Submission to Planning			



Authority Notice.			
TasWater Contact Details			
Phone	13 6992	Email	development@taswater.com.au
Mail	GPO Box 1393 Hobart TAS 7001	Web	www.taswater.com.au



Planning application - Cover Letter:

Proposed widening of Crossover & transition, realigning of retaining wall & rock work to road reserve at frontage to:

1 Ascot Avenue, Sandy Bay 7005

Clients: Seekay Family Trust - Brad Klafter and Joanne Crawley

Light - Space - Lifestyle

This document together with the attached drawings and reports by external consultants comprise the application package for Planning approval for development at 1 Ascot Avenue, Sandy Bay.

Joanne Crawley
Building Designer
By Appointment - Suite 5, Level 1, 175 Collins Street, Hobart 7000
0427 990 458
joanne@hivedesignau.com

Proposed New: Improvement to Driveway – 1 Ascot Avenue, Sandy Bay

May 22, 2022

Background:

Internal driveway works have previously been approved under PLN 20 - 103.

This application seeks approval to widen existing crossover and transition, realign retaining wall and improve access to the property at 1 Ascot Avenue, Sandy Bay.

Works require approval to council road reserve only.

Advise and comment has previously been sought from Hobart City representatives -

Liz Wilson, David Morley, Keith Burton.

Proposal

- Refer endorsed design by Hutching Spur Engineers.
- To widen the existing crossover to 4.6m. This includes reinstating 1met of kerb crossover, which is unusable, to allow for the extension to the opposing side.
- To remove a portion of rock face retaining wall to allow for general widening of the transition and to provide new centreline profile for vehicular access.
- To re-locate 1 water meter currently laying above ground into a standard trafficable pit.
- Re-instate rock retaining wall where necessary and blend into existing battered rock bank

Note: no works required within 3 Ascot Avenue title boundary.

Documents provided:

- New Crossover Detail drawing 1:50 A3
- New photographic montage to reflect proposed improvements A3 to replace previous
- New Long section to reflect engineering design - to replace previous
- CEP documentation previously submitted - and partially approved
- PLN 20 - 130 approved permit documentation

Conclusion

This proposal is submitted solely to improve vehicular access to this property. We look forward to councils consent or alternative pathway to achieve this goal.

Please contact me if you have any queries relating to this document.

Sincerely,

Joanne Crawley

Hive Building Design

0427 990 458.

**RESULT OF SEARCH**

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

SEARCH OF TORRENS TITLE

VOLUME 124415	FOLIO 1
EDITION 5	DATE OF ISSUE 15-May-2020

SEARCH DATE : 22-May-2022

SEARCH TIME : 01.04 PM

DESCRIPTION OF LAND

City of HOBART
 Lot 1 on Plan 124415
 Being the land described in Conveyance No. 69/6650
 Derivation : Part of 52A-3R-0Ps Gtd to G Flexmore
 Derived from Y 17647

SCHEDULE 1

M682316 TRANSFER to BRADLEY ROBERT KLAFFER and JOANNE
 ELIZABETH CRAWLEY Registered 23-Apr-2018 at noon

SCHEDULE 2

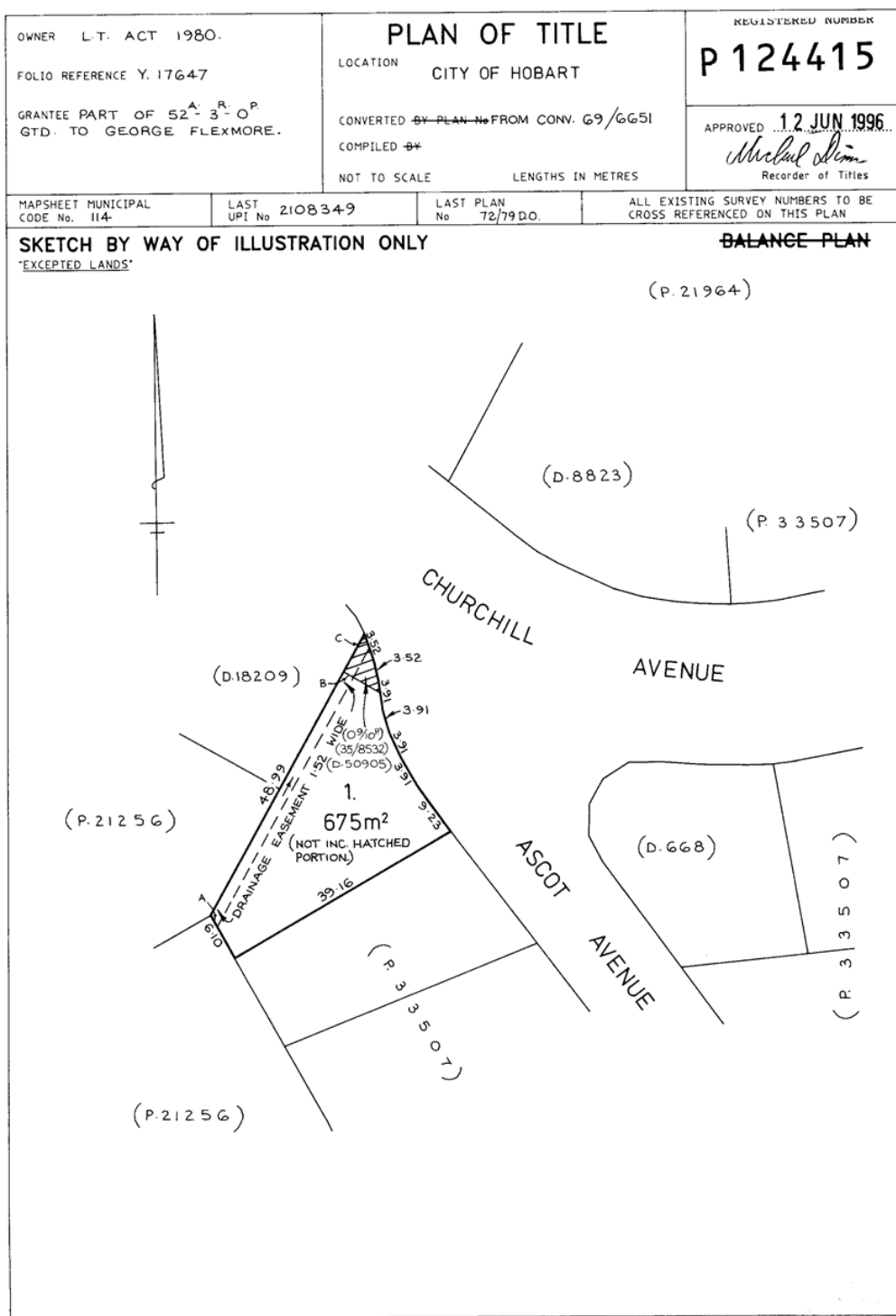
Reservations and conditions in the Crown Grant if any
 69/6650 CONVEYANCE was made subject to Fencing Condition and
 other Conditions
 69/6650 CONVEYANCE: Benefiting Easement: a right of drainage
 over the land marked "Drainage Easement 1.52 wide
 marked B.C." on Plan No. 124415
 69/6650 CONVEYANCE: Burdening Easement: a right of drainage
 (appurtenant to the balance of the land comprised in
 Indenture Number 32/4726) over the land marked
 "Drainage Easement 1.52 wide marked A.B." on Plan No.
 124415
 E215537 MORTGAGE to Athena Mortgage Pty Ltd Registered
 15-May-2020 at 12.01 PM

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations



Tasmanian
Government





Enquiries to: City Life
Phone: (03) 6238 2711
Email: coh@hobartcity.com.au

8 June 2022

JOANNE ELIZABETH CRAWLEY
1 ASCOT AVENUE
SANDY BAY 7005

mailto:joanne@hivedesignau.com

Dear Sir/Madam

**1 ASCOT AVENUE, SANDY BAY & ADJACENT ROAD RESERVE
GMC - IMPROVEMENT TO CROSSOVER AND ACCESS TO RESIDENTIAL PROPERTY
- WORKS WITHIN ROAD RESERVE NOTICE OF LAND OWNER CONSENT TO LODGE
A PLANNING APPLICATION - GMC-22-41**

Site Address:

1 Ascot Avenue and adjacent road reserve

Description of Proposal:

Partial demolition and alterations to access, driveway and parking

Applicant Name:

Joanne Elizabeth Crawley

PLN (if applicable):

PLN-22-319

I write to advise that pursuant to Section 52 of the *Land Use Planning and Approvals Act 1993*, I grant my consent on behalf of the Hobart City Council as the owner/administrator of the above land for you to make application to the City for a planning permit for the development described above and as per the attached documents. I granted consent pursuant to delegation, a copy of which is enclosed.

Please note that the granting of the consent is only for the making of the application and in no way should such consent be seen as prejudicing any decision the Council is required to make

Hobart Town Hall
50 Macquarie Street
Hobart TAS 7000

Hobart Council Centre
16 Elizabeth Street
Hobart TAS 7000

City of Hobart
GPO Box 503
Hobart TAS 7001

T 03 6238 2711
F 03 6234 7109
E coh@hobartcity.com.au
W hobartcity.com.au

CityofHobartOfficial
ABN 39 055 343 428
Hobart City Council

as the statutory planning authority.

This consent does not constitute an approval to undertake any works and does not authorise the owner, developer or their agents any right to enter or conduct works on any Council managed land whether subject to this consent or not.

If planning approval is granted by the planning authority, you will be required to seek approvals and permits from the City as both landlord, land manager, or under other statutory powers (such as other legislation or City By-Laws) that are not granted with the issue of a planning permit under a planning scheme. This includes the requirement for you to reapply for a permit to occupy a public space under the City's Public Spaces By-law if the proposal relates to such an area.

Accordingly, I encourage you to continue to engage with the City about these potential requirements.

Yours faithfully



(Glenn Doyle)

HEAD OF CITY PROJECTS

Relevant documents/plans:

Pages 1 to 7 dated 22/05/2022 from Joanne Crawley

DOCUMENTATION SET

- page 1. Title page
- page 2. Existing Site plan 1:200
- page 3. Proposed Driveway Improvement plan 1:200
- page 4. Proposed Drainage plan 1:200
- page 5. Proposed Crossover Detail 1:50
- page 6. Proposed Driveway Longsection 1:100
- page 7. Photographic Montage - NTS

Lifestyle

Space

Light

General Notes for Residential Works.

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- 240mm external walls - consisting of 110mm brickwork, 40mm cavity, 90mm timber stud wall. - Unless otherwise noted on drawings.
- 90mm internal timber stud walls - Unless otherwise noted on drawings.
- dimensions are to FRAME &/or WALL FACES, tolerances are allowed, plaster / claddings are NOT accounted for.
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- All glazing to comply with AS1288 - Glass in Buildings.
- Glazing, including Safety glazing, shall be installed to a size, type and thickness so as to comply with:
 - BCA Part 3.6 for Class 1 and 10 Buildings within a design wind speed of not more than N3; and
 - BCA Vol 1 Part 91.4 for Class 2 and 9 buildings.
- Grade A safety glazing to be used in the following cases:
 - (i) all rooms - within 500mm vertical from floor level,
 - (ii) bathrooms - within 1500mm vertical from bath base, within 500mm horizontal from bath/shower to shower doors, shower screens & bath enclosures.
 - (iii) laundry - within 1200mm vertical from floor level &/or within 300mm vertical of trough,
 - (iv) doorways - within 300mm horizontal from all doorways
 - (v) all doors - if area of glass greater than 0.5m².
- Waterproofing of all wet areas, being bathrooms, showers, shower rooms, laundries, sanitary compartments and the like shall be provided in accordance with AS3740-2010: Waterproofing of Domestic Wet Areas
- Mechanical ventilation to have minimum exhaust rate of 25l/sec to exhaust directly outside or into a well ventilated roof space.
- Ceiling mounted smoke detectors in accordance with AS 3786 wired to mains power supply with battery backup.
- Stairs/steps to be: tread width (Going) of 240mm min & 355mm max. Riser to be 100mm maximum & 115mm min, with less than 125mm gap between open treads.
- All treads, landings and the like to have slip-resistance classification of P3 or R10 (dry surface) or P4 or R11 (wet surface) OR slip-resistant nosing strip either P3 (dry) or P4 (wet).
- Provide barriers where change in level exceeds 1000mm above the surface beneath landing, ramps and/or treads. Barriers (other than wire tensioned barriers) to comply with the N.C.C. 3.9.2.3.
 - minimum 1000mm min above finished surface level at balconies, landings & the like,
 - 865mm min above finished surface level of stair nosings or ramps,
 - vertical with less than 125mm gap between, and
 - any horizontal element within 150mm to 760mm above surface level must not facilitate climbing where change in level exceeds 4000mm above surface below.
 - wire balustrade construction to comply with the N.C.C. 2019 BCA 3.9.2.3 for Class 1 and 10 buildings and NCC 2019 BCA Vol 1 Part D2.16 for other classes of buildings.
- Top of handrails to be minimum 865mm vertically above stair nosing and floor surface of ramps.
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- A building permit is required prior to the commencement of these works. The release of these documents is conditional to the owner obtaining the required Building Permit.



