CITY OF HOBART

AGENDA

City Planning Committee Meeting

Open Portion

Monday, 2 August 2021

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.

City Planning Committee Meeting (Open Portion) held Monday, 2 August 2021 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 3 April 2020 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 Burnet (Chairman)
Briscoe
Harvey
Behrakis
Dutta
Coats

Apologies: Nil

Leave of Absence: Nil

NON-MEMBERS
Lord Mayor Reynolds
Zucco
Sexton
Thomas
Ewin
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, 19 July 2021, 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 HOBART INTERIM PLANNING SCHEME 2015

7.1.1 43A PIRIE STREET, 43 PIRIE STREET NEW TOWN AND ADJACENT ROAD RESERVE - DEMOLITION, SIX MULTIPLE DWELLINGS, FRONT FENCING, AND ASSOCIATED WORKS PLN-21-200 - FILE REF: F21/73342

Address:	43A Pirie Street, 43 Pirie Street, New Town and Adjacent Road Reserve
Proposal:	Demolition, Six Multiple Dwellings, Front Fencing and Associated Works
Expiry Date:	9 August 2021
Extension of Time:	Not applicable
Author:	Ben Ikin

RECOMMENDATION

That pursuant to the *Hobart Interim Planning Scheme 2015*, the Council approve the application for demolition, six multiple dwellings, front fencing, and associated works at 43A PIRIE STREET NEW TOWN TAS 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-21-200 - 43A PIRIE STREET NEW TOWN TAS 7008 - 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 2021/00511-HCC dated 13/04/2021 as attached to the permit.

Reason for condition

To clarify the scope of the permit.

PLN 15a

A demolition waste management plan must be implemented throughout demolition. The demolition 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.

Advice:

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

PLN s1

The approved building must be contained within the building envelope prescribed by clause 11.4.2 A3 of the *Hobart Interim Planning Scheme 2015* (version 38).

Revised plans must be submitted and approved as a Condition Endorsement, prior to the issue of any approval under the *Building Act 2016*, that clearly demonstrate compliance with the above requirement.

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

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

In accordance with the applicant's planning report

PLN s2

Each dwelling must be provided with a north facing deck at first floor level that is at least 20sqm in area, with a minimum horizontal

dimension of 3m, and a north facing deck at second floor level that is at least 10sqm in area (except the westernmost unit which can have an 8sqm deck).

Prior to the issue of any approval under the *Building Act 2016*, excluding for demolition, revised plans must be submitted and approved as a Condition Endorsement, demonstrating compliance with the above.

All work required by this condition must be undertaken in accordance with the approved revised plans, prior to first occupation.

Advice:

The plans submitted to Council on 6 July are considered to satisfy the requirements of this condition.

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 future occupants of the dwellings have an area of private open space that affords them a reasonable level of amenity

PLN s3

A landscape plan must be prepared for the soft and hard landscaping of the site, by a suitable qualified landscape designer/architect.

Prior to the issue of any approval under the *Building Act 2016*, a landscape plan must be submitted and approved as a Condition Endorsement, in accordance with the above requirement. The landscaping plan must include:

1. Details of the landscaping of the front gardens of the dwellings, paying particular attention to the area within one metre of the road reservation.
2. Details of the landscaping (hard and soft) proposed within the communal garden area
3. The species and size at planting of each tree.

4. The location of footpaths, lighting and any proposed or existing underground infrastructure within the Communal garden.
5. A maintenance schedule sufficient to ensure the long term viability of the landscaping. The maintenance schedule must include provision for routine maintenance including irrigation servicing, pest control and replacement of failed plantings where necessary and appropriate.

All landscaping must be planted and installed in accordance with the approved landscaping plan. Prior to occupancy, confirmation from the landscape designer/architect who prepared the approved landscaping plan (or another suitably qualified landscape designer/architect) that the all landscaping works required by this condition have been implemented, must be submitted to the satisfaction of the Directory City Planning.

Once planted and installed, the landscaping must be maintained in accordance with the maintenance schedule.

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 development provides landscaping of the site that will afford a reasonable level of amenity for the future occupants of the dwelling, and be complementary to the streetscape

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 driveways and 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.

ENG sw4

The new stormwater connection must be constructed and existing abandoned connections sealed by the Council at the owner's expense, prior to the first occupation.

Detailed engineering drawings must be submitted and approved as part of an application for a new stormwater connection, prior to the issuing of any approval under the *Building Act 2016* or commencement of works (whichever occurs first). The detailed engineering drawings must include:

1. the location of the proposed connection; and
2. the size of the connection appropriate to satisfy the needs of the development.

All work required by this condition must be undertaken in accordance with the approved detailed engineering drawings.

Advice:

The applicant is advised to submit detailed design drawings via a Council City Amenity Division application for a new stormwater connection. If detailed design to satisfy this condition is submitted via the planning condition endorsement process there may be fees associated with the assessment, and once approved the applicant will still need to submit an application for a new stormwater connection with Council City Amenity Division.

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

Reason for condition

To ensure the site is drained adequately.

ENG sw6

All stormwater from the proposed development (including hardstand runoff) must be discharged to the Council's stormwater infrastructure with sufficient receiving capacity prior to first occupation. All costs associated with works required by this condition are to be met by the owner.

Design drawings and calculations of the proposed stormwater drainage and connections to the Council's stormwater infrastructure must be submitted and approved prior to the commencement of work. The design drawings and calculations must:

1. prepared by a suitably qualified person; and
2. include long section(s)/levels and grades to the point of discharge.

All work required by this condition must be undertaken in accordance with the approved design drawings and calculations.

Advice:

The applicant is advised to submit detailed design drawings and calculations as part of their Plumbing Permit Application. If detailed design to satisfy this condition is submitted via the planning condition endorsement process there may be fees associated with the assessment, and once approved the applicant will still need to obtain a plumbing permit for the works.

Reason for condition

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

SW 9

Prior to occupancy or the 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 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.

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.

ENG 2a

Prior to first occupation or commencement of use (whichever occurs first), vehicular barriers compliant with the Australian Standard AS/NZS 1170.1:2002 must be installed to prevent vehicles running off the edge of an access driveway or parking module (parking spaces, aisles and manoeuvring area) where the drop from the edge of the trafficable area to a lower level is 600mm or greater, and wheel stops (kerb) must be installed for drops between 150mm and 600mm. Barriers must not limit the width of the driveway access or parking and turning areas approved under the permit.

Advice:

The Council does not consider a slope greater than 1 in 4 to constitute a lower level as described in AS/NZS 2890.1:2004 Section 2.4.5.3. Slopes greater than 1 in 4 will require a vehicular barrier or wheel stop.

Designers are advised to consult the National Construction Code 2016 to determine if pedestrian handrails or safety barriers compliant with the NCC2016 are also required in the parking module this area may be considered as a path of access to a building.

Reason for condition

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

ENG 2b

Prior to the issue of any approval under the *Building Act 2016* or the commencement of works on site (whichever occurs first), a certified vehicle barrier design (including site plan with proposed location(s) of installation) prepared by a suitably qualified engineer, compliant with Australian Standard AS/NZS 1170.1:2002, must be submitted to Council as a Condition Endorsement.

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

ENG 2c

Prior to first occupation or commencement of use (whichever occurs first), vehicular barriers must be inspected by a qualified engineer and certification submitted to the Council confirming that the installed vehicular barriers comply with the certified design and Australian Standard AS/NZS 1170.1:2002.

Advice:

Certification may be submitted to the Council as part of the Building Act 2016 *approval process or via condition endorsement (see general advice on how to obtain condition endorsement).*

Reason for condition

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

ENG 3a

Prior to first occupation or commencement of use (whichever occurs first), the access driveway, circulation roadways, ramps, and parking module (parking spaces, aisles and, manoeuvring area) must be designed and constructed in accordance with Australian Standard AS/NZS 2890.1:2004 (including the requirement for vehicle safety barriers where required), or a Council approved alternate design certified by a suitably qualified engineer to provide a safe and efficient access, and enable safe, easy and efficient use.

Advice:

It is advised that designers consider the detailed design of the access and parking module prior to finalising the Finished Floor Level (FFL) of the parking spaces (especially if located within a garage incorporated into the dwelling), as failure to do so may result in difficulty complying with this condition.

Reason for condition

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

ENG 3b

The access driveway, circulation roadways, ramps, and parking module (parking spaces, aisles, and manoeuvring area) design must be submitted and approved as a Condition Endorsement, prior to the commencement of work, and issuing of any approval under the *Building Act 2016*.

The access driveway, circulation roadways, ramps, and parking module (parking spaces, aisles, and manoeuvring area) design must:

1. Be prepared and certified by a suitably qualified engineer;
2. Be generally in accordance with the Australian Standards, AS/NZS 2890.1:2004;
3. Where the design deviates from AS/NZS2890.1:2004, the designer must demonstrate that the design will provide a safe and efficient access, and enable safe, easy and efficient use;
4. Show dimensions, levels, gradients and transitions, and any other details as Council deem necessary to satisfy the above requirement; and

5. Have a minimum vertically clear driveway width of 3 meters and provide sufficient headroom to comply with Section 5.3 of AS/NZS 2890.1:2004

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 advised that designers consider the detailed design of the access and parking module prior to finalising the Finished Floor Level (FFL) of the parking spaces (especially if located within a garage incorporated into the dwelling), as failure to do so may result in difficulty complying with this condition.

It is advised that designers consider the minimum vertical clearances (headroom) with respect to small and medium rigid vehicle classifications, as failure to do so may result in difficulty complying with this condition.

Reason for condition

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

ENG 3c

The access driveway, circulation roadways, ramps, and parking module (parking spaces, aisles, and manoeuvring area) must be constructed in accordance with the design drawings approved by Condition ENG 3b.

Prior to first occupation or commencement of use (whichever occurs first), documentation by a suitably qualified engineer certifying that the access driveway and parking module has been constructed in accordance with the above drawings must be lodged with Council.

Advice:

Certification may be submitted to Council as part of the Building Act 2016 *approval process or via condition endorsement (see general advice on how to obtain condition endorsement)*

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 access driveway, and parking module (parking spaces, aisles, and manoeuvring area) approved by this permit must be constructed to a sealed standard (spray seal, asphalt, concrete, pavers or equivalent Council approved) and surface 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 car parking spaces approved to be used on the site is Thirteen (13).

The approved visitor car parking space must be clearly sign marked as such.

Reason for condition

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

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 13

The frontage fencing for 43A Pirie Street must allow adequate sight distance between user vehicles, cyclists and pedestrians.

Reason for condition

To ensure the safety of vehicles entering and leaving the development and of pedestrians and traffic in the vicinity.

ENG r3

Prior to the commencement of use, the proposed driveway crossover on the Roope Street highway reservation must be designed and constructed in accordance with:

- Urban - TSD-R09-v1 – Urban Roads Driveways and TSD R14-v3 Type Open wedge vehicular crossing.

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 (ie 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 your 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 Road Services Engineer and may require further planning approvals. It is advised to place a note to this affect 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.