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 Tasmanian Building
 Services Provider
 596351345
Light Space Lifestyle

Proposed Crossover Improvement
1 Ascot Avenue, Sandy Bay
 Seekay Family Trust

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Title Page

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Date: Reference:

Project Code: 155A

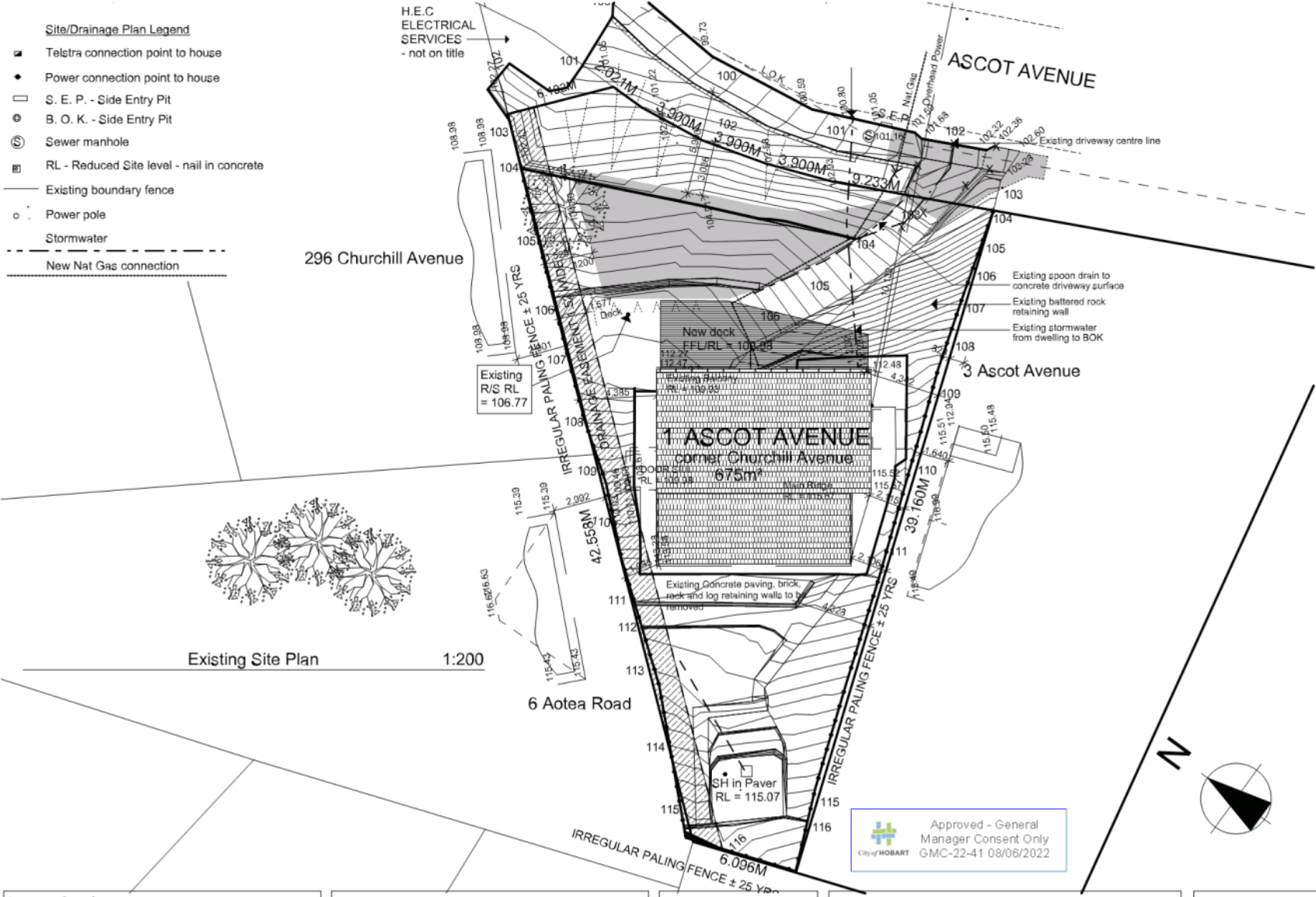
Scale:

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Checked by: Joanne Crawley

Date of Issue 22/05/2022

Sheet: A 1 of 7



Lifestyle
Space
Light

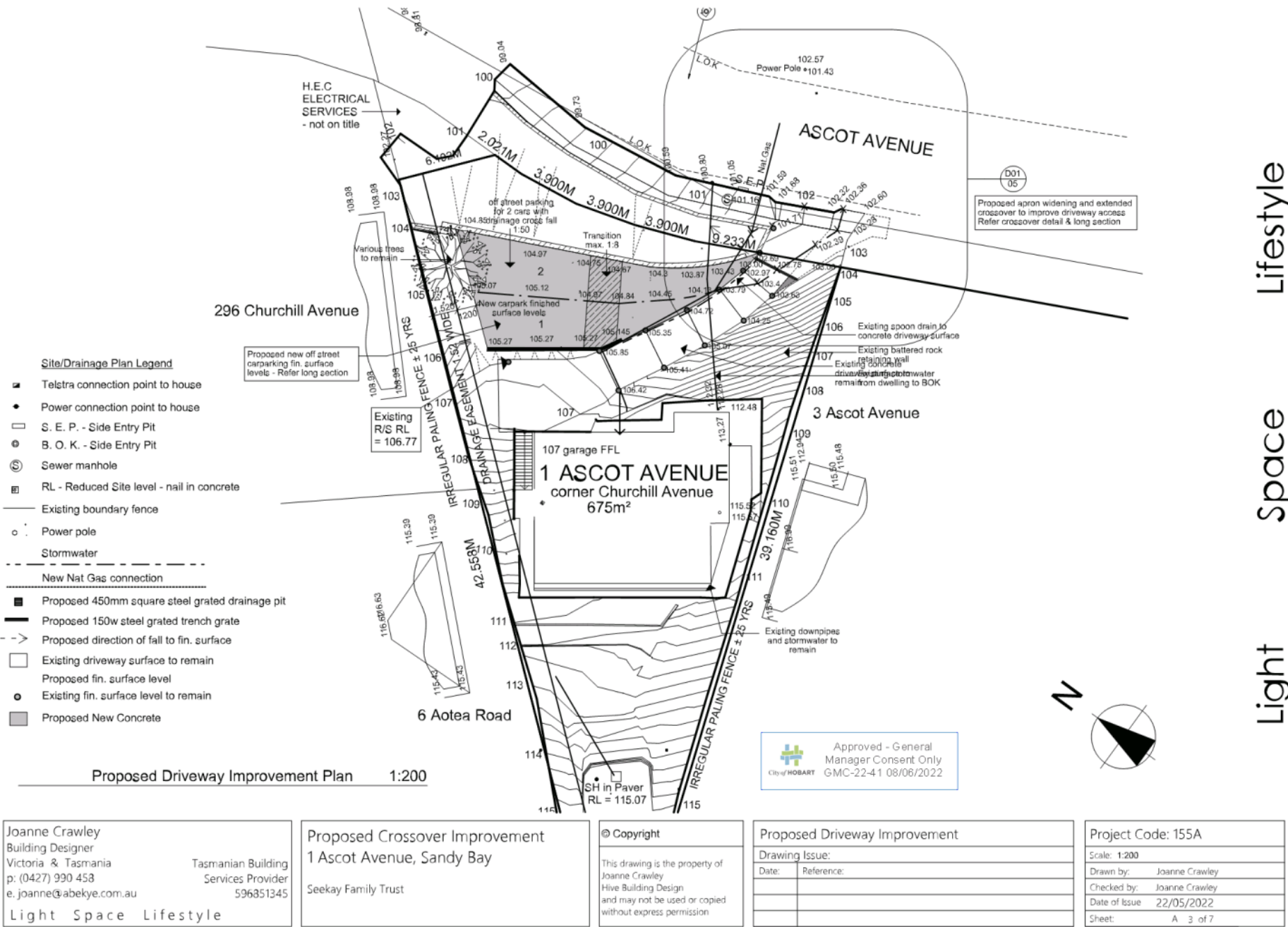
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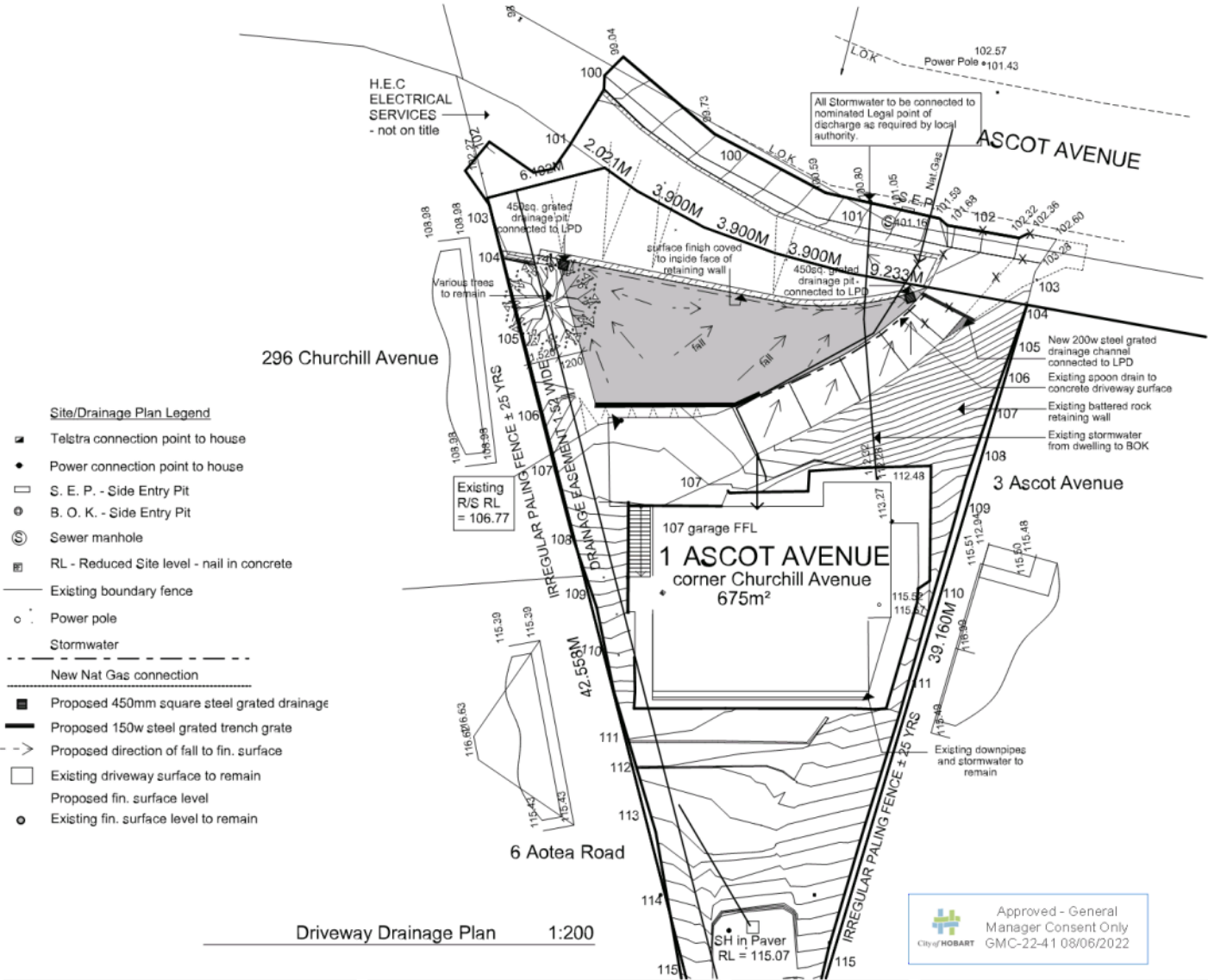
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Existing Site	
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Date:	Reference:

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Lifestyle
Space
Light

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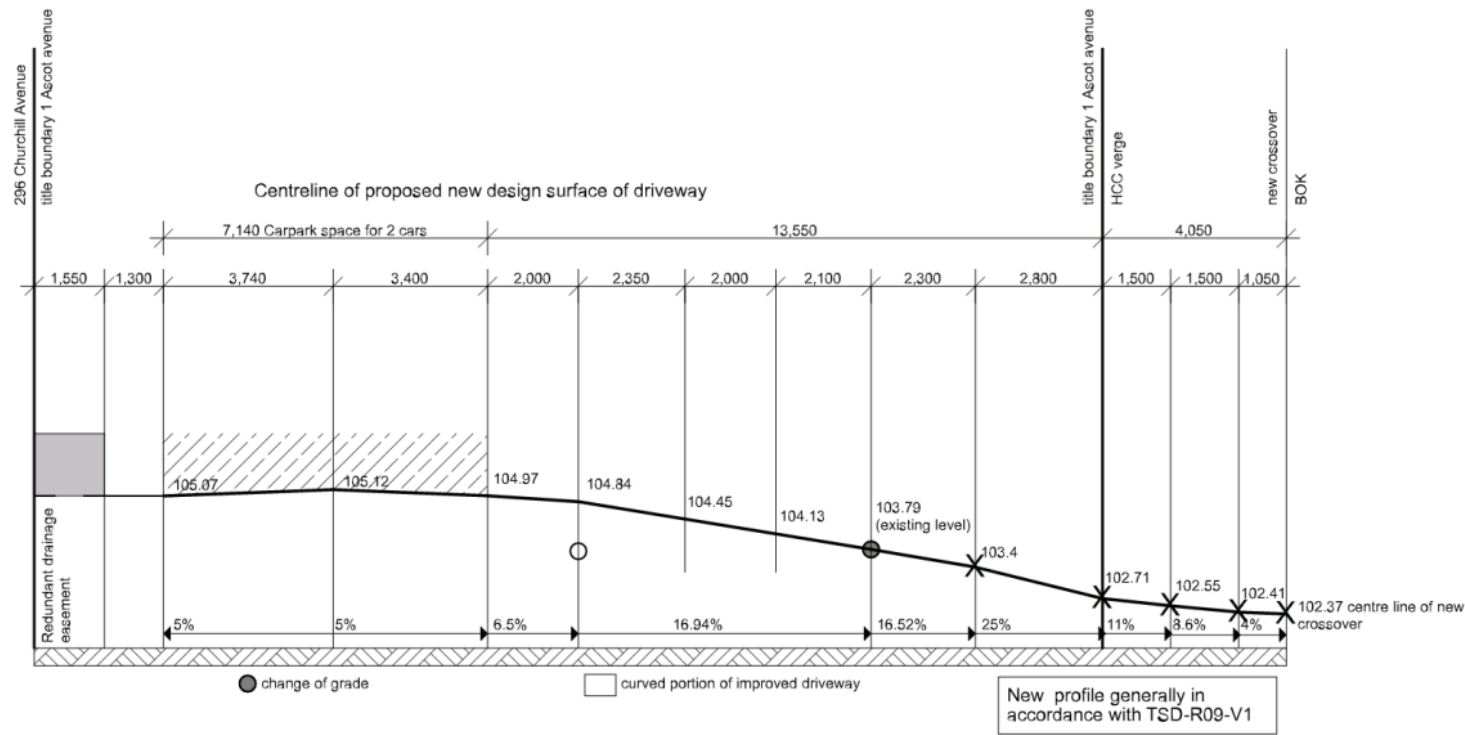
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Proposed Drainage Plan
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Checked by: Joanne Crawley
Date of Issue: 22/05/2022
Sheet: A 4 of 7





Proposed Driveway Long Section 1:100

Approved - General
Manager Consent Only
GMC-22-41 08/06/2022

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Proposed Crossover Improvement
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Driveway Long Section

Drawing Issue:

Date: Reference:

Project Code: 155A

Scale: 1:100

Drawn by: Joanne Crawley

Checked by: Joanne Crawley

Date of Issue: 22/05/2022

Sheet: A 6 of 7

Lifestyle

Space

Light



1 Ascot Avenue, Sandy Bay
Proposed Crossover and Driveway improvement
NOT TO SCALE

Lifestyle
Space
Light

City of HOBART
Approved - General
Manager Consent Only
GMC-22-41 08/06/2022

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Photographic Montage	
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Date:	Reference:

Project Code: 155A	
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Checked by:	Joanne Crawley
Date of Issue	22/05/2022
Sheet:	A 7 of 7

DOCUMENTATION SET

- page 1. Title page
- page 2. Existing Site plan 1:200
- page 3. Proposed Driveway Improvement plan 1:200
- page 4. Proposed Drainage plan 1:200
- page 5. Proposed Crossover Detail 1:50
- page 6. Proposed Driveway Longsection 1:100
- page 7. Photographic Montage - NTS

Lifestyle

Space

Light

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Title Page

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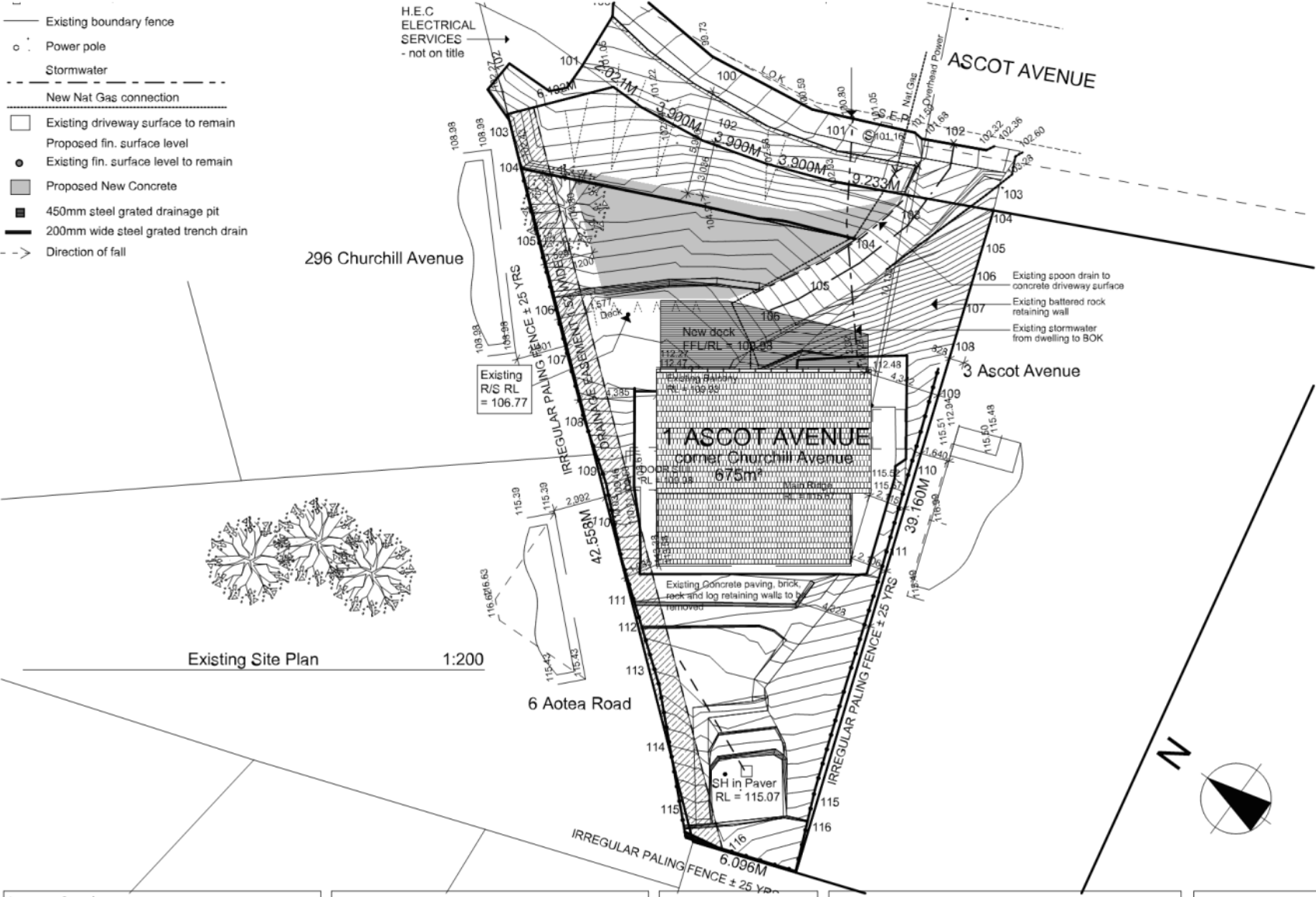
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Checked by: Joanne Crawley

Date of Issue 22/07/2022

Sheet: A 1 of 9



Lifestyle

Space

Light

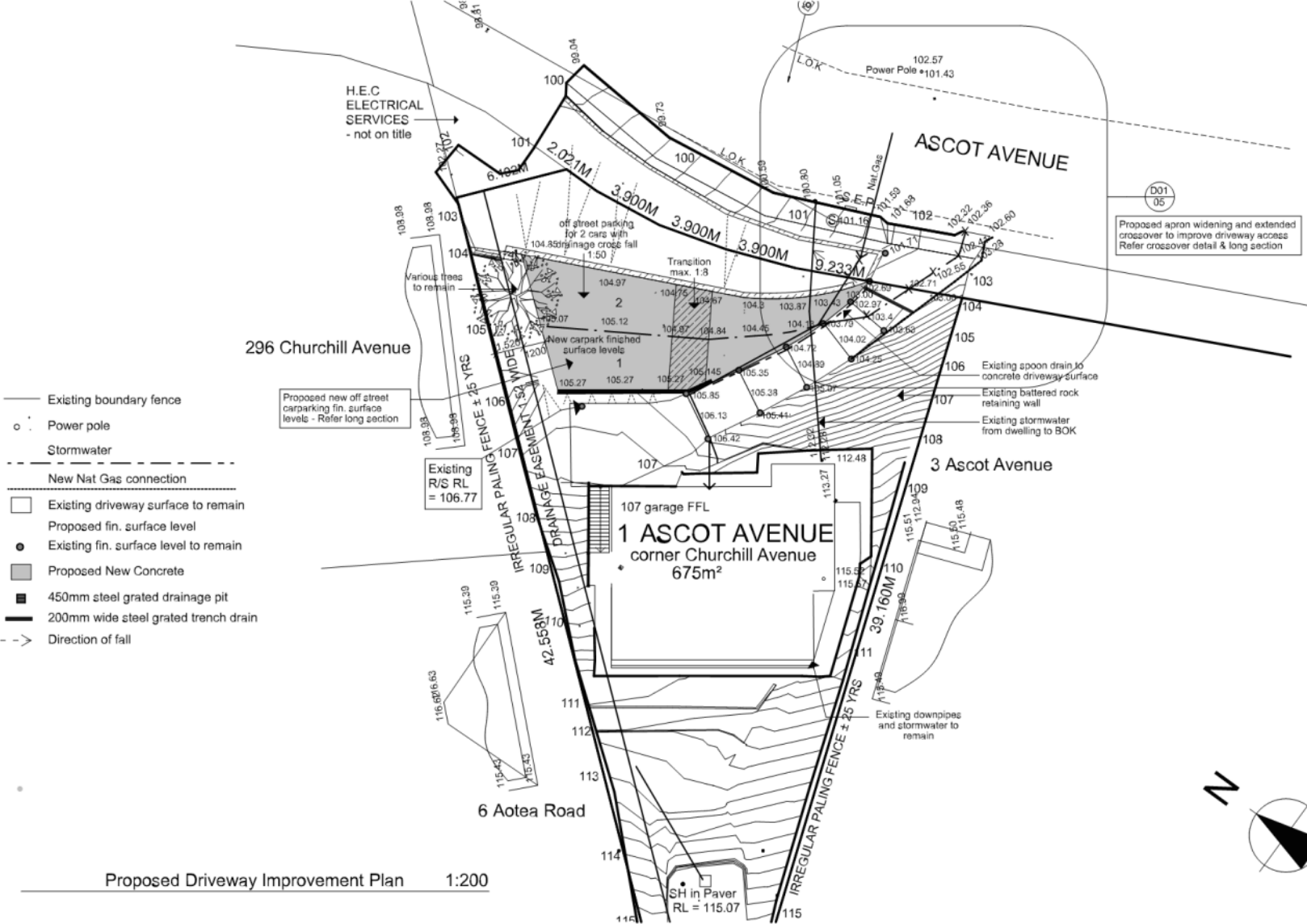
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Existing Site	
Drawing Issue:	
Date:	Reference:

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Drawn by:	Joanne Crawley
Checked by:	Joanne Crawley
Date of Issue	22/07/2022
Sheet:	A 2 of 9



Lifestyle
Space
Light

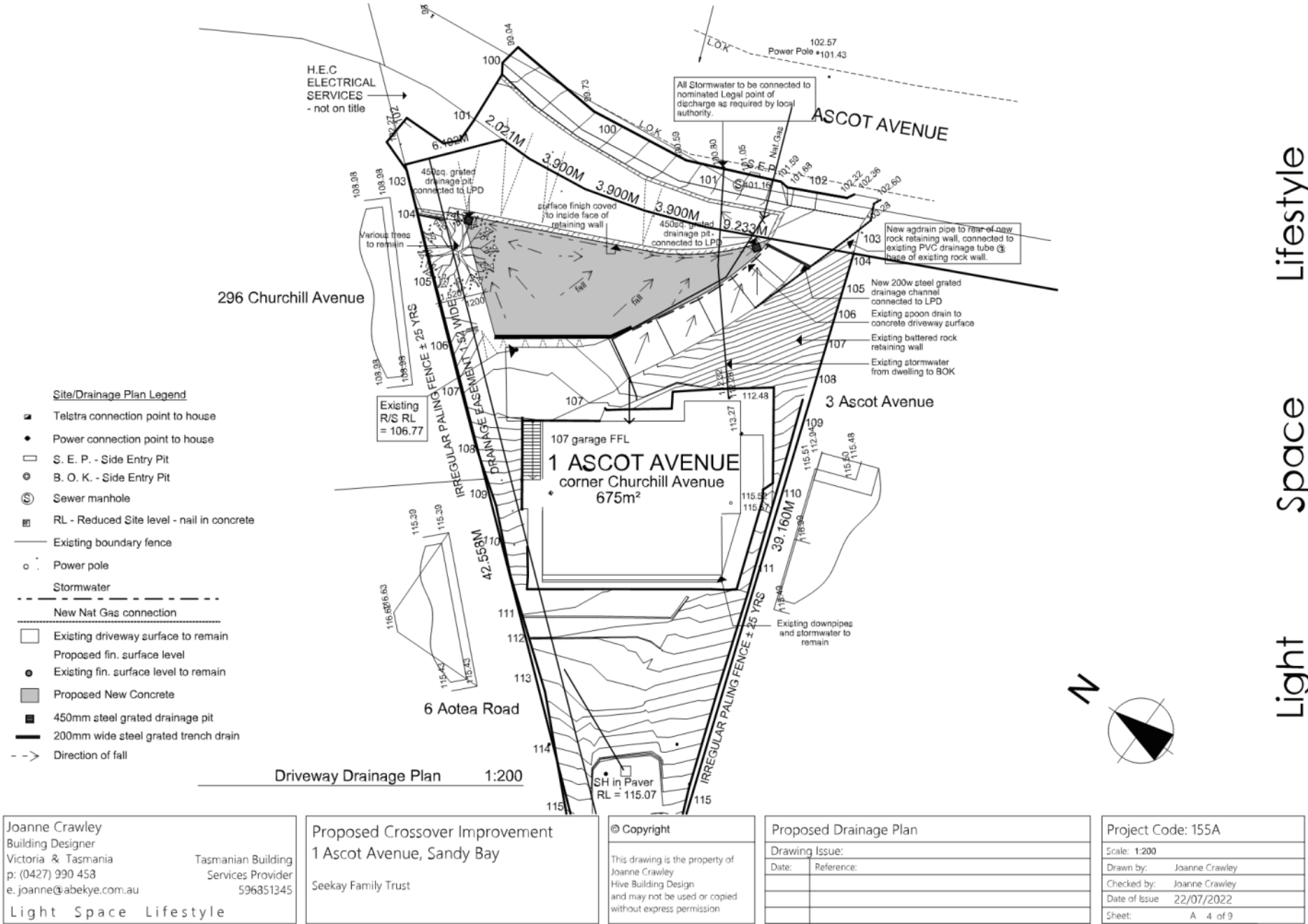
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Proposed Driveway Improvement
Drawing Issue:
Date: Reference:

Project Code: 155A
Scale: 1:200
Drawn by: Joanne Crawley
Checked by: Joanne Crawley
Date of Issue: 22/07/2022
Sheet: A 3 of 9





Scale: 1:50
Drawn by: Joanne Crawley
Checked by: Joanne Crawley
Date of Issue 22/07/2022
Sheet: A 5 of 9



Proposed Driveway Long Section 1:100

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Proposed Crossover Improvement
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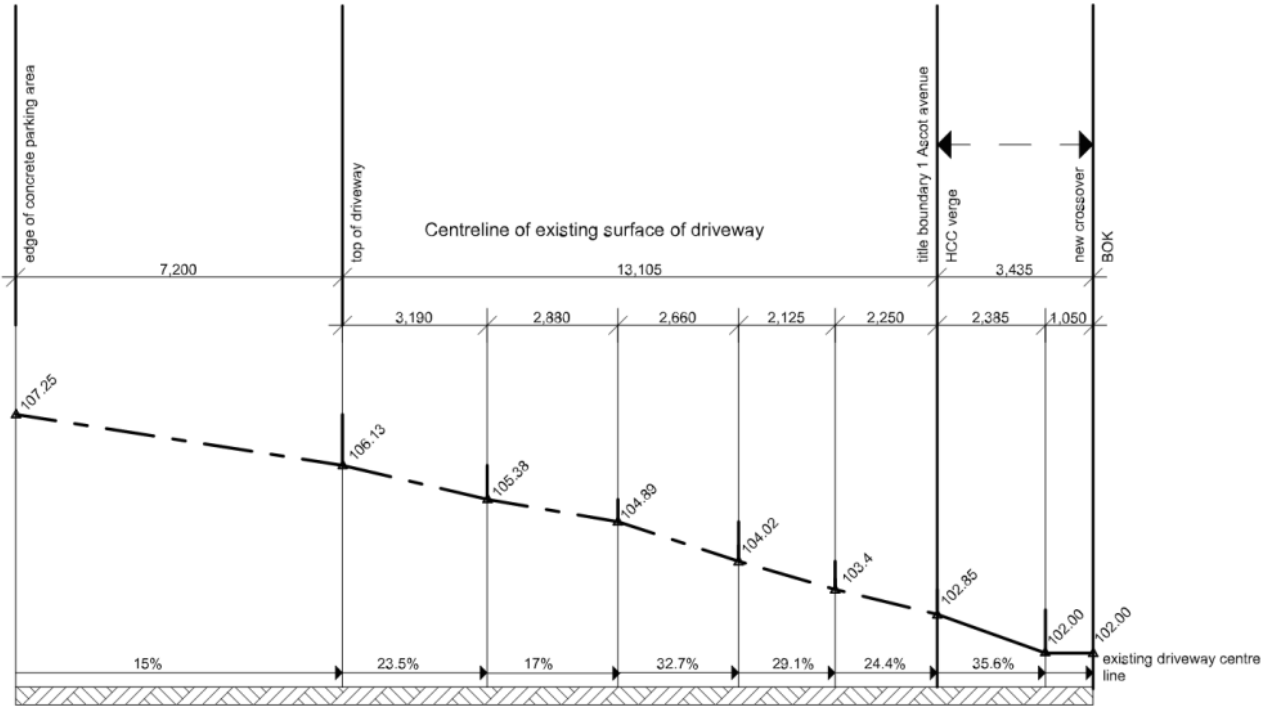
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Proposed Driveway Long Section

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Project Code: 155A

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Date of Issue	22/07/2022
Sheet:	A 6 of 9



Existing Driveway Long Section 1:100

Lifestyle

Space

Light

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Proposed Crossover Improvement
1 Ascot Avenue, Sandy Bay

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Existing driveway long section

Drawing Issue:

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Reference:

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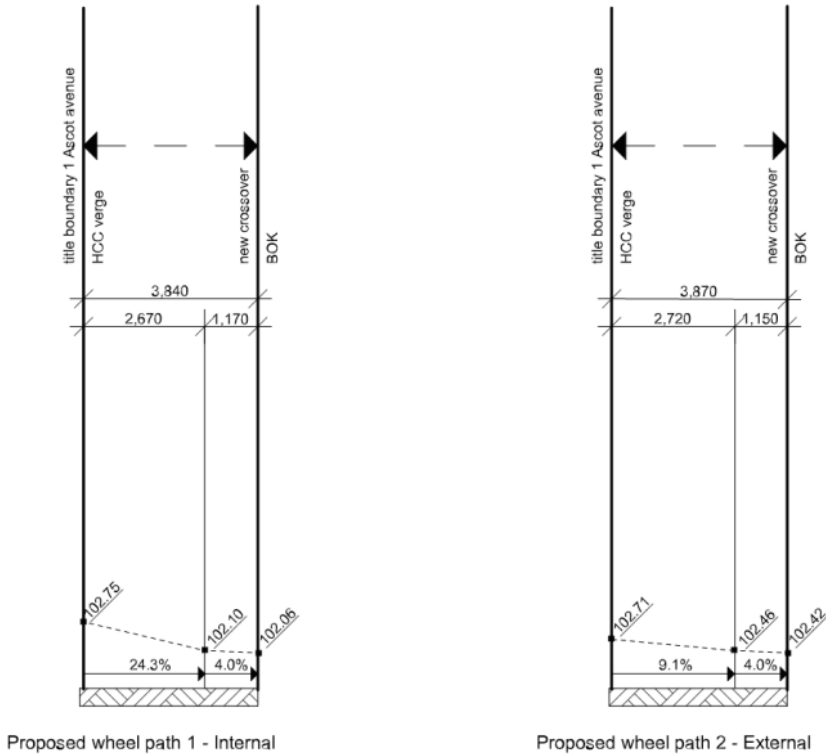
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Sheet: A 7 of 9



Proposed Wheel path sections 1:100

Lifestyle

Space

Light

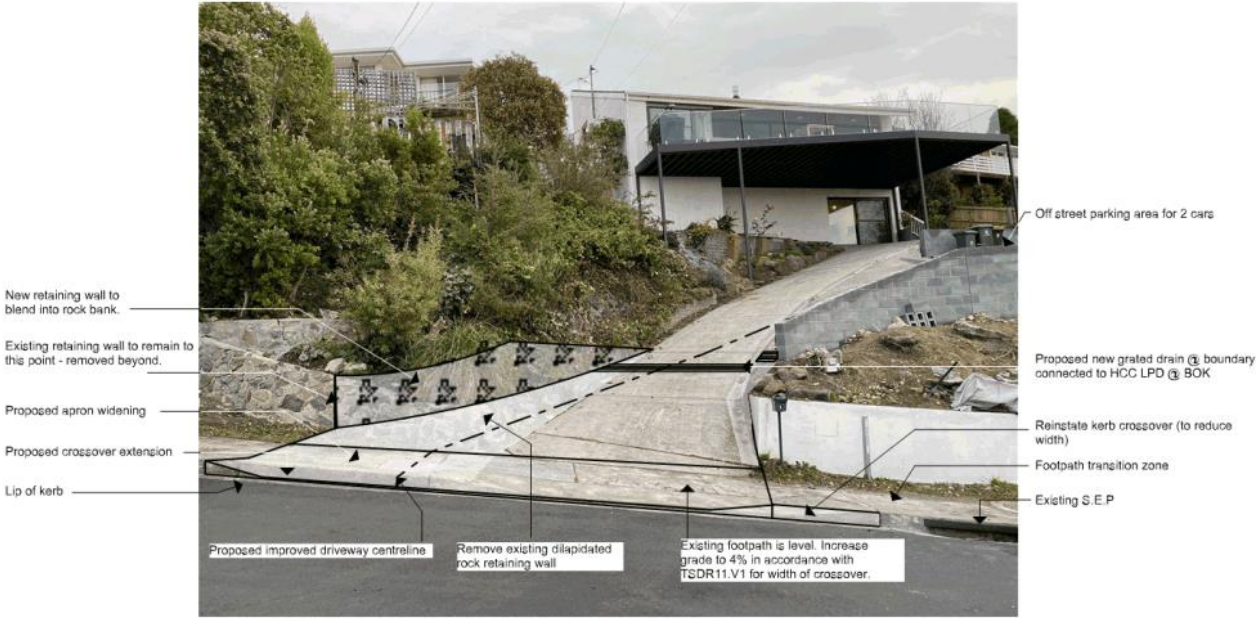
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Wheel path sections	
Drawing Issue:	
Date:	Reference:

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Drawn by:	Joanne Crawley
Checked by:	Joanne Crawley
Date of Issue	22/07/2022
Sheet:	A 3 of 9



1 Ascot Avenue, Sandy Bay
Proposed Crossover and Driveway improvement
NOT TO SCALE

Lifestyle

Space

Light

Joanne Crawley Building Designer Victoria & Tasmania p: (0427) 990 458 e: joanne@abekye.com.au	Tasmanian Building Services Provider 596851345
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Proposed Crossover Improvement 1 Ascot Avenue, Sandy Bay Seekay Family Trust
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Photographic Montage	
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Checked by:	Joanne Crawley
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A.C.N. 009508525

- STRUCTURAL
- CIVIL
- MUNICIPAL
- HYDRAULIC
- MARINE

7th July 2022.

Our Ref.: 18515/2
pavh

Hobart City Council,
GPO Box 503E,
Hobart 7000.

Attention:- Mr. K. Burton

Dear Keith,

re: 1 Ascot Avenue, Sandy Bay PLN-22-319.

At the site meeting this morning, attended by J. Crawley, K. Burton and the writer, proposed alterations to the existing driveway to the above residence, were discussed. The existing driveway is very steep and has a harsh crossover and transition at the entry. It was constructed and approved at a time when driveway standards, were quite different to today's requirements, and whilst it has provided access to the residence, since construction, the driveway is not considered to be user friendly. The application seeks to improve the utility of the existing driveway, by improving the crossover and transition, whilst accepting that full compliance, with current standards, is not achievable without total demolition and reconstruction.

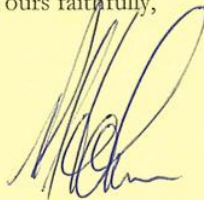
The aim of the driveway upgrade, is to extend the crossover up Ascot Avenue, to enable vehicles to turn further up the hill, from a higher starting level. The footpath, which currently has no crossfall, will be inclined to 4%, to improve the transition, with an infill wedge between the new, raised back edge of the footpath, and the existing driveway concrete. To take full advantage of the lengthened crossover, the driveway apron will be widened on the left hand side, with a new stone retaining wall constructed, to improve the vehicle swing path. The new concrete pavement, will be dowelled into the edge of the existing driveway slab, with existing crossfalls maintained. A section of existing crossover, on the lower side of the driveway, will be removed and replaced with standard kerb and channel, to minimise the total length of the final crossover, and force cars to manoeuvre away from the steepest section of the existing transition. To blend the new footpath crossfalls with the existing, warped transitions will occur, at both ends of the new section of footpath. A marked up plan, attached, seeks to clarify the extent of the proposed works, and the relevant LGAT standard drawing to which it will be constructed.

It is considered that the proposed works are a performance solution, to improve a driveway, that currently is very restrictive in its use. It will not be a driveway that is accessible to all cars, but will provide a much higher level of amenity and safety, than that which the current driveway provides.

Please find attached a form 55 to cover the proposed works.

Trusting the above is sufficient for your purposes at this time.

Yours faithfully,

A handwritten signature in blue ink, appearing to read 'P.A.V. Holmes', with a large, stylized flourish above the name.

P.A.V. Holmes

**CERTIFICATE OF QUALIFIED PERSON – ASSESSABLE
ITEM**

Section 321

To: Owner /Agent
 Address
 Suburb/postcode

Form **55****Qualified person details:**

Qualified person:
 Address: Phone No:

 Licence No: Email address:

Qualifications and Insurance details: (Description from Column 3 of the Director's Determination - Certificates by Qualified Persons for Assessable Items)

Speciality area of expertise: (Description from Column 4 of the Director's Determination - Certificates by Qualified Persons for Assessable Items)

Details of work:

Address: Lot No:
 Certificate of title No:
 The assessable item related to this certificate: (Description of the assessable item being certified)
 Assessable item includes –
 - a material;
 - a design
 - a form of construction
 - a document
 - testing of a component, building system or plumbing system
 - an inspection, or assessment, performed

Certificate details:

Certificate type: (Description from Column 1 of Schedule 1 of the Director's Determination - Certificates by Qualified Persons for Assessable Items n)

This certificate is in relation to the above assessable item, at any stage, as part of - (tick one)

building work, plumbing work or plumbing installation or demolition work: ☐

or

a building, temporary structure or plumbing installation: ☐

In issuing this certificate the following matters are relevant –

Documents:

CERTIFIED DRAWINGS

Relevant
calculations:

References:

LGAT STANDARD DRAWINGS

Substance of Certificate: (what it is that is being certified)

AMENDED DRIVEWAY ENTRY

Scope and/or Limitations

EXCLUSIONS – ALL WORKS OTHER THAN THE ABOVE

I certify the matters described in this certificate. The driveway profile improvements, as detailed on the Light Space Lifestyle drawings 1 to 7, are considered to provide an improved level of amenity, on a performance basis, with general compliance with the standard TSD-R09v3 centreline profile, being achieved. It is acknowledged that some vehicle may continue to have some bottoming out issues.