ENV 2

Sediment and erosion control measures, 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.

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.

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.

HER 9

A construction management plan must be prepared and contain protocols and recommendations for all contractors working in close proximity to the stone foundations along the boundary of 31 Pirie Street (Flint House) to be briefed on the heritage values of the heritage listed site and for the need to protect the structure whilst undertaking the proposed works to upgrade infrastructure.

Prior to the commencement of works (including demolition and excavation), all workers and managers must be briefed on the importance of the cultural heritage values of the site as part of a site induction. This must be undertaken by a suitably qualified heritage practitioner.

Prior to the issue of any approval under the Building Act 2016, the construction management plan must be submitted and approved as a Condition Endorsement in accordance with the above requirements. All works must be undertaken in accordance with the approved construction 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 that there is no loss or damage to the heritage values or significant fabric of the site.

HER 11

The turning circle at 43 Pirie Street must be retained and the curve to the right of way shown on drawing DA02 must be implemented.

Prior to the issue of any approval under the *Building Act 2016*, plans must be submitted and approved as a Condition Endorsement showing the retention of the turning in accordance with the above requirement.

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

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 development at a heritage place is undertaken in a sympathetic manner which does not cause loss of historic cultural heritage significance.

HER 17a

The works within the right of way off Roope Street must be constructed with an exposed aggregate finish and be of a cream / sandstone colour.

Prior to the issue of any approval under the *Building Act 2016*, revised plans must be submitted and approved as a Condition Endorsement showing the proposed right of way in accordance with the above requirement.

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

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 development at a heritage place is undertaken in a sympathetic manner which does not cause loss of historic cultural heritage significance.

HER 18

The English Oak Tree noted as T4 at 43 Pirie Street must be protected throughout excavation and post construction in accordance with the Arboricultural Impact Assessment and Tree Protection Specification report and in accordance with AS 4970-2009 Protection of Trees on Development Sites. All recommendations must be complied with.

Prior to the issue of any approval under the *Building Act 2016*, plans must be submitted and approved as a Condition Endorsement showing Tree Protection Zones and all recommendations in the above report.

Reason for condition

To ensure that significant trees on the adjoining and subject site are not unnecessarily destroyed and are managed in a way that maintains their health and appearance.

SUB s1

The existing Right of Way burdening 43A Pirie Street, (CT 107319/1) in favour of 43 Pirie Street, (CT 199999/1) is to be extinguished and a new replacement Right of Carriageway is to be created to the satisfaction of the Council over the new concrete driveway that will provide access for both properties, prior to the first occupation of the Units on 43A Pirie Street.

Reason for condition

To ensure that the property at 43 Pirie Street will continue to have legal access via an unobstructed Right of Way through 43A Pirie Street.

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.

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.

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.

REDUNDANT CROSSOVERS

Redundant crossovers are required to be reinstated under the Hobart City Council's Infrastructure By law. Click here for more information.

ACCESS

Designed in accordance with LGAT- IPWEA – Tasmanian standard drawings. Click here for more information.

CROSS OVER CONSTRUCTION

The construction of the crossover can be undertaken by the Council or by a private contractor, subject to Council approval of the design. Click here for more information.

STORMWATER / ROADS / ACCESS

Services to be designed and constructed in accordance with the (IPWEA) LGAT – standard drawings. 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.

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-21-200 - 43A PIRIE STREET NEW TOWN TAS 7008 Planning Committee or Delegated Report ⇩

Attachment B: PLN-21-200 - 43A PIRIE STREET NEW TOWN TAS 7008 - CPC Agenda Documents ⇩

Attachment C: PLN-21-200 - 43A PIRIE STREET NEW TOWN TAS 7008 - Revised Plans ⇩

Attachment D: PLN-21-200 - 43A PIRIE STREET NEW TOWN TAS 7008 -Planning Referral Officer Cultural Heritage Report ⇩

City of HOBART

APPLICATION UNDER HOBART INTERIM PLANNING SCHEME 2015

Type of Report:	Committee
Council:	5 July 2021
Expiry Date:	9 August 2021
Application No:	PLN-21-200
Address:	43 A PIRIE STREET , NEW TOWN 43 PIRIE STREET , NEW TOWN ADJACENT ROAD RESERVE
Applicant:	Matthew Clark (JMG obo Tas Dream Pty Ltd) 117 Harrington Street
Proposal:	Demolition, Six Multiple Dwellings, Front Fencing, and Associated Works
Representations:	Ten
Performance criteria:	Inner Residential Zone Development Standards, Parking and Access Code and Historic Heritage Code

1. Executive Summary

1.1 Planning approval is sought for Demolition, Six Multiple Dwellings, Front Fencing, and Associated Works at 43A PIRIE STREET NEW TOWN TAS 7008.

1.2 More specifically the proposal includes:

- demolition of an existing single storey structure, removal of right of way and mature tree,
- construction of six (6) three storey multiple dwellings,
- the units will be constructed in two building or three units each, with approximately 3 metres separation,
- construction of new access off Roope Street to serve the six units and Flint House to the north, including filling of the eastern end of the site to provide acceptable grade to the driveway,
- the increase in ground level from the additional fill will be approximately 1.8m,
- construction of boundary fence, including closing the Pirie Street access to Flint House and the subject site,
- reinstatement of the footpath and crossover along Pirie Street,
- each unit is proposed to be five (5) bedroom with four (4) bathrooms, with two (2) parking spaces within a ground floor garage,
- there are two floor layouts, with the two end units having a slightly altered front balcony, aligned on an angle, whilst all other balconies are parallel to the building line,
- space for two rubbish bins per unit is shown behind the front fence on Pirie Street,
- one (1) parking space is proposed for visitor parking near the Roope Street boundary,
- a 9m2 first floor balcony is proposed on the north side of each unit with a larger area of private open space on the southern side,
- an area of community open space is proposed over the area of the previous driveway in the western portion of the site.

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

1.3.1 Inner Residential Zone - Building Envelope, Private Open Space, Privacy
1.3.2 Parking and Access Code - Number of Parking Spaces, Design of Vehicle Access, Layout of Parking Area
1.3.3 Historic Heritage Code - Demolition and New Works on Heritage Place

1.4 Ten (10) representations to the proposal were received, nine opposed, and one in support, within the statutory advertising period between 21st May to 4th June 2021.

1.5 The proposal is recommended for approval subject to conditions.

1.6 The final decision is delegated to the Council because the number of objections is more than five.

2. Site Detail

2.1 The site is located on the corner of Pirie and Roope Streets in New Town. The site is surrounded to the east, south and west by predominantly single storey single dwellings on moderate residential lots. Lots are generally around 650m2 in area. To the north east is Flint House, a heritage two storey substantial residence, which has operated as a low income boarding house since the 1980s. The access for Flint House traverses via a Right of Way through the western portion of the subject site.

Figure 1: Location Plan (Geo Cortex, 2021)

2.2 The site contains a concrete block single storey building that was originally known as the Quindalup Centre and provided facilities for disabled children. Both Flint House and the Quindalup Centre were run by the State Government until the property was sold into private hands in the early 1990s. The two structures were separated by resurvey of the existing lots in the early 1980s, which altered the north eastern boundary, including the minor kick out adjacent to the circular drive. When the State Government ran the complex, Flint House was known as the Mothercraft Home. It is assumed, but not confirmed, that the resurvey was to enable the two uses to operate independently. A Right of Way was included on the updated title for the subject site, to preserve the sweeping driveway access from Pirie Street. The current use of the concrete block building on site is temporary accommodation/shelter for the homeless.

Figure 2: Site plan (Geo Cortex, 2021)

Figure 3: View from Pirie Street (Officer photo, 2021)

2.3 The site drops down approximately 2m just inside the eastern boundary on Roope Street and gradually slopes down to the west.

Figure 4: View from Roope Street (Officer photo, 2021)

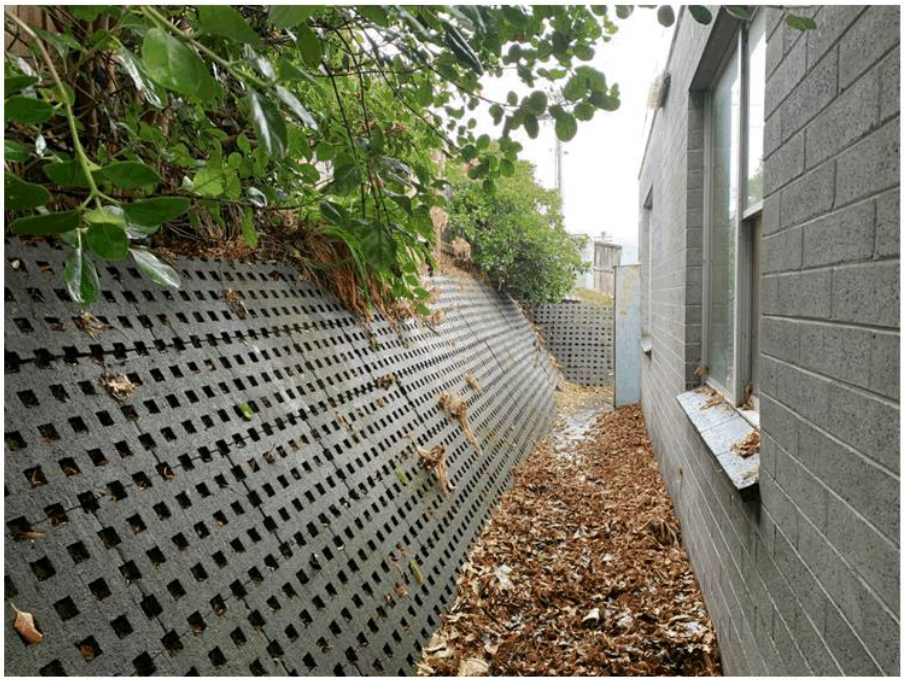


Figure 5: Change in Relative Level between Roope (to the left) and Pirie Streets (straight ahead) and subject site (Officer photo, 2021)

2.4 There are a number of mature Oak trees on the western side that line the driveway from Pirie Street to the turning circle in front of Flint House. The specimen to the right of the driveway is identified for removal.

Figure 6: View of Flint House Driveway connection to subject site (Officer photo, 2021)

2.5 With the construction of the new proposed road, there is potential for impact on two sandstone freestone retaining walls.

Figure 7: Heritage Fabric adjacent to the proposed access along Flint House boundary (Officer photo, 2021)

3. Proposal

3.1 Planning approval is sought for Demolition, Six Multiple Dwellings, Front Fencing, and Associated Works at 43A PIRIE STREET NEW TOWN TAS 7008.

3.2 More specifically the proposal includes:

- demolition of an existing single storey structure, removal of right of way and mature tree,
- construction of six (6) three storey multiple dwellings, the units will be constructed in two building or three units each, with approximately 3 metres separation,
- construction of new access off Roope Street to serve the six units and Flint House to the north, including filling of the eastern end of the site to provide acceptable grade to the driveway,
- the increase in ground level from the additional fill will be approximately 1.8m,
- construction of boundary fence, including closing the Pirie Street access to Flint House and the subject site,
- reinstatement of the footpath and crossover along Pirie Street,
- each unit is proposed to be five (5) bedroom with four (4) bathrooms, with two (2) parking spaces within a ground floor garage,
- there are two floor layouts, with the two end units having a slightly altered front balcony, aligned on an angle, whilst all other balconies are parallel to the building line,
- space for two rubbish bins per unit is shown behind the front fence on Pirie Street,
- one (1) parking space is proposed for visitor parking near the Roope Street boundary,
- a 9m2 first floor balcony is proposed on the north side of each unit with a larger area of private open space on the southern side,
- an area of community open space is proposed over the area of the previous driveway in the western portion of the site.

Figure 8: Concept view of Pirie Street frontage (MinD, 2021)

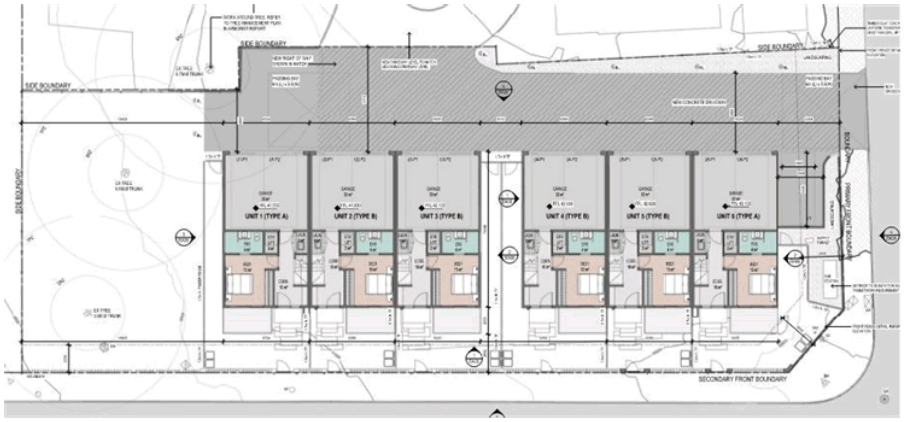


Figure 9: Ground floor plan for the six units, including double garage to rear (MinD, 2021)

Figure 10: First Floor Plan (MinD, 2021)

Figure 11: Second (top) floor (MinD, 2021)

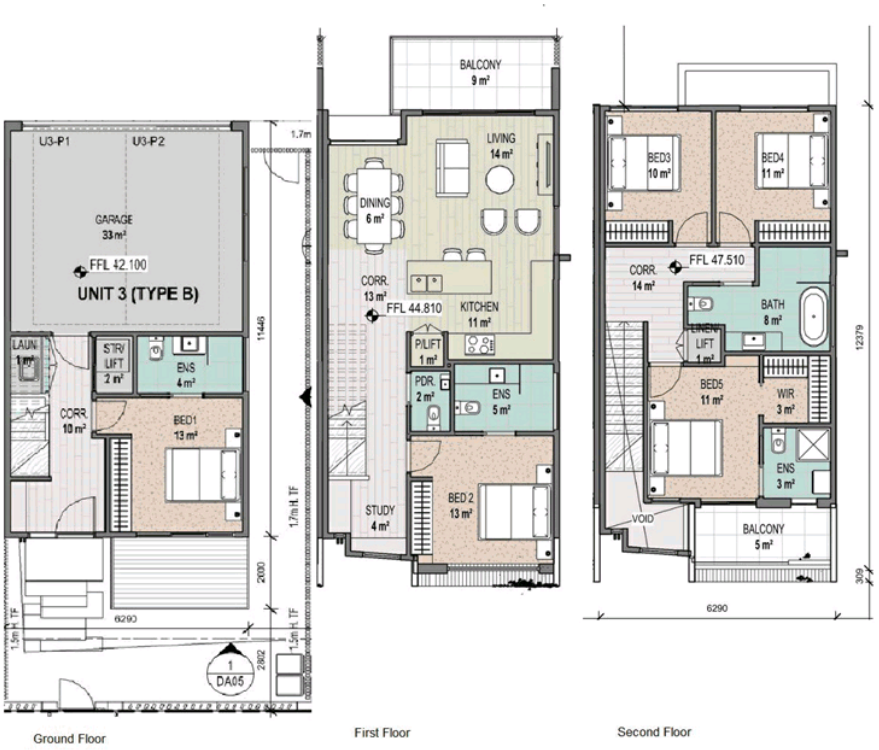


Figure 12: Close up view of one of the unit floor plans (MinD, 2021)

Figure 12: North East (rear) Elevations (MinD, 2021)

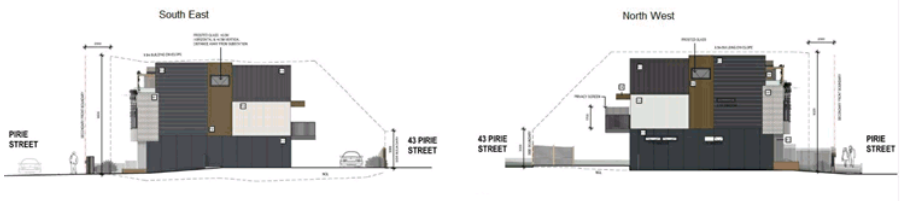


Figure 13: East (Roope Street frontage) and West Elevations (MinD, 2021)

4. Background

4.1 The site was originally part of Flint House.
1975 - the site was used as Mothercraft Home, including Matrons Residence, 2 storey student accommodation and another 2 storey building containing nursery and staff facilities.
1978 - extension to Mothercraft home, providing better accommodation and more car parking.
1982 - old Mothercraft Home deemed surplus to requirements and proposed to be separated from the balance of the site, which was owned by Department of Health Services and retained the use of Mental Health Services. No subdivision.
1985 - File note that the site is being used as a Boarding house and Aged Persons Housing - 52 rooms.
Transferred out of Government ownership into Private Freehold in 1994.

4.2 ENF-06-00217-01 and BLD-06-00217-01 - Ongoing fire safety issues

4.3 In response to the representations received, the applicant confirmed that the proposal was in fact outside the building envelope, notwithstanding the planning report indicated it was contained within the envelope. The applicant indicated that the proposal could be slightly modified to bring the entire building within the envelope, and revised plans were provided demonstrating this to be the case. In addition, the applicant chose to increase the size of the north facing decks for the dwellings, from 9sqm to 20sqm, add a second 10sqm north facing deck at second floor level, and changed two bedrooms to be living rooms, reducing the number of bedrooms from five to three. These plans are provided at Attachment C to this report.

5. Concerns raised by representors

5.1 Ten (10) representations, nine (9) objecting to and one (1) supporting the proposal (but requesting works be undertaken), were received within the statutory advertising period between 21st May to 4th June 2021.

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. The brackets after a representation grounds indicate the number of other representors who also raised this issue.

Height
Three storeys is too high.
The proposal will have a negative impact on the surrounding area due to its height, overall size of the building, proximity to Pirie Street boundary and visually unappealing facade.

This development is wrong on so many levels (all three of them in fact)!
Privacy
The apartments will look into the ones across the street, compromising the privacy of new and established families (3).
Whilst overshadowing will occur for five hours a day, privacy will be impacted every hour of every day.
Overshadowing
The overshadowing diagrams do not say if winter or summer.
There are several homes opposite that will be seriously affected by overshadowing, due to the proposed building heights. The front gardens are used on a daily basis and this space is particularly important in Hobart winter for young children both for natural light and warmth in their play area (5).
Studies show that the deprivation of sunlight can have a negative impact on health and wellbeing, including mental health issues.
Parking
Two car spaces each for 6 x 5 bedroom apartments - Really?? Where will all the cars go? (3).
This intersection is already congested with illegal parking too close to the intersection on a daily basis.
There is already a lack of parking for existing businesses in the area. Staff and patrons park in Roope and Pirie Streets often illegally.
Having family very close to this subject site, it is almost impossible to find a parking space within two blocks when dropping the children off from school. The lack of parking prevents more frequent visits.
Given that one can assume husband and wife each have a car, or if the apartments are rented to singles, there may be as many as four extra vehicles per apartment, which could mean an extra 24 vehicles (or bikes). Will the developer create off road parking for up to 24 cars?
The provision of just one visitor parking space is laughable (2).
Each five bedroom town house could have 2-3 vehicles visiting at any one time. It is presumptuous of the applicants to think this will be adequate.
Before the project proceeds, what steps will Council take to get the developer to address the parking issue?
What contingencies will Council take to address what is already almost at boiling point?
Will residents' concerns be listened to, addressed and respected?

The claim that there is adequate parking available in nearby streets is rejected and is seldom the case during work hours and often it is a struggle to locate an on street park in the evening (2).
Five bedrooms and bathrooms and 35m2 living spaces is not an attractive option for most families or retirees. It could attract up to ten (1) adults with ten cars per dwelling, leading to an additional sixty cars, plus visitors - this leads to an additional 48 vehicles on an already congested street from nearby local businesses, with no resident parking during the day (2).
The plans on p189-199 show visitor vehicle exit points onto Roope Street (road have been incorrectly named on plans). Vehicles parked opposite the exit point into Roope Street will not allow the proposed manoeuvre without a 3 point turn within 5m of a stop sign controlled intersection.
Roope is much narrower than Pirie, which makes the driveway access a lot more difficult.
Whilst not opposed to the proposal, the issues of traffic, congestion and parking are inadequate in this proposal.
Traffic
With the construction of the New Town Road apartments and the New Town Skin Cancer centre, there has been an incredible increase in traffic in Roope and Pirie Streets, which the area has struggled to deal with. How much more can the area realistically cope with? How much more traffic will the six units generate? (2)
Roope Swanston, Pirie and Cross Streets are narrow with parking on both sides, making two way traffic impossible. The representor has witnessed buses having to reverse up a whole block because they can't pass these parked vehicles. Restricting parking to one side would created enormous parking stress. Retaining parking on both sides, with the addition of this proposal parking density stress will clearly add to this.
The applicant's claim that there would be four vehicles per house is not believable.
There is no way to ensure the applicant's claim that less than 30 vehicle movements in peak hour with up to 60 people residing on site.
Traffic on these narrow streets is already often reduced to one way flow, with no option for widening (2)
Road safety is a huge concern with frequent near misses and one fatality on the intersection next to the proposal. Visibility is very poor due to the density of parked cars and the constant flow to New Town Plaza. An additional 60 cars would be catastrophic for safety and congestion in every street in New Town (2).