Qualified person:



Signed:

Job No:

1851

Certificate No:

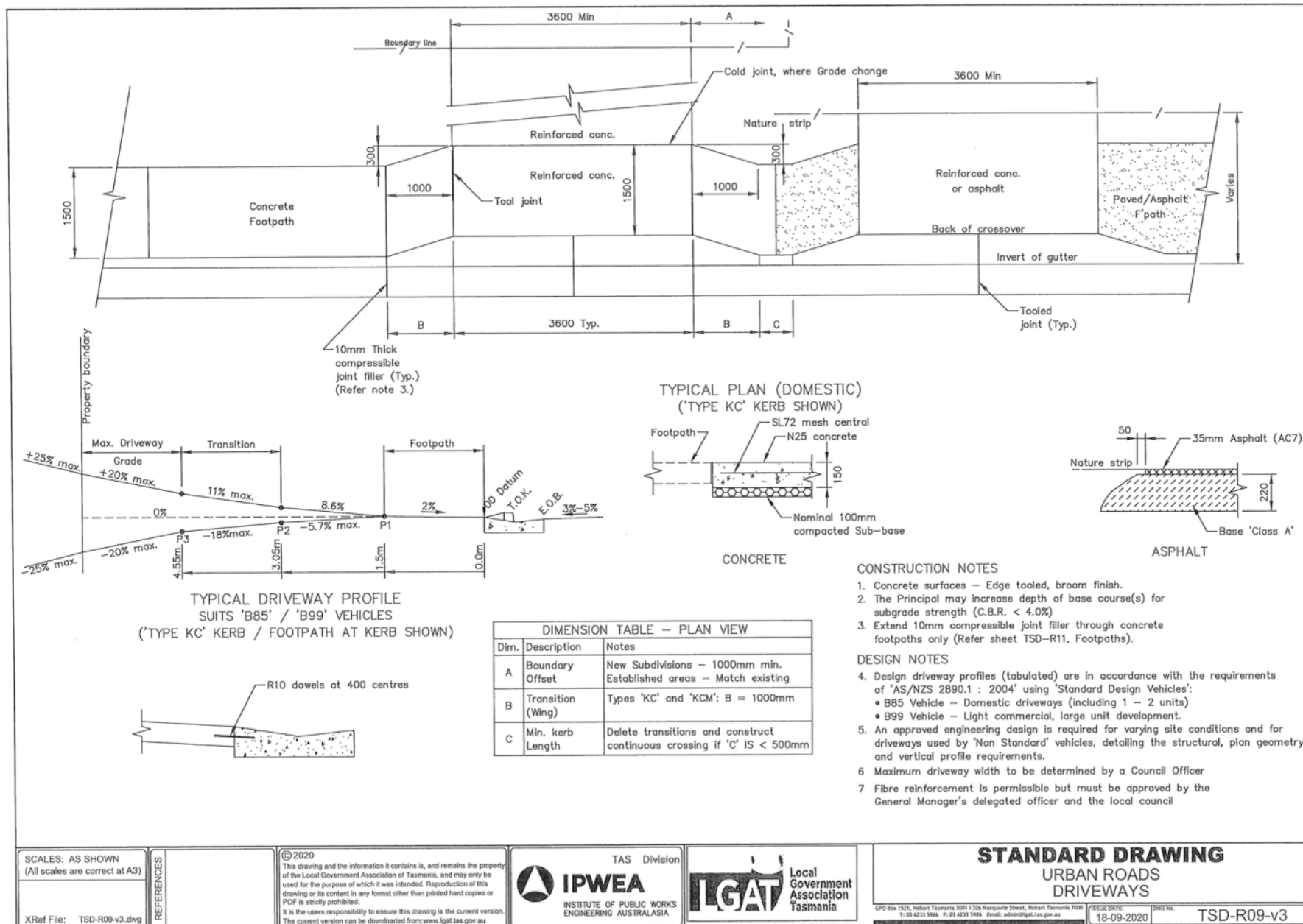
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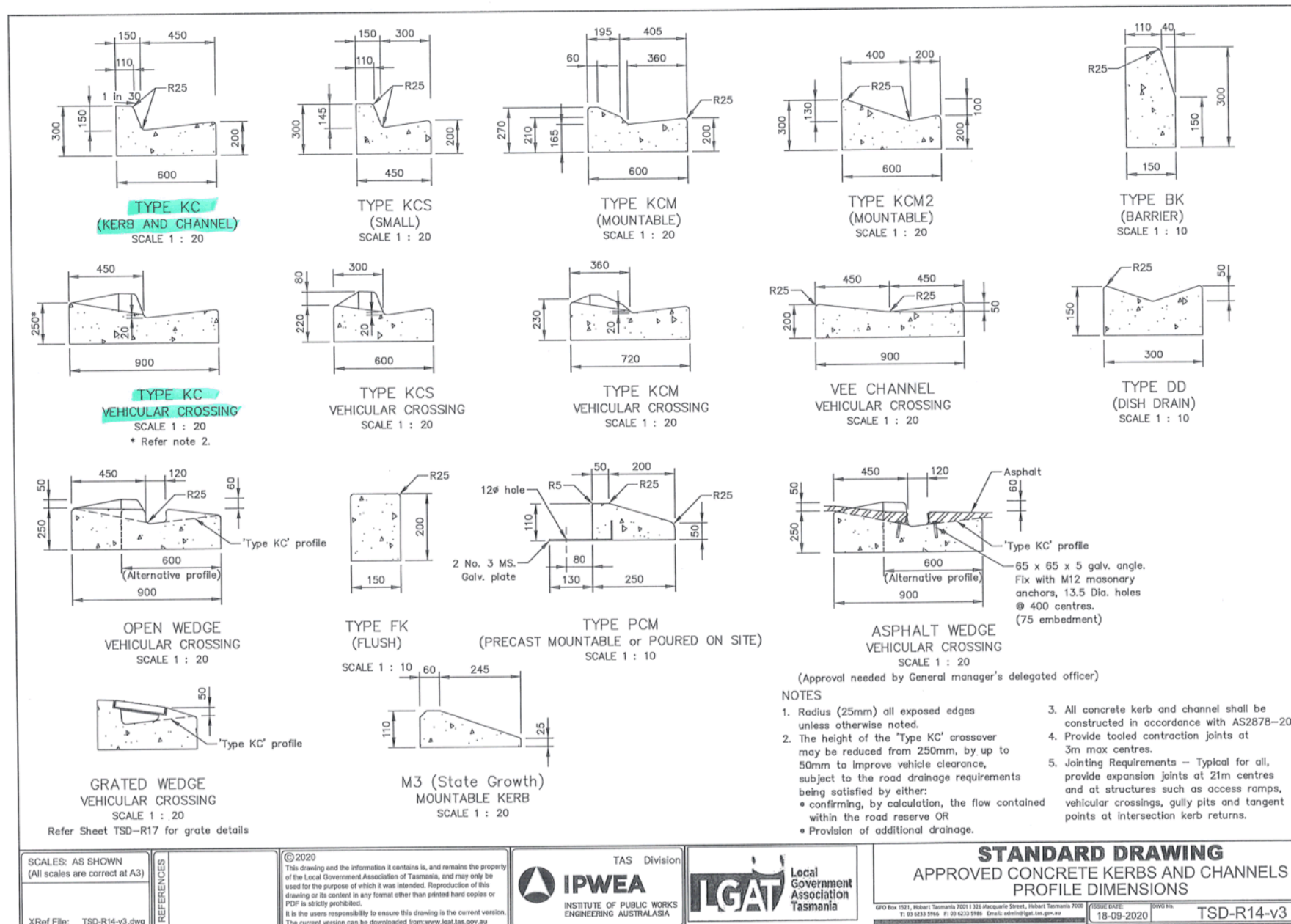
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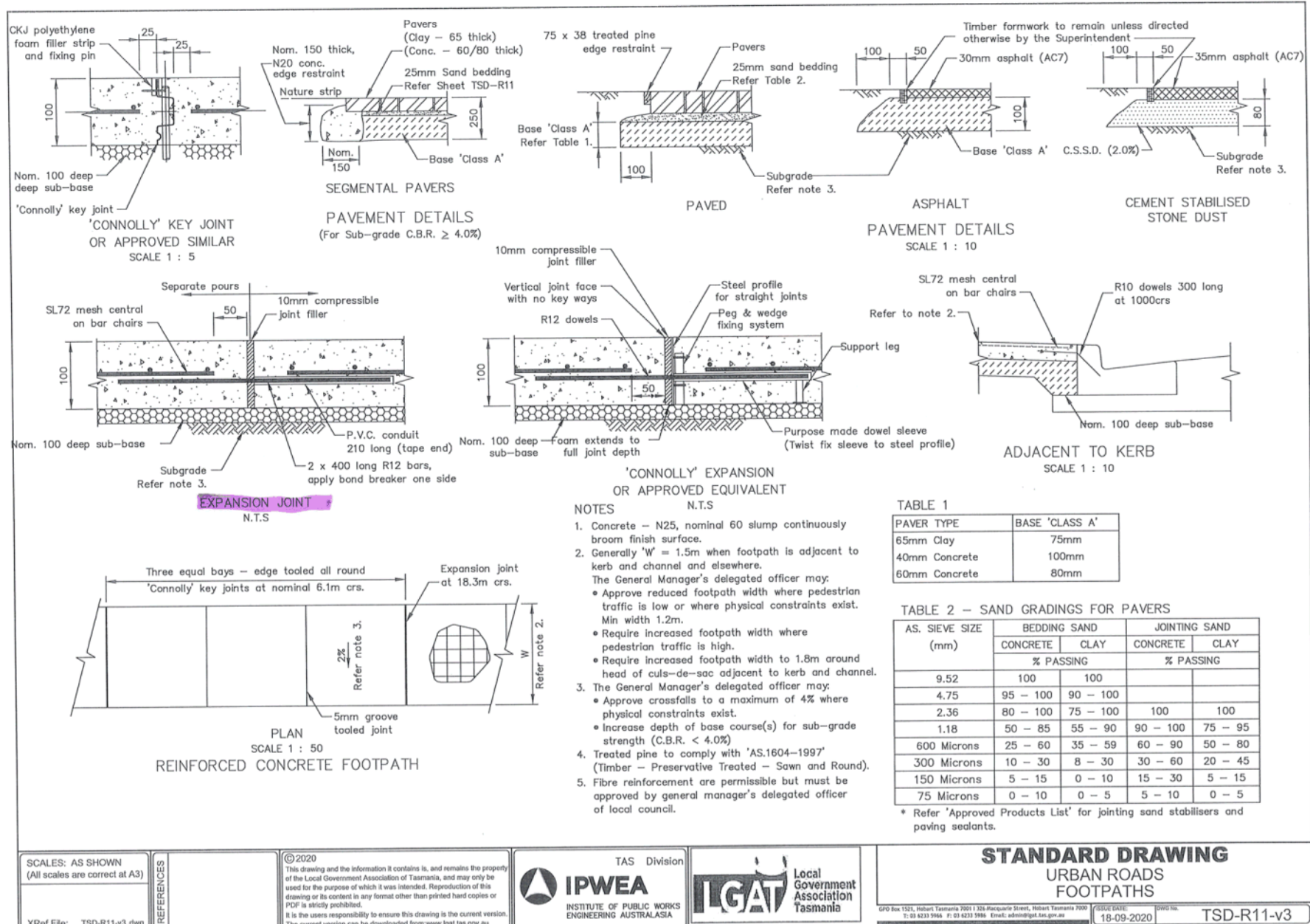
7/7/2022



Project Code: 155A	
Scale: 1:50	
Drawn by:	Joanne Crawley
Checked by:	Joanne Crawley
Date of Issue	5/06/2022
Sheet:	A 5 of 7







8. REPORTS

8.1 Six Monthly update on Visitor Accommodation Approvals - July 2022 **File Ref: F22/82637**

Memorandum of the Director City Life of 17 August 2022 and attachment.

Delegation: Committee

City of **HOBART****MEMORANDUM: CITY PLANNING COMMITTEE****Six Monthly update on Visitor Accommodation Approvals -
July 2022**

At its meeting on 14 August 2017, the Council requested a report be prepared on a six monthly basis in relation to the location of approvals of self-contained visitor accommodation.

Attached is a map showing current visitor accommodation permits issued from 1 January – 30 June 2022 as well as those approved up and to and including 1 August 2014.

RECOMMENDATION***That:***

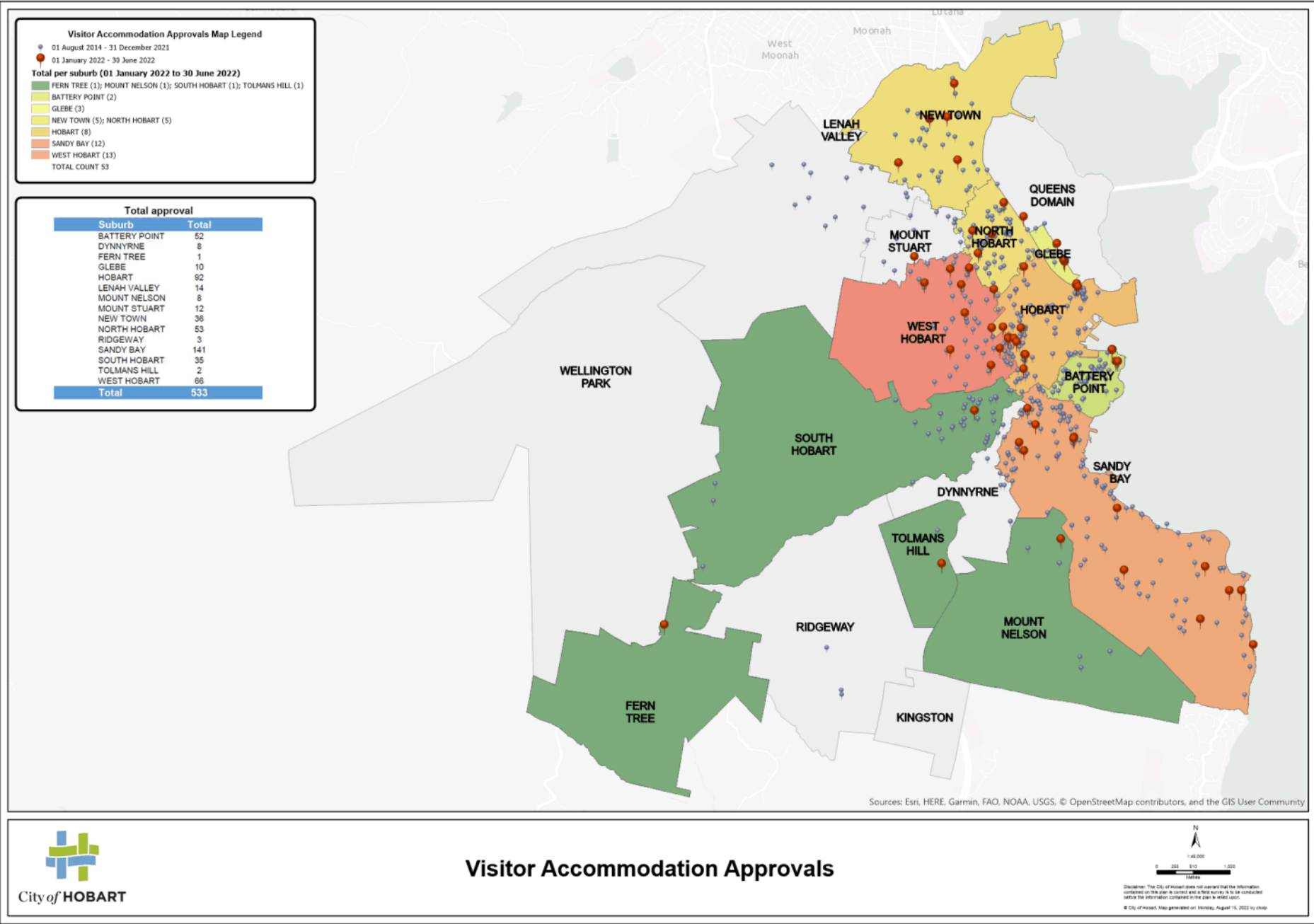
- 1. That the information contained in the memorandum titled Six Monthly update on Visitor Accommodation Approvals - July 2022 be received and noted.***

As signatory to this report, I certify that, pursuant to Section 55(1) of the Local Government Act 1993, I hold no interest, as referred to in Section 49 of the Local Government Act 1993, in matters contained in this report.

Neil Noye
DIRECTOR CITY LIFE

Date: 17 August 2022
File Reference: F22/82637

Attachment A: 202208 Visitor Accommodation Approvals ↴



8.2 City Planning - Advertising Report
File Ref: F22/80167

Memorandum of the Director City Life of 10 August 2022 and attachment.

Delegation: Committee



City of **HOBART**

MEMORANDUM: CITY PLANNING COMMITTEE

City Planning - Advertising Report

Attached is the advertising list for the period 26 July 2022 to 8 August 2022

RECOMMENDATION

That:

- 1. That the information be received and noted.***

As signatory to this report, I certify that, pursuant to Section 55(1) of the Local Government Act 1993, I hold no interest, as referred to in Section 49 of the Local Government Act 1993, in matters contained in this report.

Neil Noye
DIRECTOR CITY LIFE

Date: 10 August 2022
File Reference: F22/80167

Attachment A: City Planning - Advertising Report ↓ 

Application	Street	Suburb	Development	Works Value	Expiry Date	Referral	Proposed Delegation	Advertising Period Start	Advertising Period End
PLN-22-115	24 WILMSLOW AVENUE	NEW TOWN	Two Multiple Dwellings	\$365,000	14/08/2022	ayersh	Director	26/07/2022	09/08/2022
PLN-22-463	2 / 42 GOULBURN STREET	HOBART	Change of Use to Visitor Accommodation	\$0	02/09/2022	ayersh	Council (Called In)	05/08/2022	19/08/2022
PLN-22-461	123 HAMPDEN ROAD	BATTERY POINT	Alterations	\$30,000	05/09/2022	baconr	Director	28/07/2022	11/08/2022
PLN-22-489	42 - 44 GEORGE STREET	NORTH HOBART	Partial Change of Use to Visitor Accommodation	\$0	08/09/2022	baconr	Director	02/08/2022	16/08/2022
PLN-22-126	9 ASCOT AVENUE	SANDY BAY	Partial Demolition, Alterations and Extension	\$750,000	31/08/2022	baconr	Director	03/08/2022	17/08/2022
PLN-22-476	57 RUTH DRIVE	LENAH VALLEY	Partial Demolition, Alterations and Extension	\$300,000	03/09/2022	baconr	Director	08/08/2022	22/08/2022
PLN-22-157	199 DAVEY STREET	SOUTH HOBART	Change of Use to Business and Professional Services and Signage	\$5,000	16/08/2022	ikinb	Committee Delegation	26/07/2022	09/08/2022

Application	Street	Suburb	Development	Works Value	Expiry Date	Referral	Proposed Delegation	Advertising Period Start	Advertising Period End
PLN-22-391	409 LIVERPOOL STREET	WEST HOBART	Partial Demolition, Alterations, and Extension	\$400,000	22/08/2022	langd	Director	28/07/2022	11/08/2022
PLN-22-396	17 CLARENDON STREET	NEW TOWN	Ancillary Dwelling	\$150,000	20/08/2022	langd	Director	28/07/2022	11/08/2022
PLN-22-182	5D ZOMAY AVENUE	DYNNYRNE	Partial Demolition, Alterations, and Extension	\$250,000	15/09/2022	langd	Director	08/08/2022	22/08/2022
PLN-22-379	1 / 5 A FITZROY PLACE	SANDY BAY	Partial Demolition, Alterations, and Extension	\$200,000	20/08/2022	maxwellv	Director	01/08/2022	15/08/2022
PLN-22-81	582 SANDY BAY ROAD	SANDY BAY	Subdivision (Consolidation of Titles)	\$0	01/09/2022	maxwellv	Director	03/08/2022	17/08/2022
PLN-22-213	548 NELSON ROAD	MOUNT NELSON	Two Multiple Dwellings	\$890,000	23/09/2022	mcclenahanm	Director	01/08/2022	15/08/2022
PLN-22-457	7 CANE STREET	WEST HOBART	Change of Use to Visitor Accommodation	\$0	30/08/2022	mcclenahanm	Director	01/08/2022	15/08/2022

Application	Street	Suburb	Development	Works Value	Expiry Date	Referral	Proposed Delegation	Advertising Period Start	Advertising Period End
PLN-22-355	28 QUEEN STREET	SANDY BAY	Partial Demolition, Alterations and Outbuilding	\$20,000	25/09/2022	mcclenahanm	Director	03/08/2022	17/08/2022
PLN-22-487	208 COLLINS STREET	HOBART	Partial Demolition and Alterations	\$16,000	06/09/2022	mcclenahanm	Director	05/08/2022	19/08/2022
PLN-22-497	36 FORSTER STREET	NEW TOWN	Alterations (Umbrellas)	\$71,912	09/09/2022	mcclenahanm	Director	08/08/2022	22/08/2022
PLN-22-467	11 BEACH ROAD	SANDY BAY	Change of Use to Visitor Accommodation	\$0	31/08/2022	obrienm	Director	02/08/2022	16/08/2022
PLN-22-256	16 WAYNE AVENUE	SANDY BAY	Partial Demolition and Alterations to Pedestrian and Vehicle Access, Driveway and Parking	\$50,000	23/08/2022	sherriffc	Committee Delegation	02/08/2022	16/08/2022
PLN-22-307	2 PRINCES STREET	SANDY BAY	Partial Demolition, Alterations, Extension, Ancillary Dwelling and Front Fencing	\$250,000	19/08/2022	sherriffc	Director	05/08/2022	19/08/2022
PLN-22-320	1 HATCHERY COURT	WEST HOBART	Dwelling	\$970,000	03/09/2022	sherriffc	Director	05/08/2022	19/08/2022

Application	Street	Suburb	Development	Works Value	Expiry Date	Referral	Proposed Delegation	Advertising Period Start	Advertising Period End
PLN-22-431	221 A CHAUCER ROAD (CT 181061/23)	LENAH VALLEY	Dwelling	\$360,000	16/08/2022	sherriffc	Director	05/08/2022	19/08/2022
PLN-22-449	7/337 CHURCHILL AVENUE AND COMMON LAND OF PARENT TITLE	SANDY BAY	Change of Use to Visitor Accommodation	\$0	07/10/2022	smeea	Council (Called In)	26/07/2022	09/08/2022
PLN-22-319	1 ASCOT AVENUE	SANDY BAY	Partial Demolition and Alterations to Access, Driveway, and Parking	\$30,000	01/09/2022	smeea	Committee Delegation	28/07/2022	11/08/2022
PLN-22-453	1 SHORT STREET	GLEBE	Partial Demolition, Alterations and Extension	\$250,000	03/09/2022	smeea	Director	08/08/2022	22/08/2022

8.3 Delegated Decision Report (Planning)
File Ref: F22/82108

Memorandum of the Director City Life of 16 August 2022 and attachment.

Delegation: Committee



City of **HOBART**

MEMORANDUM: CITY PLANNING COMMITTEE

Delegated Decision Report (Planning)

Attached is the delegated planning decisions report for the period 1 August 2022 to 15 August 2022.

RECOMMENDATION

That:

- 1. That the information be received and noted.***

As signatory to this report, I certify that, pursuant to Section 55(1) of the Local Government Act 1993, I hold no interest, as referred to in Section 49 of the Local Government Act 1993, in matters contained in this report.

Neil Noye
DIRECTOR CITY LIFE

Date: 16 August 2022
File Reference: F22/82108

Attachment A: Delegated Decision Report (Planning) ↓ 

16 August 2022

Delegated Decisions Report (Planning)

32 applications found.

Planning Description	Address	Works Value	Decision	Approved	All
				Authority	
PLN-21-479 Partial Demolition, Alterations and Extension	19 ABERDEEN STREET GLEBE TAS 7000	\$ 100,000	Approved	Delegated	
PLN-21-842 Swimming Pool, Pool House, and Alterations and Extension to Previously Approved Development	42 FISHER AVENUE SANDY BAY TAS 7005	\$ 250,000	Approved	Delegated	
PLN-22-1 Alterations, Signage and Partial Change of Use to Food Services	50 YORK STREET SANDY BAY TAS 7005	\$ 30,000	Approved	Delegated	
PLN-22-115 Two Multiple Dwellings	22 WILMSLOW AVENUE NEW TOWN TAS 7008	\$ 365,000	Approved	Delegated	
PLN-22-174 Partial Demolition and Outbuilding	272 PARK STREET NORTH HOBART TAS 7000	\$ 15,000	Approved	Delegated	
PLN-22-226 Partial Demolition, Alterations, and Partial Change of Use to Business and Professional Services (Medical Centre)	36 ARGYLE STREET HOBART TAS 7000	\$ 13,000,000	Approved	Delegated	
PLN-22-243 Change of Use to Visitor Accommodation	1/35 VALLEY STREET WEST HOBART TAS 7000	\$ 0	Approved	Delegated	
PLN-22-247 Partial Demolition, Alterations, Extension, and Ancillary Dwelling	247 NELSON ROAD MOUNT NELSON TAS 7007	\$ 150,000	Approved	Delegated	
PLN-22-289 Dwelling	221A CHAUCER ROAD LENA VALLEY TAS 7008 (CT 181061/26)	\$ 527,000	Approved	Delegated	
PLN-22-329 Change of Use to Visitor Accommodation	8-10 DOWNIE STREET SOUTH HOBART TAS 7004	\$ 0	Approved	Delegated	
PLN-22-332 Partial Demolition, Alterations, Extension, and Partial Change of Use to Ancillary Dwelling	26 WHELAN CRESCENT WEST HOBART TAS 7000	\$ 450,000	Approved	Delegated	
PLN-22-342 Ancillary Dwelling	52 FORSTER STREET NEW TOWN TAS 7008	\$ 89,000	Approved	Delegated	
PLN-22-367 Partial Demolition, Alterations, and Extension	37 PEDDER STREET NEW TOWN TAS 7008	\$ 250,000	Approved	Delegated	
PLN-22-382 Change of Use to Visitor Accommodation	1/2-4 FLINDERS LANE SANDY BAY TAS 7005	\$ 0	Approved	Delegated	
PLN-22-383 Signage	176-192 BROOKER AVENUE NORTH HOBART TAS 7000	\$ 0	Approved	Delegated	
PLN-22-387 Partial Demolition and Alterations	56-58 MELVILLE STREET HOBART TAS 7000	\$ 200,000	Approved	Delegated	
PLN-22-392 Demolition and Removal of Underground Storage Tanks	615 SANDY BAY ROAD SANDY BAY TAS 7005	\$ 0	Approved	Delegated	
PLN-22-405 Partial Demolition, Alterations, and Partial Change of Use to Shop and Eating Establishment	91 SALAMANCA PLACE BATTERY POINT TAS 7004	\$ 250,000	Approved	Delegated	
PLN-22-409 Alterations	83 BROOKER AVENUE GLEBE TAS 7000	\$ 16,000	Approved	Delegated	
PLN-22-411 Front Fencing	17 POETS ROAD WEST HOBART TAS 7000	\$ 15,000	Approved	Delegated	
PLN-22-413 Change of Use to Visitor Accommodation	2/86 UPPER FITZROY CRESCENT SOUTH HOBART TAS 7004	\$ 0	Approved	Delegated	
PLN-22-421 Signage	134 MACQUARIE STREET HOBART TAS 7000	\$ 0	Approved	Delegated	
PLN-22-425 Partial Change of Use to Visitor Accommodation	395 MACQUARIE STREET SOUTH HOBART TAS 7004	\$ 0	Approved	Delegated	

CITY OF HOBART

Planning Description	Address	Works Value	Decision	Authority
PLN-22-432 Partial Demolition	92 REGENT STREET SANDY BAY TAS 7005	\$ 5,000	Approved	Delegated
PLN-22-441 Partial Demolition and Alterations	6/8A ROMILLY STREET SOUTH HOBART TAS 7004	\$ 50,000	Approved	Delegated
PLN-22-444 Signage	63-65 ELIZABETH STREET HOBART TAS 7000	\$ 0	Approved	Delegated
PLN-22-448 Carport and Outbuilding	30A RIALANNAH ROAD MOUNT NELSON TAS 7007	\$ 15,000	Approved	Delegated
PLN-22-451 Extension to Operating Hours	116 AUGUSTA ROAD LENA VALLEY TAS 7008	\$ 0	Approved	Delegated
PLN-22-496 Change of Use to Visitor Accommodation	6 UNION STREET WEST HOBART TAS 7000	\$ 0	Approved	Delegated
PLN-22-501 Partial Change of Use to Visitor Accommodation	13 JEANNETTE COURT LENA VALLEY TAS 7008	\$ 0	Approved	Delegated
PLN-22-503 Change of Use to Visitor Accommodation	18 ROSSENDELL AVENUE WEST HOBART TAS 7000	\$ 0	Approved	Delegated
PLN-22-58 Dwelling	13 RIALANNAH ROAD MOUNT NELSON TAS 7007	\$ 543,000	Approved	Delegated

9. COMMITTEE ACTION STATUS REPORT

9.1 Committee Actions - Status Report

A report indicating the status of current decisions is attached for the information of Elected Members.