How will the council ensure the roads and footpaths remain safe for New Town residents?
Setback
Is this in line with existing properties? Will it fit in with the surrounding properties?
Visual Impact
what will the visual impact be on Flint House?
What else is planned for the site?
Pleased to see the demolition of the hideous concrete block building and replacement with apartments. No problem with the scale and number of apartments, but queries whether the report and design should have demonstrated "good manners" to the heritage streetscape and Flint House.
The illustrations show a lack of sympathy or compatibility with the area's existing buildings. The contrast is incongruous and grating (2)
Six three storey dwellings, only 2 metres back from the road with bedrooms and balconies viewing into at least 8 to 10 back yards and homes is not passive surveillance and will have a huge impact on the New Town community.
Despite the applicant claims, the apartment development will have an immediate negative visual impact and will stand out in an uncomplimentary way.
The large bulk and its proximity to Pirie Street, unappealing facade and building materials will render the proposal incongruous in the streetscape and not in keeping, or in harmony with the surrounding neighbourhood.
The privacy screens, made necessary due to the cramped conditions, present an unattractive disjointed appearance of superimposed boxes that cannot be assuaged with the use of overhangs and plantings.
Open space
Five bedrooms - Mum and dad and a bunch of kids? Where is the garden for the family?
Heritage
Is the Heritage tree being removed? Can it not be incorporated into the development? (2)
How can council allow the removal of a mature tree to be replaced with aa development that only allows smaller trees, leading to more fumes, congestion and road safety concerns?

New Town is rich in heritage, these three storey units are not at all in keeping with the aesthetics of its streets and homes, many of which are Federation and heritage listed (2).
The new driveway will be within metres of one of Hobarts oldest heritage listed site and something to be acknowledged and praised, not overshadowed by a three storey development.
Pirie Street is recognised as the oldest street in Hobart. There are a range of dwelling types in New Town, ranging from colonial house (many of which are stately homes) or single storey stand alone brick houses built in 1920s and 1930's, with sizable gardens. There are very few terraced houses.
The use of "standing seam and longline metal cladding, James Hardie easylap panel and timber look cladding, will give a modern appearance that will not easily fit into the heritage streetscape.
With the increased appreciation of the unique historic and cultural value of our heritage, there is a corresponding realisation in the community that heritage buildings and heritage neighbourhoods should be safeguarded and managed as important heritage sites for future Tasmanians.
General
There are many concerns over the development.
The addition of this 6 unit complex will not make a positive contribution to the area's ambience, safety and general wellbeing of residents. It will certainly have a negative impact on traffic generated and parking difficulties already faced.
The application appears invalid as it includes 43 Pirie Street, but this does not seem to be supported by the description in the application form. If 43 Pirie Street was included then the impacts on that property should be also considered.
43 Pirie Street should be included (not just involved) because the Certificate of Title shows a Right of Way providing access to 43 Pirie Street - which is an important feature of the place and its relationship to the streetscape. The applicant's reports and plans indicate that the Right of Way will be removed and a fence installed along the frontage, preventing access. The current access (perhaps the remnants of a grand entrance) will be replaced with a communal garden.
If the application is found to be invalid, then a new application specifically for 43 and 43A would require review of the heritage controls relating to streetscape and place interpretation as well as the compatibility with the apartments' design elements in relation to Flint House.

If the application is found to be valid, then the proposal must be bound to consider the heritage controls that apply to Flint House. Council's Heritage Architect should be satisfied with the proposal for it to be approved.
The drawings show street tree plantings along Pirie Street, when sadly there are none. This is misleading information.
No objection to the proposal, consider it will only enhance the area.
Request that the Oak tree roots, which are causing a problem in pipelines and overhanging branches, be trimmed along the western boundary and the small sucker tree on the boundary fence be removed, along with tidying up the Ivy on the boundary fence.
The overshadowing, obscene lack of privacy and huge traffic safety and congestion issues, will negatively impact on house values every house on not only Roope and Pirie, but also Swanston and Park Streets and beyond (2)
Development should be positively enhance the community. This does nothing to enhance the community or suburb.

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 temporary accommodation for homeless persons. The proposed use Residential - Multiple dwellings. The existing use has existing use rights, predating the scheme. The proposed use 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 E6.0 Parking and Access Code

6.4.3 E7.0 Stormwater Management Code

6.4.4 E13.0 Historic Heritage Code

6.4.5 E5.0 Road and Railway Assets Code

6.5 The proposal relies on the following performance criteria to comply with the applicable standards:

6.5.1 Inner Residential Zone:

Building Envelope - Part D 11.4.2 P3
Private Open Space Location - Part D 11.4.3 P2
Privacy of balconies adjacent to a shared access - Part D 11.4.9 P1

6.5.2 Parking and Access Code:

Number of parking spaces - E 6.6.1 P1,
Design of vehicle access - E 6.7.2 P1,
Layout of parking area - E 6.7.5 P1

6.5.3 Historic Heritage Code:

Demolition and New Works on a Listed Place - E13.7.1 P1 E and 13.7.2 P1

6.6 Each performance criterion is assessed below.

6.7 Setback and Building Envelope Part D 11.4.2 P3

6.7.1 The acceptable solution at clause 11.4.2 A3 requires development to fit within a three dimensional building envelope.

6.7.1 The proposal includes a portion of the north eastern roof of the building that extends approximately 30cm above the building envelope and maximum 9.5 metre height provision, when taken from the existing ground level at the rear of the site. As well as a portion of the balustrading rear elevation of the westernmost dwelling, in its northwestern corner, where the boundary and the building are at their closest point.

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; 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 applicant's planning report indicates that the proposal is in fact inside the prescribed building envelope. However, it was confirmed after advertising the application that the proposal was in fact outside the envelope, to a small degree, in two areas as shown below. The applicant subsequently provided updated plans in line with the planning report, such that the building is contained within the building envelope (refer plans at Attachment C). Noting this was the applicant's intent from the outset, and that they have provided a design which demonstrates compliance can be achieved with a minor change to the design of the building, it is considered acceptable in this instance to condition that the proposal must be contained within the building envelope as prescribed by clause 11.4.2 A3. On that basis, the proposal would meet the acceptable solution, and assessment against the above performance criterion is not required.

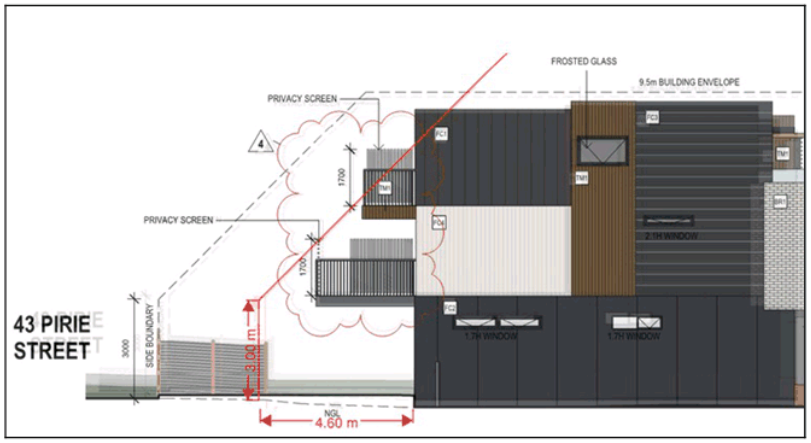


Figure 14: Showing the protrusion beyond the envelope at the north

western corner of the building.

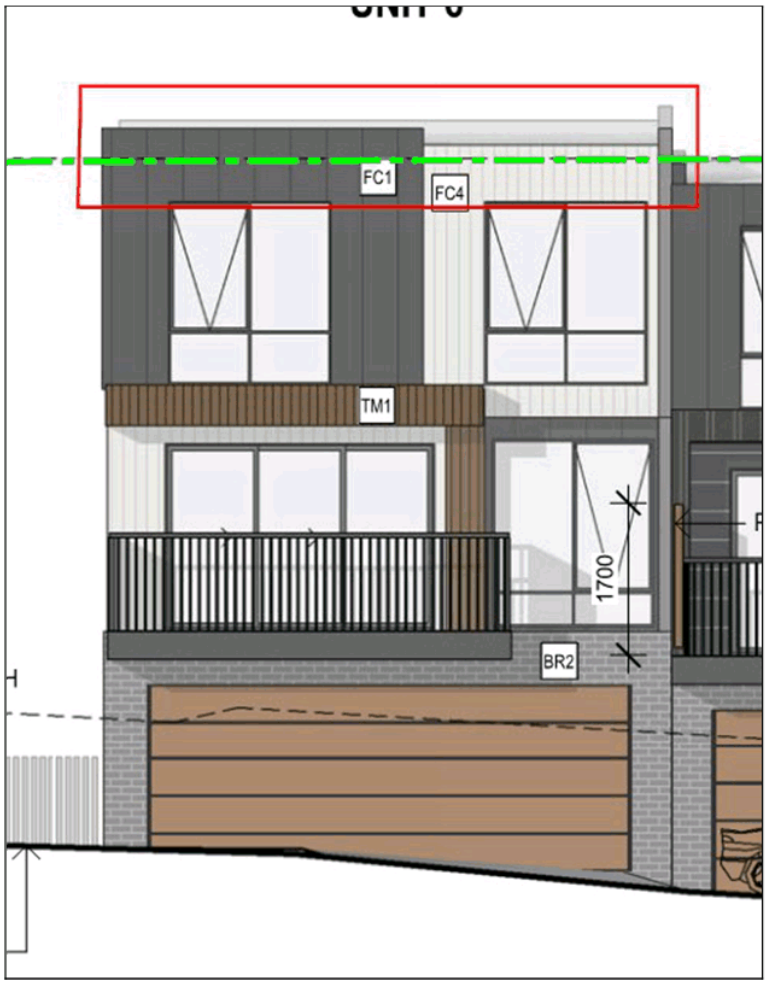


Figure 15: Showing the protrusion beyond the envelope at the north eastern corner of the building.

6.7.6 The proposal complies with the acceptable solution, subject to the abovementioned condition. The plans demonstrating compliance with this requirement are provided at Attachment C to this report.

6.8 Private Open Space location - 11.4.3 P2

6.8.1 The acceptable solution at clause 11.4.3 A2 requires a minimum of 24m2 private open space in one location and only located between the dwelling and the frontage if the frontage is orientated between 30 degrees east or west of true north.

6.8.2 The proposal includes private open space for the units located on the southern side of the multiple dwelling structures. The unit structure blocks sunlight of all but Unit 1, which is capable of receiving northern sun in the afternoon. The private open space areas for all other units are completely shaded for the whole of the day on 21st June.

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 11.4.3 P2 provides as follows:

A dwelling must have private open space that includes an area capable of serving as an extension of the dwelling for outdoor relaxation, dining, entertaining and children's play and is:

(a) conveniently located in relation to a living area of the dwelling; and
(b) orientated to take advantage of sunlight.

6.8.5 Previously, the Planning Scheme had a provision that allowed use of nearby public open space in consideration of the proposal suitability. This would have been slightly easier to support with the proposal to convert the existing driveway to Flint House to communal open space for the residents. However, with the introduction of the Interim Planning Directive 4 (IPD4), this clause was removed from the Planning Scheme; requiring the private open space to be conveniently located in relation to a living area of the dwelling and orientated to take advantage of the sun. The advertised plans showed the private open space as located on a 9m2 balcony on the northern side, accessed from the middle floor living space, with the main outdoor space (approximately 27m2) located on ground floor between the Pirie Street road frontage and a corridor and stair landing.