RECOMMENDATION

That the information be received and noted.

Delegation: Committee

Attachment A: City Planning Committee Meeting - Status Report -
July 2022

CITY PLANNING COMMITTEE – STATUS REPORT				
OPEN PORTION OF THE MEETING				
July 2022				
Ref.	Title	Report / Action	Action Officer	Comments
1	SMOKE – FREE HOBART PROJECT UPDATE Open Committee 28 September 2020	<p>Further investigations be undertaken to identify additional areas within the Hobart municipality that could be strategically implemented as smoke free.</p> <p>A further update to the City Planning Committee be provided in February 2021.</p>	Director Connected City	<p>ELT resolved to continue resourcing the Smoke-free Hobart initiative for another 12 months commencing August 2022. Resourcing is committed for a full time Smoking Education Officer working normal business hours, the budget includes an amount for signage maintenance.</p> <p>Over the coming 12 months ELT intends to explore options for the interface between the public and council's on-ground staff, with a view to deciding on a model for the City into the future. Part of this will be to examine the feasibility or otherwise of declaring additional areas of the municipality smoke-free.</p>

2	<p>PUBLIC ART FRAMEWORK – PUBLIC ART PRIVATE DEVELOPMENT GUIDE</p> <p>Open Committee 23 November 2020</p>	<ol style="list-style-type: none"> 1. A Public Amenity Policy for the City be developed, with public art being noted as one way a developer might contribute to the public amenity of the city. This policy would be the subject of a future report to the Council. 2. A report be provided to the Council on an annual basis detailing the contributions made under the Public Art Private Development Guide. 	<p>Director City Life</p> <p>Director City Futures</p>	<p>Officers are progressing the matter.</p>
3	<p>LOCAL HOUSING SOLUTIONS</p> <p>Open Council 21 June 2021</p>	<ol style="list-style-type: none"> 1. A report be prepared that investigates ways Council can provide advice to property owners regarding dwelling and property modifications, with a view to increase accommodation options across Hobart. 2. The advice be tailored for people who might want the flexibility to remain living at their property as their lifestyles might change or as they age, and also to increase the dwelling capacity on their property. 3. The report would: <ol style="list-style-type: none"> 1) Structure “plain English” explanations as to options for home modifications, planning requirements and how to meet building codes and heritage considerations. 2) Identify suitable properties where an increase in the number of dwellings could be possible 	<p>Director City Life</p>	<p>Officers are progressing the matter.</p>

		<ul style="list-style-type: none">3) Provide more information for such opportunities in partnership with organisations such as the Australian Institute of Architects or Housing Industry Association4) Consider allocating officer time as point of contact on finding these local housing solutions5) Consider the financial return to Council in order for the program to be successful.		
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4	CLIMATE ACTION Open Council25 October 2021	<ul style="list-style-type: none"> i. Recognises and supports the Tasmanian Premier's plans to introduce a 2030 net zero target into law and develop decarbonisation and resilience plans for individual sectors - including waste and transport; ii. Acknowledges that this target is important for playing our part to avoid dangerous climate change and meeting it will require significant changes to how we plan, build, manufacture and travel in the City of Hobart iii. That in recognition of our role as the capital city and the emissions generated within our LGA, request that the CEO undertake an assessment and provide recommendations as part of a report back to Council on how the City will prepare for and strengthen its existing strategies, targets, practises and policies so that the City can assist in meeting this zero by 2030 target. iv. That this assessment look broadly to harmonise and standardise our organisation's approach and consider our role operationally and as a policy-maker including in planning, community development, waste, transport, corporate energy efficiencies and natural resources management. 	<p style="text-align: center;">Director Connected City</p>	<p style="text-align: center;">Officers are progressing the matter.</p>
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		v. Seek a meeting with the Premier and Climate Change Minister to discuss the opportunities for collaboration on emission reductions projects and policies in the City of Hobart, and also authorises the CEO to make a submission to the Bill to amend the Climate Change Act.”		
5	REGIONAL STRATEGY – ADAPTING TO A CHANGE COASTLINE IN TASMANIA Open Council 16 May 2022	The Council apply the Strategy's coastal management principles to the development of a series of integrated hazard management plans for Hobart's coastal and riverine catchments.	Director City Life	Officers and progressing the matter.

10. RESPONSES TO QUESTIONS WITHOUT NOTICE

Regulation 29(3) *Local Government (Meeting Procedures) Regulations 2015*.
File Ref: 13-1-10

The Chief Executive Officer reports:-

"In accordance with the procedures approved in respect to Questions Without Notice, the following responses to questions taken on notice are provided to the Committee for information.

The Committee is reminded that in accordance with Regulation 29(3) of the *Local Government (Meeting Procedures) Regulations 2015*, the Chairman is not to allow discussion or debate on either the question or the response."

10.1 Visitor Accommodation - Concerns / Breaches

File Ref: F22/8323; 13-1-10

Memorandum of the Director City Life of 2 August 2022.

10.2 Approval Conditions

File Ref: F22/71035; 13-1-10

Memorandum of the Director City Life of 26 July 2022 and attachments.

That the information be received and noted.

Delegation: Committee



City of **HOBART**

**MEMORANDUM: LORD MAYOR
DEPUTY LORD MAYOR
ELECTED MEMBERS.**

VISITOR ACCOMMODATION - CONCERNS / BREACHES

Meeting: City Planning Committee

**Meeting date: 24 January
2022**

Raised by: Deputy Lord Mayor Burnet

Question:

Can the Acting Director please advise in relation to complaints that have been received of concerns and breaches to current planning permit conditions for visitor accommodation with particular reference to residential amenity?

How many active investigations are currently being undertaken?

Response:

Since 2018, Council has received eight complaints in relation to visitor accommodation that specifically reference residential amenity.

One enforcement action is ongoing.

As signatory to this report, I certify that, pursuant to Section 55(1) of the Local Government Act 1993, I hold no interest, as referred to in Section 49 of the Local Government Act 1993, in matters contained in this report.

Neil Noye
DIRECTOR CITY LIFE

Date: 2 August 2022
File Reference: F22/8323; 13-1-10



City of **HOBART**

**MEMORANDUM: LORD MAYOR
DEPUTY LORD MAYOR
ELECTED MEMBERS**

APPROVAL CONDITIONS

Meeting: City Planning Committee

Meeting date: 26 April 2022

Raised by: Alderman Briscoe

Question:

Can the Director provide the conditions of approval for the refuelling stations at both the Derwent Sailing Squadron and Royal Yacht Club of Tasmania?

Response:

The approvals are contained in the permits described below, both of which are attached to this response.

PLN-18-690

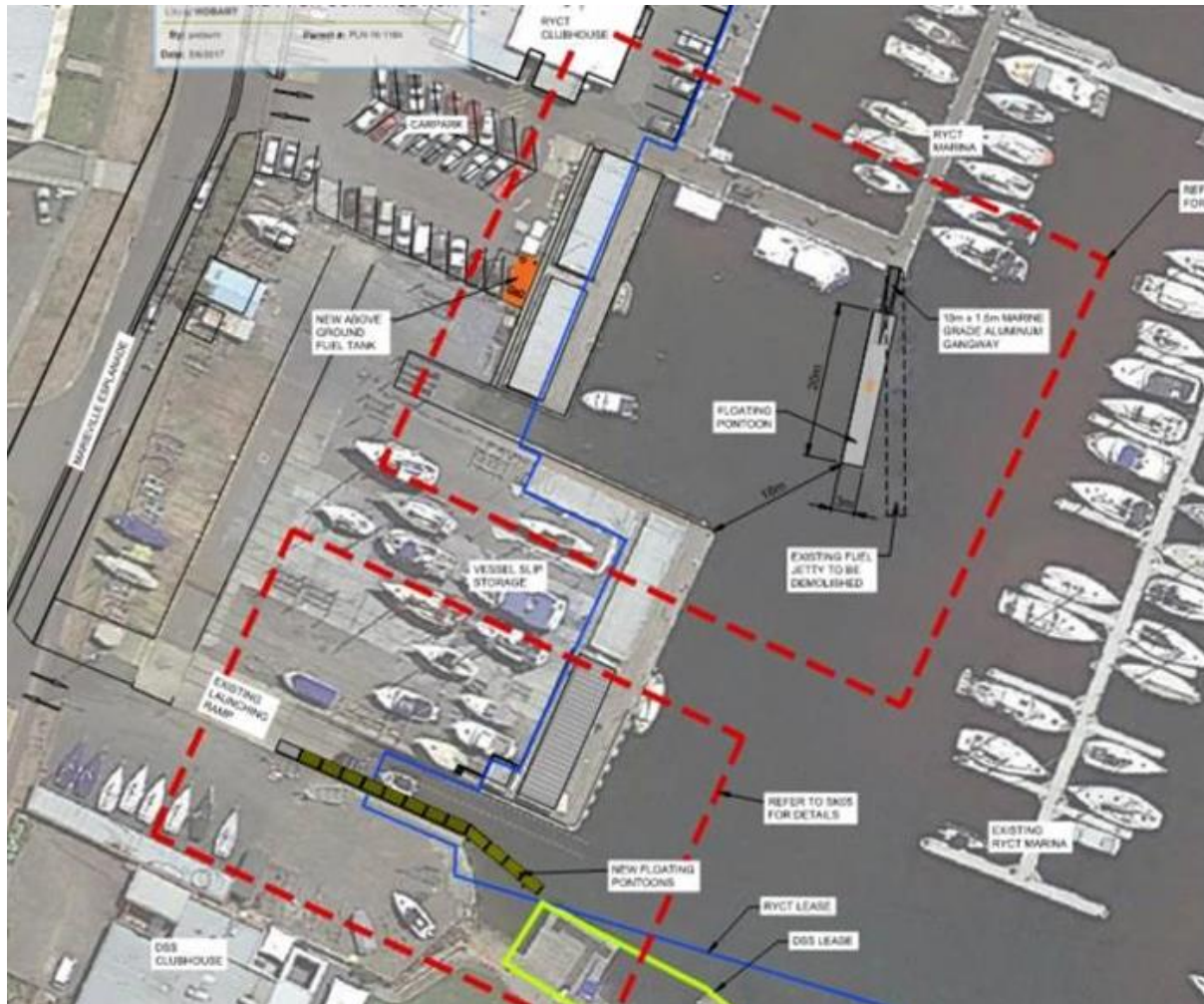
Derwent Sailing Squadron (23 Marieville Esplanade) – “refuelling facility (diesel tank and fuel berth) and associated works” - planning permit granted on 18 February 2019.

- Installation of a new above ground diesel fuel facility comprising one 30,000 litre tank.
- Upgrading of an existing jetty to create a fuel berth.
- Associated works including installation of fuel lines between tank and fuel berth.

**PLN-16-1184**

RYCT (15 Marieville Esplanade) – “partial demolition, boat ramp pontoon, refuelling pontoon and fuel storage tank and dispensing facility” – planning permit granted on 5 June 2017.

- A new pontoon system for the existing boat ramp (this pontoon has already been constructed).
- A new floating refuelling pontoon, including a marine grade aluminium gangway with access from the existing RYCT marina.
- A new proprietary fully self-contained (bunded) above ground fuel storage tank and dispensing facility, including new pipework to the refuelling pontoon.



As signatory to this report, I certify that, pursuant to Section 55(1) of the Local Government Act 1993, I hold no interest, as referred to in Section 49 of the Local Government Act 1993, in matters contained in this report.

Neil Noye
DIRECTOR CITY LIFE

Date: 26 July 2022
File Reference: F22/71035; 13-1-10

Attachment A: PLN-18-690 - 23 Marieville Esplanade Sandy Bay 7005 - Planning Permit Approved ↓

Attachment B: PLN-16-1184 - 15 Marieville Esplanade Sandy Bay TAS 7005 - Planning Permit S55 Clerical Error ↓

Hobart Interim Planning Scheme 2015

Land Use Planning and Approvals Act 1993

Planning Permit

APPLICATION NO	PLN-18-690
ADDRESS	23 MARIEVILLE ESPLANADE, SANDY BAY
PROPOSAL	REFUELLING FACILITY (DIESEL TANK AND FUEL BERTH) AND ASSOCIATED WORKS
PERMIT DATE	18 February 2019

The following conditions and restrictions apply to this permit:

The use/development of the land for the purpose of Refuelling Facility (Diesel Tank and Fuel Berth) and Associated Works subject to the following conditions and restrictions.

GEN

The use and/or development must be substantially in accordance with the documents and drawings that comprise PLN-18-690 - 23 MARIEVILLE ESPLANADE SANDY BAY TAS 7005 - Final Planning Documents.

Reason for condition

To clarify the scope of the permit.

ENV s1

The diesel storage tank must be fixed in place in a manner that can withstand the hydraulic forces associated with coastal inundation and storm surge events based on the advice of a suitably qualified engineer.