A number of representations were received, highlighting the number of bedrooms and limited area of private open space, questioning its suitability for such a high number of potential occupants. It is acknowledged that 27m2 with a 9m2 north facing balcony would appear insufficient for the projected needs of future residents. However, the Acceptable Solution for this clause only requires a minimum 24m2 without any reference to the number of potential occupants in a dwelling.

In response to the representations received, and to address the building envelope inconsistency described above, the applicant has provided

amended plans (refer Attachment C) that reduce the number of bedrooms by two, and increases the size of the first floor, north facing deck to each dwelling to 20sqm. As well, new 10sqm decks have been included on the second (top) floor with a sliding door off the newly proposed living space. In total, 30m2 private open space per unit is now proposed on their northern side.

While the change to the number of bedrooms is recognised, it should be noted that there is nothing in the planning scheme that requires the reduction, and planning approval would not be required to turn the dwellings back to five bedrooms.

Assessment of these new plans against the performance criteria, indicates that the amount of space off the main living area has a minimum width of 3 metres now. This would provide space for outdoor relaxation, dining and entertaining, conveniently located to living space. The area could also function as a small area for children's play, enabling supervision by adults in the living space. The upper floor balcony would also enable convenience outdoor relaxation and entertaining and potentially children's play.

It should be further clarified that the applicant planning report refers to 273m2 of private open space. However, this area is not considered to be private open space given the definition under the planning scheme, which is ".. an outdoor area of the land or dwelling for the exclusive use of the occupants of the land or dwelling". The Communal Garden area cannot be included in the assessment of private open space, because it is not for the exclusive use of each dwelling.

As such, a condition requiring the changes to the private open space is recommended.

6.8.6 The proposal complies with the performance criteria, subject to the abovementioned condition.

6.9 Privacy - Balconies - D 11.4.6 P1

6.9.1 The acceptable solution at clause 11.4.6 A1 requires 1.7m high privacy screening with a transparency of no less than 25% if a deck or balcony with a finished floor level higher than one (10 metre above existing ground level and is less than 6m from another dwelling on the same site.

6.9.2 The proposal includes rear balconies for the 6 units that are less than 6

metres from another dwelling on site and provided with screens, however the transparency is not confirmed to be less than 25%.

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 11.4.6 P1 provides as follows:

A balcony, deck, roof terrace, parking space or carport for a dwelling (whether freestanding or part of the dwelling) that has a finished surface or floor level more than 1m above existing ground level, must be screened, or otherwise designed, to minimise overlooking of:

(a) a dwelling on an adjoining property or its private open space; or

(b) another dwelling on the same site or its private open space.

6.9.5 As the balconies are provided with 1.7m high screens between each dwelling, it is considered a condition could be imposed to ensure that the transparency is no less than 25% to satisfactorily meet the performance criteria for this clause.

6.9.6 The proposal complies with the performance criterion.

6.10 Historic Heritage Code - Demolition on a Heritage Place - E 13.7.1 P1

6.10.1 There is no acceptable solution for 13.7.1.

6.10.2 The proposal includes demolition of a fence and portion of landscaping.

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 13.7.1 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.

6.10.5 The application was referred to Council's Cultural Heritage Officer, who advised the following;

Number 43 Pirie Street known as Flint House was built by Robert Nichol, cashier and teller at the Commercial Bank, in around 1850. The property is a large sandstone, Georgian house (painted) with a hipped roof, twelve pane windows and central front door with fanlight and side lights. It has later verandahs added at both levels, and glazed in. There is a semi-circular bay with full length windows on north eastern end. The brick addition at rear is not significant.

The Tasmanian Government purchased Flint House and converted it into the State's first Mothercraft Home in the 1920s. The building was subsequently extended to provide additional accommodation.

The Flint House estate is set over three lots 43A, 43 on which Flint House sits, and a smaller lot to the north east also known as 43. 43A contains established trees and plantings associated with Flint House, and an early right of way that leads to a landscaped turning circle directly centered with the front entrance to Flint House.

It must be noted that number 43 Pirie Street (title number 199999/1) is the only heritage listed land parcel, 43A is not a listed place in the Table E13.1 of The Heritage Code of HIPS 2015, and neither 43A or 43 are located within a Heritage Precinct. As such the heritage assessment under the planning scheme is limited to small portions of the proposal which fall within the boundary of 43 Pirie Street.

Assessment will include a small portion of front fencing along Roope Street, a new right of way accessed from Roope Street between 43A and 43, and an English Oak tree referred to as T4 in the provided arborists report that sits on the boundary of 43A and 43 Pirie Street.

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.

Demolition includes the removal of existing paling fence where the proposed new right of way is to be located, small areas of landscaping to be removed to allow for the surfacing of the proposed new right of way. The elements proposed for demolition are not considered significant heritage fabric or items, and the demolition component of the proposal will not result in a loss of significance to 43 Pirie Street. Performance Criteria 1 of E13.7.1 is considered satisfied.

6.10.6 The proposal complies with the performance criterion.

6.11 Historic Heritage Code - New Works on a Heritage Place - E 13.7.2 P1

6.11.1 There is no acceptable solution for 13.7.2.

6.11.2 The proposal includes works to connect the new Right of Way from Roope Street to the turning circle, proposed works close to an English Oak (T4) and a small portion of front fence along Roope Street proposed to be 1.5m high with 30% transparency.

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

6.11.4 The performance criteria at clause 13.7.2 P1 to P5 provide as follows:

P1 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.

P2 Development must be designed to be subservient and complementary to the place through characteristics including:
(a) scale and bulk, materials, built form and fenestration;
(b) setback from frontage;
(c) siting with respect to buildings, structures and listed elements;
(d) using less dominant materials and colours.

P3 Materials, built form and fenestration must respond to the dominant heritage characteristics of the place, but any new fabric should be readily identifiable as such.

P4 Extensions to existing buildings must not detract from the historic cultural heritage significance of the place.

P5 New front fences and gates must be sympathetic in design, (including height, form, scale and materials), to the style, period and characteristics of the building to which they belong.

P6 The removal of areas of landscaping between a dwelling and the street must not result in the loss of elements of landscaping that contribute to the historic cultural significance of the place.

6.11.5 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 provided drawings specify the proposed right of way is to be of a concrete construction, a permit condition has been applied for an exposed aggregate concrete finish, with a cream / sandstone colour finish. This condition is to ensure that the new right of way will not result in detriment to Flint House, the specified finishes in the attached condition are seen as complementary and compatible with the significant heritage features and characteristics of Flint House.

The landscaped turning circle associated with the entrance to Flint House is considered significant and must be retained. Drawing number DA02 (see fig.1) shows the proposed new driveway implementing the turning circle curve into the design, this must be achieved at construction stage in order to retain the turning circle's importance to the listed site. A condition of permit has been applied in relation to this.

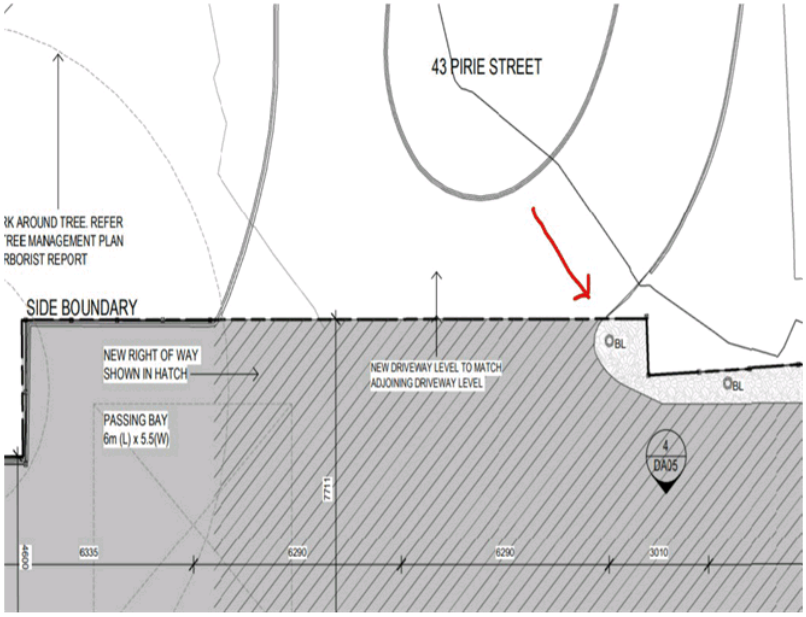


Figure 17: Heritage fabric affected (annotated clip from MinD, 2021).

In regards to the establish English Oak (T4) that is estimated to be 60+ years in age, the arborist's tree protection plan must be implemented and adhered to during the construction of the driveway and townhouses. A condition of permit has been applied to ensure the retention of the tree.

Subject to the conditions discussed above the proposed works are considered to satisfy Performance Criteria 1 of E13.7.2.

Performance Criteria 5
New front fences and gates must be sympathetic in design, (including height, form, scale and materials), to the style, period and characteristics of the building to which they belong.

There is a small amount of front fencing proposed within the boundary of 43 Pirie Street, the fencing is considered appropriate in scale and style and will not result in detriment the listed property Flint House. Performance Criteria 5 of E13.7.2 is considered satisfied.

Representation summaries:

There were 10 representations received during the advertising period – one in support of the proposal and 9 against. A number of representations cited heritage concerns; these have been summarised below.

- Consideration must be taken for the fact that this site will provide vehicle access not only to the proposed multiple dwellings but also the heritage property known as “Flint House”. The application it must at least be bound to consider the heritage controls that apply to Flint House.
- The illustrations of the proposal show a lack of sympathy/compatibility with the area & existing buildings, some heritage listed. The contrast is incongruous and grating.
- I am extremely concerned with the height and size of the proposed building, it should be set back and sloped downwards to look less overpowering and more sympathetic to the historic area.
- New Town is rich in heritage. While we are in full support of appropriate development, these three story high town houses are not at all in keeping with the aesthetics of its streets and homes, many of which are federation and heritage listed. The new proposed driveway will be within meters of one of Hobarts oldest heritage listed sites and something that should be acknowledged and praised, not overshadowed by a three story development.
- New Town is a suburb of historic and cultural significance, and that Pirie Street, dating back to 1804, is recognised as the oldest street in Hobart. There is a range of dwelling types in New Town, many of which are listed on the Tasmanian Heritage Register, but they are typically colonial houses (many of which are stately homes), or single storey, stand-alone brick houses built in the 1920s and 1930s, with sizeable gardens at the front

and back of the premises. There are very few, if any, terraced houses.
- With the increased appreciation of the unique historic and cultural value of our heritage, there is a corresponding realisation in the community that heritage buildings and heritage neighbourhoods should be safeguarded and managed as important heritage sites for future Tasmanians.
- The use of "standing seam and longline metal cladding, James Hardie easylap panel and timber look cladding, will give a modern appearance that will not easily fit into the heritage streetscape.