Reason for condition

To ensure that buildings and works dependent on a coastal location are appropriately designed and sited to account for risk from inundation

ENVHE 1

All works associated with the development, including protection measures and remediation, must be performed as specified within the Contamination Management Plan prepared by Geo-Environmental Solutions, dated December 2018.

Reason for condition

To ensure that works involving excavation of potentially contaminated land do not adversely impact on human health or the environment.

ADVICE

The following advice is provided to you to assist in the implementation of the planning permit that has been issued subject to the conditions above. The advice is not exhaustive and you must inform yourself of any other legislation, by-laws, regulations, codes or standards that will apply to your development under which you may need to obtain an approval. Visit the Council's [website](#) for further information.

Prior to any commencement of work on the site or commencement of use the following additional permits/approval may be required from the Hobart City Council.

BUILDING PERMIT

You may need building approval in accordance with the *Building Act 2016*. Click [here](#) for more information.

This is a Discretionary Planning Permit issued in accordance with section 57 of the *Land Use Planning and Approvals Act 1993*.

PLUMBING PERMIT

You may need plumbing approval in accordance with the *Building Act 2016*, *Building Regulations 2016* and the National Construction Code. Click [here](#) for more information.

FEES AND CHARGES

Click [here](#) for information on the Council's fees and charges.

INUNDATION PRONE AREAS

Please note that the site is likely to be subject to future coastal inundation events.

18 February
2019

Approved Date



Senior Statutory Planner

IMPORTANT INFORMATION ABOUT THE ATTACHED PERMIT

WHAT HAS BEEN DECIDED?

The Council has granted a permit subject to conditions.

WHEN DOES A PERMIT TAKE EFFECT?

The permit takes effect:

- If there is a right of appeal against the granting of a permit, 14 days from the day on which notice of the granting of the permit was served on the person who has a right appeal.
- Where an appeal has been made against the Council's decision to grant a permit, the determination or abandonment of the appeal.
- Where any other approvals are required under the *Land Use Planning and Approvals Act 1993* or any other Act, when all those approvals have been granted.

WHEN DOES A PERMIT LAPSE?

A permit lapses 2 years from the date on which it was granted if the use or development is not substantially commenced. An application can be made to extend the planning permit for a further 4 years. Such application must be made every 2 years up to 6 months following the expiry date.

WHAT ABOUT APPEALS?

An applicant for a permit may appeal against Council's decision to grant a permit. An appeal must be made within 14 days after the day on which notice of Council's decision was served on them.

Any person who has made a valid representation may appeal against the grant of a permit. Any appeal must be made within 14 days after the day on which notice of the granting of the permit was served on them.

An appeal may only be lodged with the Resource Management and Planning Appeal Tribunal. Please note that the Tribunal will not directly notify representors if an appeal is lodged by an applicant. You may either look for the notice of appeal, which will be published in *The Mercury*; or contact the Tribunal directly.

Details about appeals and the fees payable can be obtained from the Tribunal.

The Tribunal's contact details are as follows:

Telephone No: (03) 6165 6794

Postal Address:

GPO Box 2036
HOBART 7001

Street Address:

Level 6
144-148 Macquarie Street
HOBART

Email address: rmpat@justice.tas.gov.au

Web page: www.rmpat.tas.gov.au

Hobart Interim Planning Scheme 2015
Land Use Planning and Approvals Act 1993

Planning Permit

APPLICATION NO PLN-16-1184

ADDRESS 15 MARIEVILLE ESPLANADE,
 SANDY BAY & ADJACENT
 AREA OF RIVER DERWENT

PROPOSAL PARTIAL DEMOLITION, BOAT
 RAMP PONTOON, REFUELLING
 PONTOON AND FUEL
 STORAGE TANK AND
 DISPENSING FACILITY

PERMIT DATE 5 June 2017

The following conditions and restrictions apply to this permit:

The use/development of the land for the purpose of Partial Demolition, Boat Ramp Pontoon, Refuelling Pontoon and Fuel Storage Tank and Dispensing Facility subject to the following conditions and restrictions.

GEN

The use and/or development must be substantially in accordance with the documents and drawings that comprise PLN-16-1184 - 15 MARIEVILLE ESPLANADE SANDY BAY TAS 7005 except where modified below.

Reason for condition

To clarify the scope of the permit.

ENG 12

A construction waste management plan must be implemented throughout construction.

A construction waste management plan must be submitted and approved, prior to commencement of work on the site. The construction waste management plan must include:

- Provisions for the handling, transport and disposal of demolition material, including any contaminated waste and recycling opportunities, to satisfy the above requirement.

All work required by this condition must be undertaken in accordance with the approved construction waste management plan.

Advice: Once the construction waste management plan has been approved, the Council will issue a condition endorsement (see general advice on how to obtain condition endorsement).

It is recommended that the developer liaise with the Council's Cleansing and Solid Waste Unit regarding reducing, reusing and recycling materials associated with demolition on the site to minimise solid waste being directed to landfill. Further information can also be found on the Council's [website](#).

Reason for condition

To ensure that solid waste management from the site meets the Council's requirements and standards.

ENG 1

The cost of repair of any damage to the Council infrastructure resulting from the implementation of this permit, must be met by the developer within 30 days of the completion of the development or as otherwise determined by the Council.

A photographic record of the Council infrastructure adjacent to the subject site must be provided to the Council prior to any commencement of works.

A photographic record of the Council's infrastructure (e.g. existing property service connection points, roads, buildings, stormwater, footpaths, driveway crossovers and nature strips, including if any, pre existing damage) will be relied upon to establish the extent of damage caused to the Council's infrastructure during construction. In the event that the developer fails to provide to the Council a photographic record of the Council's infrastructure, then any damage to the Council infrastructure found on completion of works will be deemed to be the responsibility of the developer.

Reason for condition

To ensure that any of the Council infrastructure and/or site-related service connections affected by the proposal will be altered and/or reinstated at the developer's full cost.

ENV 2

Demolition and construction environmental management measures, in accordance with an approved Demolition and Construction Environmental Management Plan (D&CEMP) must be implemented.

A D&CEMP must be submitted and approved, prior to the issue of any building consent or commencement of work (if no building consent is required). The D&CEMP must identify potential impacts upon natural values as a result of the development during demolition and construction works and include management measures where necessary to minimise potential impacts including:

- **disturbance of the river bed during demolition of the existing jetty;**
- **sediment transfer into waterways from the construction of new fuel lines and fuel tank;**
- **disturbance of noise sensitive fauna during piling activities; and**
- **leaks and spills of fuels, wastes and other pollutants into waterways (including from construction equipment and machinery).**

The D&CEMP must demonstrate compliance with any relevant recommendations of the *Wetlands and Waterways Works Manual* (DPIWE, 2003) and *Tasmania Coastal Works Manual* (DPIPWE, 2010).

All work required by this condition must be undertaken in accordance with the approved D&CEMP.

Advice: Once the D&CEMP has been approved, the Council will issue a condition endorsement (see general advice on how to obtain condition endorsement).

Reason for condition

To ensure the development meets the provisions of the Inundation Prone Areas Code of the Hobart Interim Planning Scheme 2015.

ENV s1

The development must be designed, installed and operated in accordance with Australian Standard AS-1940: *The storage and handling of flammable and combustible liquids*.

Reason for condition

To ensure the development complies with the Waterway and Coastal Protection Code of the Hobart Interim Planning Scheme 2015.

ENV s2

The development must be designed and used in accordance with *The Royal Yacht Club of Tasmania Fuel Facilities - Refueling Procedures and Guidelines* (September, 2016) or an alternative document specifying refueling requirements and procedures approved in writing by the Planning Authority.

Reason for condition

To ensure the development complies with the Waterway and Coastal Protection Code of the Hobart Interim Planning Scheme 2015.

ENVHE 1

Recommendations in the report 'Environmental Site Assessment, Royal Yacht Club of Tasmania, 15 Maryville Esplanade Sandy Bay, February 2017' and the associated 'Contamination Management Plan, Royal Yacht Club of Tasmania, Sandy Bay, February 2017' prepared by Geo-Environmental Solutions P/L, 86 Queen St, Sandy Bay, must be implemented.

Reason for condition

To ensure that the risk to future occupants of the building remain low and acceptable.

ADVICE

The following advice is provided to you to assist in the implementation of the planning permit that has been issued subject to the conditions above. The advice is not exhaustive and you must inform yourself of any other legislation, by-laws, regulations, codes or standards that will apply to your development under which you may need to obtain an approval. Visit the Council's [website](#) for further information.

Prior to any commencement of work on the site or commencement of use the following additional permits/approval may be required from the Hobart City Council.

CONDITION ENDORSEMENT

As a condition endorsement is required by a planning condition above, you will need to submit the relevant documentation to satisfy the condition, via the Condition Endorsement Submission on Council's online e-service portal.

Once approved, the Council will respond to you via email that the condition(s) has been endorsed (satisfied). Detailed instructions can be found [here](#).

BUILDING PERMIT

Building permit in accordance with the *Building Act 2016*. Click [here](#) for more information.

TEMPORARY PARKING PERMITS

Temporary parking permits for construction vehicles i.e. residential or meter parking/loading zones. Click [here](#) for more information.

ENVIRONMENTAL MANAGEMENT

Please note that under section 32 of the Environmental Management and Pollution Control Act 1994 a person responsible for the activity must notify the relevant council, as soon as reasonably practicable but not later than 24 hours, after becoming aware of the release of a pollutant occurring as the result of any incident in relation to that activity, including an emergency, accident or malfunction, if this release causes or may cause an environmental nuisance.

NOISE REGULATIONS

Click [here](#) for information with respect to noise nuisances in residential areas.

WASTE DISPOSAL

Click [here](#) for information regarding waste disposal.

FEES AND CHARGES

Click [here](#) for information on the Council's fees and charges.

DIAL BEFORE YOU DIG

Click [here](#) for dial before you dig information.

CONSULTATION WITH THE DERWENT SAILING SQUADRON

It is recommended that the Applicant consult with the Derwent Sailing Squadron in relation to the southern floating pontoon.

5 June 2017

Approved Date



Acting Senior Statutory Planner

IMPORTANT INFORMATION ABOUT THE ATTACHED PERMIT

WHAT HAS BEEN DECIDED?

The Council has granted a permit subject to conditions.

WHEN DOES A PERMIT TAKE EFFECT?

The permit takes effect:

- If there is a right of appeal against the granting of a permit, 14 days from the day on which notice of the granting of the permit was served on the person who has a right appeal.
- Where an appeal has been made against the Council's decision to grant a permit, the determination or abandonment of the appeal.
- Where any other approvals are required under the Land Use Planning and Approvals Act 1993 or any other Act, when all those approvals have been granted.

WHEN DOES A PERMIT LAPSE?

A permit lapses 2 years from the date on which it was granted if the use or development is not substantially commenced. An application can be made to extend the planning permit for a further 4 years. Such application must be made every 2 years up to 6 months following the expiry date.

WHAT ABOUT APPEALS?

An applicant for a permit may appeal against Council's decision to grant a permit. An appeal must be made within 14 days after the day on which notice of Council's decision was served on them.

Any person who has made a valid representation may appeal against the grant of a permit. Any appeal must be made within 14 days after the day on which notice of the granting of the permit was served on them.

An appeal may only be lodged with the Resource Management and Planning Appeal Tribunal. Please note that the Tribunal will not directly notify representors if an appeal is lodged by an applicant. You may either look for the notice of appeal, which will be published in The Mercury; or contact the Tribunal directly.

Details about appeals and the fees payable can be obtained from the Tribunal.

The Tribunal's contact details are as follows:

Telephone No: (03) 6165 6794

Postal Address:

GPO Box 2036
HOBART 7001

Street Address:

Level 6
144-148 Macquarie Street
HOBART

Email address: rmpat@justice.tas.gov.au **Web page:** www.rmpat.tas.gov.au

11. QUESTIONS WITHOUT NOTICE

Section 29 of the *Local Government (Meeting Procedures) Regulations 2015*.
File Ref: 13-1-10

An Elected Member may ask a question without notice of the Chairman, another Elected Member, the Chief Executive Officer or the Chief Executive Officer's representative, in line with the following procedures:

1. The Chairman will refuse to accept a question without notice if it does not relate to the Terms of Reference of the Council committee at which it is asked.
2. In putting a question without notice, an Elected Member must not:
 - (i) offer an argument or opinion; or
 - (ii) draw any inferences or make any imputations – except so far as may be necessary to explain the question.
3. The Chairman must not permit any debate of a question without notice or its answer.
4. The Chairman, Elected Members, Chief Executive Officer or Chief Executive Officer's representative who is asked a question may decline to answer the question, if in the opinion of the respondent it is considered inappropriate due to its being unclear, insulting or improper.
5. The Chairman may require a question to be put in writing.
6. Where a question without notice is asked and answered at a meeting, both the question and the response will be recorded in the minutes of that meeting.
7. Where a response is not able to be provided at the meeting, the question will be taken on notice and
 - (i) the minutes of the meeting at which the question is asked will record the question and the fact that it has been taken on notice.
 - (ii) a written response will be provided to all Elected Members, at the appropriate time.
 - (iii) upon the answer to the question being circulated to Elected Members, both the question and the answer will be listed on the agenda for the next available ordinary meeting of the committee at which it was asked, where it will be listed for noting purposes only.

12. CLOSED PORTION OF THE MEETING

That the Committee resolve by majority that the meeting be closed to the public pursuant to regulation 15(1) of the *Local Government (Meeting Procedures) Regulations 2015* because the items included on the closed agenda contain the following matters:

- Confirm the minutes of the Closed portion of the meeting
- Questions without notice in the Closed portion

The following items were discussed: -

- | | |
|------------|--|
| Item No. 1 | Minutes of the last meeting of the Closed Portion of the Committee Meeting |
| Item No. 2 | Consideration of supplementary items to the agenda |
| Item No. 3 | Indications of pecuniary and conflicts of interest |
| Item No. 4 | Questions Without Notice |