Discussion:
Representors raised valid concerns in relation to the impact the proposed development will have upon Flint House and the surrounding streetscape. It is anticipated that the proposal will impact Flint House and its surrounding heritage setting, however the heritage assessment must be undertaken in regards to the provisions of the planning scheme, which in this instance are limited only to CT 199999/1 (the lot containing Flint House) and the impact on heritage fabric by demolition and new works are minimal.

6.12.6 The proposal complies with the performance criterion.

6.12 Parking and Access Code - Number of parking spaces - E 6.6.1 P1

6.12.1 The acceptable solution at clause 6.6.1 requires compliance with parking ratios set out in Table 6.1 of that Code. Table 6.1 requires 2 parking spaces for multiple dwelling with 2 or more bedrooms and a visitor parking space per 4 dwellings.

6.12.2 The proposal includes two parking spaces per dwelling and one visitor parking space.

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 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.

6.12.5 The application was referred to Council's Development Engineer, who advised the following;

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.

Acceptable solution - A1:

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; - NON COMPLIANT

Multiple dwelling containing 2 or more bedrooms (including all rooms capable of being used as a bedroom) = Two (2x) for each dwelling, and One (1x) dedicated visitor parking per 4 dwellings

This development proposal shows 6 dwellings total, therefore requires;

12 dedicated resident car parking spaces - COMPLIANT
2 dedicated visitor car parking spaces - NON COMPLIANT (Deficient, -1)

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 empirical parking assessment indicates that the provision of 1 dedicated on-site visitor car parking space will sufficiently meet the likely demands associated with the development

(b) the availability of on-street and public car parking in the locality; - There is a readily available supply of on-street parking in the surrounding road network that would be available to meet the potential demands of visitor parking.

(c) the availability and frequency of public transport within a 400m walking distance of the site; - Metro Tasmania operate regular bus services along New Town Road which is within 400 metres (≈ <150m) off the subject site.

(d) the availability and likely use of other modes of transport; - The site is located a convenient walking distance from shops, schools and services.

(e) the availability and suitability of alternative arrangements for car parking provision; - No alternative parking provision is available, nor 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; - 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 (refer to Midson Traffic T.I.A received 26/3/2021), the parking provision may be accepted under Performance Criteria P1:E6.6.1 of the Planning Scheme. This is particularly due to the residential parking demands, deemed a priority during assessment, being met in their entirety.

6.12.6 The proposal complies with the performance criterion.

6.13 Parking and Access Code - Design of Vehicle Access - E 6.7.2 P1

6.13.1 The acceptable solution at clause 6.7.2 requires new accesses onto a public highway to achieve a sight distance triangle of 2m x 2.5m clear of obstructions to visibility.

6.13.2 The proposal includes fencing that will obstruct this sight distance triangle onto Roope Street.

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 6.7.2 P1 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.

6.13.5 The application was referred to Council's Development Engineer, who advised as follows;
The design of the vehicle access 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 E6.7.2 (a) [sight distance: 2m x 2.5m sight triangles - These areas to be kept clear of obstructions to visibility, and as such shall be assessed under Performance Criteria.

Submitted plans indicate (street-frontage left) 2m x 2.5m sight triangle areas abutting the driveway are not kept entirely clear of obstructions, due to existing fencing, and detailed encroachment.

Acceptable Solution - 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 - NON COMPLIANT

Performance Criteria - P1:
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; - Feasible
(b) avoidance of unreasonable interference with the flow of traffic on adjoining roads; - Feasible
(c) suitability for the type and volume of traffic likely to be generated by the use or development; - Feasible
(d) ease of accessibility and recognition for users. - Feasible

Based on the above assessment and given the submitted documentation, proposed sight triangles may be accepted under Performance Criteria P1:E6.7.2 of the Planning Scheme, given the proposed final accordance (<1.2m denoted) and available excess driveway width (>3m).

6.13.6 The proposal complies with the performance criterion.

6.14 Parking and Access Code - Layout of Parking Area - 6.7.5 P1

6.14.1 The acceptable solution at clause E 6.7.5 requires an apron width of at least 6 to 7 metres for parking bay.

6.14.2 The proposal includes a maximum 5.8m apron width incorporating the shared driveway.

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 clause 6.7.5 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.

6.14.5 The application was referred to Council's Development Engineer, who advised the following;

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): - Feasible
Car Parking Space Design Envelope (AS2890.1 Fig 5.2 300mm clearance on side): - Feasible
Headroom: (AS2890.1 Fig 5.3 = 2.2m clearance): - Feasible
Parking Space Gradient (5%): - Feasible
Aisle Width (AS2890.1 Fig 2.2 = 5.8m Class 1A): - Feasible
Garage Door Width & Apron (AS2890.1 Fig 5.4 = 2.4m wide = >7m wide apron): - Feasible, albeit <7m (5.81 minimum) available (reverse entry into parking space)
Parking Module Gradient (manoeuvring area 5% Acceptable Soln, 10% Performance): - Feasible
Driveway Gradient & Width (AS2890.1 Section 2.6 = 25% and 3m): - Feasible
Transitions (AS2890.1 Section 2.5.3 = 12.5% summit, 15% sag = >2m transition): - Feasible

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. - Feasible

6.14.6 The proposal complies with the performance criterion.

7. Discussion

7.1 Planning approval is sought for Demolition, Six Multiple Dwellings, Front Fencing, and Associated Works at 43A PIRIE STREET NEW TOWN TAS 7008.

7.2 The application was advertised and received ten (10) representations, nine of which opposed the proposal. The representations raised concerns including the height of the units, the provision of parking given the number of potential bedrooms, lack of private open space for the likely number of occupants, impact on streetscape and heritage values in the area, impact on on street parking in the area and overshadowing and loss of privacy.

The discretions of building envelope and overshadowing, lack of private open space have already been discussed. The proposal will be conditioned to meet the prescribed building envelope, in accordance with the applicant's planning report, and additional private open space will also be conditioned for. The reduction in

bedrooms is not proposed to be conditioned for, because there is no head of power in the planning scheme under which it can be justified.

Whilst a number of representations noted concerns with inadequate parking provision, the planning scheme only requires two parking spaces per dwelling, no matter how many bedrooms are proposed. The amount of parking would only be a concern if it was found that the units were not being used as single occupancies, but being rented out by the room, as a boarding house or communal dwelling. That requires a higher provision of parking of one (1) space per three (3) licensed residents and one for each staff member. However, Council is required to assess the proposal applied for and cannot anticipate an alternative. Bearing this in mind, the proposal meets the scheme standards for parking as a Multiple Dwelling and so the representations concerning inadequate street parking are not supported. Advice from Council's Traffic Engineer, indicated that Resident Parking Permits are not applicable for residents of development approved since 2015.

The question of the carrying capacity of the street network to sustain the additional traffic, was referred to Council's Development and Traffic Engineers. Site visits, and review of aerial and Google Streetview images back to 2007 do not show a clogged system in the vicinity. Certainly the roads are narrow and should two vehicles be parked haphazardly, there may be the potential for large vehicles to be unable to pass. Advice from Council Traffic Engineers notes that the road network has sufficient capacity to accommodate the increase in traffic likely to be generated by the proposal.

Therefore the representations relating to concerns over congestion and on street parking are not supported.

It should be noted that the proposed driveway and entrance onto Roope Street will be shared with any future use of Flint House. Enquiries regarding future proposals for Flint House were made to the applicants, who declined to answer, stating that was not part of the current proposal. Whilst this is strictly the case, it is considered a poor planning outcome to not consider the suitability of the new Right of Way to all beneficeries. Currently the wide sweeping driveway from Pirie Street allows for a variety of sized vehicles, should the use of Flint House be proposed to change to a more commercial use. The connection of the new right of Way to the circular driveway in front of Flint House is much tighter and should the proposed Right of Way be the sole and principal access for Flint House, two way traffic would be required. The angle of exit from the circular drive into the new driveway is very acute and may not support the sweep paths for some commercial vehicles. Because the application is for only residential use at present and within a residential zone, the consideration of suitability for commercial vehicles is noted, but cannot be a deciding factor in this proposal. It must be stated that unless

alternative access is provided should Flint house be proposed for a change to a commercial use, the proposed access alignment may preclude such approval.

Concerns over privacy were raised in a number of representations. The planning scheme requires consideration of privacy if there will be an unscreened deck or balcony within 3 metres of a side boundary and more than 1 metre above natural ground level. There are no decks, balconies or windows that apply to this proposal. Given this, the representations relating to privacy are not supported.

Most representations noted the massive scale of development in relation to surrounding heritage places and precincts. The subject lot is part of the original grounds of Flint House and contains the main entrance to the heritage place from Pirie Street. The Heritage Council listing and Council Heritage Place is solely for CT 199999/1, which is the lot containing the main structure of Flint House. No evidence can be found that the listing ever included CT 107319/1. The separate lot is first noted in the 1924 subdivision plan, creating residential lots in the area around Flint house. Its boundaries were resurveyed in 1993, to include the cut out around the circular drive. Given the existence of the trees on the subject site that are definitely within the heritage curtilage of Flint House it appears an oversight that excluded the subject site from the Heritage Listing. This was carried through the Heritage Place listing in the Planning Scheme.

As well, the subject site is excluded from the three heritage precincts in the area. It is unclear how this occurred also, as it has reduced the protective streetscape controls of an important Heritage street in the City's history. Pirie Street, being the original North road has a significant historical role in the city's development. Whilst it has diminished to a residential street, the heritage values should be protected. It is acknowledged that the building on site has no historical and limited aesthetic value, but the removal of the site from the streetscape precinct leaves it vulnerable to inappropriate development for surrounding properties, as is considered to be the case in this proposal. The Inner Residential zone permits a maximum height of 9.5m. Without some guiding force (like a Heritage Precinct) requiring consideration of the surrounding properties, developers have the right to maximise the development potential of a site, which can be to the detriment of the overall character and value of the heritage streetscape. Unfortunately however, this is not provided for the subject site. The applicant was requested to consider a reduction in height, to better fit into the street. However, because they have the right to build to 9.5m within the Building Envelope, they stated that they did not need to reduce the height of the proposal.

Figure 16: Surrounding Heritage Precincts (Geo Cortex, 2021)

Because the subject site is not within a Heritage Precinct or Heritage Place and the minor works within the Heritage Place of Flint House will not unreasonably impact on the heritage fabric of that property, representations relating to the heritage impact are not supported.

The applicants provided an Arborist report because one of the mature Oaks is proposed to be removed for the proposal. Council's Arborist, commended the retention of the remaining trees, stating, "the only way we will be able to retain and hopefully increase canopy cover on some of these narrow streets will be through tree retention and planting on private property. Street tree planting isn't always feasible on many of our smaller streets with narrow footpaths". One of the representations raised issues with maintenance of these trees, requesting they be pruned and a sucker removed. That representor was advised that overhanging limbs is a civil matter and not within the ambit of Council. The representor was advised to contact the landowner directly. That representation is not supported.

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, Cultural Heritage Officer, Traffic Engineer, Roads Engineer and Stormwater 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 Demolition, Six Multiple Dwellings, Front Fencing, and Associated Works at 43A PIRIE STREET NEW TOWN TAS 7008 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 Demolition, Six Multiple Dwellings, Front Fencing, and Associated Works at 43A PIRIE STREET NEW TOWN TAS 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-21-200 - 43A PIRIE STREET NEW TOWN TAS 7008 - 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 2021/00511-HCC dated 13/04/2021 as attached to the permit.

Reason for condition

To clarify the scope of the permit.

PLN 15a

A demolition waste management plan must be implemented throughout demolition. The demolition 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.

Advice:

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

PLN s1

The approved building must be contained within the building envelope prescribed by clause 11.4.2 A3 of the Hobart Interim Planning Scheme 2015 (version 38).

Revised plans must be submitted and approved as a Condition Endorsement, prior to the issue of any approval under the Building Act 2016, that clearly demonstrate compliance with the above requirement.

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

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

In accordance with the applicant's planning report

PLN s2

Each dwelling must be provided with a north facing deck at first floor level that is at least 20sqm in area, with a minimum horizontal dimension of 3m, and a north facing deck at second floor level that is at least 10sqm in area (except the westernmost unit which can have an 8sqm deck).

Prior to the issue of any approval under the Building Act 2016, excluding for demolition, revised plans must be submitted and approved as a Condition Endorsement, demonstrating compliance with the above.

All work required by this condition must be undertaken in accordance with the approved revised plans, prior to first occupation.

Advice:

- *The plans submitted to Council on 6 July are considered to satisfy the requirements of this condition.*
- *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 future occupants of the dwellings have an area of private open space that affords them a reasonable level of amenity

PLN s3

A landscape plan must be prepared for the soft and hard landscaping of the site, by a suitable qualified landscape designer/architect.

Prior to the issue of any approval under the Building Act 2016, a landscape plan must be submitted and approved as a Condition Endorsement, in accordance with the above requirement. The landscaping plan must include:

1. **Details of the landscaping of the front gardens of the dwellings, paying particular attention to the area within one metre of the road reservation.**
2. **Details of the landscaping (hard and soft) proposed within the communal garden area**
3. **The species and size at planting of each tree.**
4. **The location of footpaths, lighting and any proposed or existing underground infrastructure within the Communal garden.**
5. **A maintenance schedule sufficient to ensure the long term viability of the landscaping. The maintenance schedule must include provision for routine maintenance including irrigation servicing, pest control and replacement of failed plantings where necessary and appropriate.**

All landscaping must be planted and installed in accordance with the approved landscaping plan. Prior to occupancy, confirmation from the landscape designer/architect who prepared the approved landscaping plan (or another suitably qualified landscape designer/architect) that the all landscaping works required by this condition have been implemented, must be submitted to the satisfaction of the Directory City Planning.

Once planted and installed, the landscaping must be maintained in accordance with the maintenance schedule.

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 development provides landscaping of the site that will afford a reasonable level of amenity for the future occupants of the dwelling, and be complementary to the streetscape

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 driveways and 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.

ENG sw4

The new stormwater connection must be constructed and existing abandoned connections sealed by the Council at the owner's expense, prior to the first occupation.

Detailed engineering drawings must be submitted and approved as part of an application for a new stormwater connection, prior to the issuing of any approval under the *Building Act 2016* or commencement of works (which ever occurs first). The detailed engineering drawings must include:

1. **the location of the proposed connection; and**
2. **the size of the connection appropriate to satisfy the needs of the development.**

All work required by this condition must be undertaken in accordance with the approved detailed engineering drawings.

Advice:
The applicant is advised to submit detailed design drawings via a Council City

Amenity Division application for a new stormwater connection. If detailed design to satisfy this condition is submitted via the planning condition endorsement process there may be fees associated with the assessment, and once approved the applicant will still need to submit an application for a new stormwater connection with Council City Amenity Division.

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

Reason for condition

To ensure the site is drained adequately.

ENG sw6

All stormwater from the proposed development (including hardstand runoff) must be discharged to the Council's stormwater infrastructure with sufficient receiving capacity prior to first occupation. All costs associated with works required by this condition are to be met by the owner.

Design drawings and calculations of the proposed stormwater drainage and connections to the Council's stormwater infrastructure must be submitted and approved prior to the commencement of work. The design drawings and calculations must:

1. **prepared by a suitably qualified person; and**
2. **include long section(s)/levels and grades to the point of discharge.**

All work required by this condition must be undertaken in accordance with the approved design drawings and calculations.

Advice:
The applicant is advised to submit detailed design drawings and calculations as part of their Plumbing Permit Application. If detailed design to satisfy this condition is submitted via the planning condition endorsement process there may be fees associated with the assessment, and once approved the applicant will still need to obtain a plumbing permit for the works.

Reason for condition

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

SW 9

Prior to occupancy or the 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 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.**

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.

ENG 2a

Prior to first occupation or commencement of use (whichever occurs first), vehicular barriers compliant with the Australian Standard AS/NZS1170.1:2002 must be installed to prevent vehicles running off the edge of an access driveway or parking module (parking spaces, aisles and manoeuvring area) where the drop from the edge of the trafficable area to a lower level is 600mm or greater, and wheel stops (kerb) must be installed for drops between 150mm and 600mm. Barriers must not limit the width of the driveway access or parking and turning areas approved under the permit.

Advice:

- *The Council does not consider a slope greater than 1 in 4 to constitute a lower level as described in AS/NZS 2890.1:2004 Section 2.4.5.3. Slopes greater*

than 1 in 4 will require a vehicular barrier or wheel stop.

- *Designers are advised to consult the National Construction Code 2016 to determine if pedestrian handrails or safety barriers compliant with the NCC2016 are also required in the parking module this area may be considered as a path of access to a building.*

Reason for condition

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

ENG 2b

Prior to the issue of any approval under the *Building Act 2016* or the commencement of works on site (whichever occurs first), a certified vehicle barrier design (including site plan with proposed location(s) of installation) prepared by a suitably qualified engineer, compliant with Australian Standard AS/NZS1170.1:2002, must be submitted to Council as a Condition Endorsement.

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

ENG 2c

Prior to first occupation or commencement of use (whichever occurs first), vehicular barriers must be inspected by a qualified engineer and certification submitted to the Council confirming that the installed vehicular barriers comply with the certified design and Australian Standard AS/NZS1170.1:2002.

Advice:

- *Certification may be submitted to the Council as part of the Building Act 2016 approval process or via condition endorsement (see general advice on how to obtain condition endorsement).*

Reason for condition

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

ENG 3a

Prior to first occupation or commencement of use (whichever occurs first), the access driveway, circulation roadways, ramps, and parking module (parking spaces, aisles and, manoeuvring area) must be designed and constructed in accordance with Australian Standard AS/NZS2890.1:2004 (including the requirement for vehicle safety barriers where required), or a Council approved alternate design certified by a suitably qualified engineer to provide a safe and efficient access, and enable safe, easy and efficient use.

Advice:

- *It is advised that designers consider the detailed design of the access and parking module prior to finalising the Finished Floor Level (FFL) of the parking spaces (especially if located within a garage incorporated into the dwelling), as failure to do so may result in difficulty complying with this condition.*

Reason for condition

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

ENG 3b

The access driveway, circulation roadways, ramps, and parking module (parking spaces, aisles, and manoeuvring area) design must be submitted and approved as a Condition Endorsement, prior to the commencement of work, and issuing of any approval under the Building Act 2016.

The access driveway, circulation roadways, ramps, and parking module (parking spaces, aisles, and manoeuvring area) design must:

1. **Be prepared and certified by a suitably qualified engineer;**
2. **Be generally in accordance with the Australian Standards, AS/NZS2890.1:2004;**
3. **Where the design deviates from AS/NZS2890.1:2004, the designer must demonstrate that the design will provide a safe and efficient access, and enable safe, easy and efficient use;**
4. **Show dimensions, levels, gradients and transitions, and any other details as Council deem necessary to satisfy the above requirement;**

and

5. **Have a minimum vertically clear driveway width of 3 meters and provide sufficient headroom to comply with Section 5.3 of AS/NZS 2890.1:2004**

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 advised that designers consider the detailed design of the access and parking module prior to finalising the Finished Floor Level (FFL) of the parking spaces (especially if located within a garage incorporated into the dwelling), as failure to do so may result in difficulty complying with this condition.*
- *It is advised that designers consider the minimum vertical clearances (headroom) with respect to small and medium rigid vehicle classifications, as failure to do so may result in difficulty complying with this condition.*

Reason for condition

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

ENG 3c

The access driveway, circulation roadways, ramps, and parking module (parking spaces, aisles, and manoeuvring area) must be constructed in accordance with the design drawings approved by Condition ENG 3b.

Prior to first occupation or commencement of use (whichever occurs first), documentation by a suitably qualified engineer certifying that the access driveway and parking module has been constructed in accordance with the above drawings must be lodged with Council.

Advice:

- *Certification may be submitted to Council as part of the Building Act 2016 approval process or via condition endorsement (see general advice on how to obtain condition endorsement)*

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 access driveway, and parking module (parking spaces, aisles, and manoeuvring area) approved by this permit must be constructed to a sealed standard (spray seal, asphalt, concrete, pavers or equivalent Council approved) and surface 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 car parking spaces approved to be used on the site is Thirteen (13).

The approved visitor car parking space must be clearly sign marked as such.

Reason for condition

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

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 13

The frontage fencing for 43A Pirie Street must allow adequate sight distance between user vehicles, cyclists and pedestrians.

Reason for condition

To ensure the safety of vehicles entering and leaving the development and of pedestrians and traffic in the vicinity.

ENG r3

Prior to the commencement of use, the proposed driveway crossover on the Roope Street highway reservation must be designed and constructed in accordance with:

- **Urban - TSD-R09-v1 – Urban Roads Driveways and TSD R14-v3 Type Open wedge vehicular crossing.**

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 (ie 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 your 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 Road Services Engineer and may require further planning approvals. It is advised to place a note to this affect 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.

ENV 2

Sediment and erosion control measures, 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.

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.

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.

HER 9

A construction management plan must be prepared and contain protocols and recommendations for all contractors working in close proximity to the stone foundations along the boundary of 31 Pirie Street (Flint House) to be briefed on the heritage values of the heritage listed site and for the need to protect the structure whilst undertaking the proposed works to upgrade infrastructure.

Prior to the commencement of works (including demolition and excavation), all workers and managers must be briefed on the importance of the cultural heritage values of the site as part of a site induction. This must be undertaken by a suitably qualified heritage practitioner.

Prior to the issue of any approval under the Building Act 2016, the construction management plan must be submitted and approved as a Condition Endorsement in accordance with the above requirements. All works must be undertaken in accordance with the approved construction 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 that there is no loss or damage to the heritage values or significant fabric of the site.

HER 11

The turning circle at 43 Pirie Street must be retained and the curve to the right of way shown on drawing DA02 must be implemented.

Prior to the issue of any approval under the *Building Act 2016*, plans must be submitted and approved as a Condition Endorsement showing the retention of the turning in accordance with the above requirement.

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

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 development at a heritage place is undertaken in a sympathetic manner which does not cause loss of historic cultural heritage significance.

HER 17a

The works within the right of way off Roope Street must be constructed with an exposed aggregate finish and be of a cream / sandstone colour.

Prior to the issue of any approval under the *Building Act 2016*, revised plans must be submitted and approved as a Condition Endorsement showing the proposed right of way in accordance with the above requirement.

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

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 development at a heritage place is undertaken in a sympathetic manner which does not cause loss of historic cultural heritage significance.

HER 18

The English Oak Tree noted as T4 at 43 Pirie Street must be protected throughout excavation and post construction in accordance with the Arboricultural Impact Assessment and Tree Protection Specification report and in accordance with AS 4970-2009 Protection of Trees on Development Sites. All recommendations must be complied with.

Prior to the issue of any approval under the *Building Act 2016*, plans must be submitted and approved as a Condition Endorsement showing Tree Protection Zones and all recommendations in the above report.

Reason for condition

To ensure that significant trees on the adjoining and subject site are not unnecessarily

destroyed and are managed in a way that maintains their health and appearance.

SUB s1

The existing Right of Way burdening 43A Pirie Street, (CT 107319/1) in favour of 43 Pirie Street, (CT 199999/1) is to be extinguished and a new replacement Right of Carriageway is to be created to the satisfaction of the Council over the new concrete driveway that will provide access for both properties, prior to the first occupation of the Units on 43A Pirie Street.

Reason for condition

To ensure that the property at 43 Pirie Street will continue to have legal access via an unobstructed Right of Way through 43A Pirie Street.

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.

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.

STORM WATER

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.

REDUNDANT CROSSOVERS

Redundant crossovers are required to be reinstated under the Hobart City Council's Infrastructure By law. Click here for more information.

ACCESS

Designed in accordance with LGAT- IPWEA – Tasmanian standard drawings. Click here for more information.

CROSS OVER CONSTRUCTION

The construction of the crossover can be undertaken by the Council or by a private contractor, subject to Council approval of the design. Click here for more information.

STORM WATER / ROADS / ACCESS

Services to be designed and constructed in accordance with the (IPWEA) LGAT – standard drawings. 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.

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.

(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.

(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: 18 June 2021

Attachment(s):

Attachment B - CPC Agenda Documents

Attachment C - Revised Plans

Attachment D - Planning Referral Officer Cultural Heritage Report

Planning: #228250

Property

43A PIRIE STREET NEW TOWN TAS 7008

People

Applicant
*
JMG obo Tas Dream Pty Ltd
Matthew Clark
117 Harrington Street
HOBART TAS 7000
03 623 2555
infohbt@jmg.net.au

Owner
*

Angela Hermanis
25 Cheviot Road
WEST MOONAH TAS 7009
036231255
infohbt@jmg.net.au

Entered By
FRANCES BEASLEY
117 HARRINGTON STREET
HOBART TAS 7000
62312555
iboss@jmg.net.au

Use

Multiple dwellings

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)?
*

Residential

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

The proposal involves the development of 6 units involving the demolition of existing buildings and structures on the site, and the change of access from Pirie Street to Roope Street.

Estimated cost of development
*

2400000.00

Existing floor area (m2)	Proposed floor area (m2)	Site area (m2)

Carparking on Site

N/A

Total parking spaces	Existing parking spaces	Other (no selection chosen)
13	2	

Hours of Business

Are the proposed hours of business different from the existing? • No

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

	Existing From	Existing To	Proposed From	Proposed To
Monday to Friday				
Saturday				
Sunday				

Number of Employees

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

Proposed number of employees	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)	
Large	
Medium	
Small	

Outdoor storage / seating / number of beds

Is outdoor storage proposed? •

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 Schedule of Easements)
*
Appendix B - Titles.pdf

Plans (proposed, existing)
*
J203140PH-Appendix-C_Drawing-Set_Plans-&-Elevations_43a-Pirie-Street_NewTown.pdf

Supporting Documents

Concept Servicing Plan
J203140PH-Appendix-F_Concept-Services-Report_43a-Pirie-St_NewTown.pdf

Traffic Impact Assessment
J203140PH-Appendix-E_Traffic_Impact_Assessment_43a-Pirie-St_NewTown.pdf

Archaeological Report
J203140PH-Appendix-D_Arborist-Report_43a-Pirie-St_NewTown.pdf

Planning Report
J203140PH_PlanningReport_Multi-Dwellings_at_43a-Pirie-Street-Newtown_v3.1_24-Mar-2021.pdf

Engineers & Planners

117 Harrington Street
Hobart 7000
Phone (03) 6231 2555
Fax (03) 6231 1535
infohbt@jmg.net.au

49-51 Elizabeth Street
Launceston 7250
Phone (03) 6334 5548
Fax (03) 6331 2954
infoltn@jmg.net.au

Johnstone McGee & Gandy Pty Ltd
ABN 76 473 834 852
ACN 009 547 139
as trustee for Johnstone McGee & Gandy Unit Trust

www.jmg.net.au

JMG Ref: 203140PH

7 May 2021

B. Ikin

Senior Statutory Planner
City Planning Dept.
Hobart City Council
Via the City of Hobart Development Portal

Attention: Victoria Maxwell

Dear Ben,

43A PIRIE STREET & 43 PIRIE STREET, NEW TOWN & ADJACENT ROAD RESERVE DEMOLITION, SIX MULTIPLE DWELLINGS, FRONT FENCING, AND ASSOCIATED WORKS - APPLICATION NO. PLN-21-200

Please refer to the following with regards to the 'request for additional information letter' received from Hobart City Council, dated 26 March 2021.

The required additional information is addressed in sequence below.

1. PLANNING MATTERS

A) PLN Fi6 - DEVELOPMENT STANDARDS FOR BUILDINGS AND WORKS

The Hobart Interim Planning Scheme 2015 defines Private Open Space as "an outdoor area of the land or dwelling for the exclusive use of the occupants of the land or dwelling" (Clause 4.1.1). For the proposed development, each dwelling exceeds the minimum area of 40m^2 of private open space, with a combined area of between 42m^2 and 67m^2. Due to the orientation and topography of the site, a good proportion of the private open space is overshadowed. Therefore, the proposal relies on the Performance Criteria provisions of Clause 11.4.4 P1.

Although most of the private open space for each dwelling is on the Pirie Street side of the development, providing passive surveillance of the street, each dwelling has 9m^2 balcony on the northern side accessed from the living area. As demonstrated in the Site Shadow Diagrams on drawing DA07 within the Architectural Drawing Set, these balconies are not overshadowed by this development at any stage during the day. Therefore, it is considered that the proposal can satisfy the associated Performance Criteria (P1) which requires:

> "A multiple dwelling must be designed and sited to not cause an unreasonable loss of amenity by overshadowing the private open

space, of another dwelling on the same site, which is required to satisfy A2 or P2 of Clause 11.4.3 of this Planning Scheme".

As noted, the ground floor area of Private Open Space is largely overshadowed; however, a core area that will be regularly used by the residents is the Level 1 9m^2 balcony space, directly accessed from the living and dining area. Although the balcony space is also determined under the Performance Criteria P2 of Clause 11.4.3, pursuant to Clause 8.10.2 of the Scheme, and having regard to the Zone Purpose Statements, the proposed development provides a high standard of residential amenity and meets the Performance Criteria of Clause 11.4.4 P1.

Evidence that the design promotes a high standard of residential amenity is seen with the fact that each dwelling has private open space in the form of a balcony accessed off the living area and exposed to sun all day, plus the main area of private outdoor space activates the streetscape providing passive surveillance. In addition, the residential amenity of the dwellings is further enhanced by the inclusion of 276m^2 communal garden area that is not overshadowed by the development for most of the day, as confirmed in the Site Shadow Diagrams on drawing DA07. All this further adds to the amenity options for residents and helps to promote social inclusion plus a community feel within the multi dwelling complex.

The proposed development is therefore consistent with the Performance Criteria of Clause 11.4.4 P1 and meets the provisions of Clause 11.4.3 P2.

B) PLN Fi8 - CORRECT BUILDING ENVELOPE OUTLINE

The development has been designed for the Inner Residential Zone building envelope which, prior to the Ministers Directive PD.4 that came into effect on 22 February 2021, had a 3m setback from a secondary frontage. It was considered to keep the building design and not moving closer to the street, which the new provisions allowed, as this promoted a better relationship with the streetscape. Unfortunately, the building envelope had not been updated to reflect PD.4.

The Architectural Drawing Set has been updated so that the site boundary is within the building envelope, with the setback from the secondary front boundary facing Pirie Street (refer to the South East Elevation) being reduced from 3m to 2m, satisfying part (a) of the RFI Request. Please note this does not alter the setback of the structure.

As the proposed structures do not extend beyond the building envelope, part (b) of the RFI Request is not relevant.

2. PARKING AND ACCESS

A) PA 2.2 - VEHICULAR AND PEDESTRIAN SIGHT DISTANCES

As requested, Drawings have been provided within an updated version of the Concept Services Report in Attachment B, satisfying the request for further information in that the singular access complies 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*. This is due to the following:

(a) It has a minimum width of 3.6m which exceeds the requirements for a Category 1 driveway of a Class 1A parking facility onto a local street;
(b) The driveway will have less than 30 vehicle movements in a peak hour;
(c) The access location is not within the prohibited area shown in Figure 3.1 of AS2890.1;
(d) Sight distance at the access driveway for vehicles and pedestrians complies with the requirements of Figure 3.2 & 3.3 of AS2890.1;
(e) The gradient of the driveway is less than 20% and 2.5% across the footpath. Transitions to comply with the IPWEA standard drawing TSD-R09-v3.

Further to the above, the updated Concept Services Report (refer to Attachment B) provides a 'Driveway Turning Paths' drawing. Within this drawing, the blue triangles shown on either side of the newly established access off Roope Street demonstrate that sight lines 2.0m on either side of the vehicular accesses (e.g. driveway entrance) are in accordance with AS/NZS 2890.1:2004. Pedestrian sight lines are entirely within the subject property.

3. STORMWATER CODE

A) SW 5

Council require a report by a suitably qualified person demonstrating that the stormwater system for the new development incorporates Water Sensitive Urban Design principles for the treatment and disposal of stormwater.

Chapter 5 (Stormwater) of the Concept Services Report in Attachment B has been updated to identify Water Sensitive Urban Design principles for the treatment and disposal of stormwater.

The stormwater system incorporates Water Sensitive Urban Design principles as per the *Water Sensitive Urban Design Engineering Procedures for Stormwater Management in Southern Tasmania* with the inclusion of the bioretention swale along the north-eastern site boundary to accept runoff from the driveway. This is shown on the 'Proposed New Services Plan' in Appendix B of the Concept Services Report.

4. ROADS - DRIVEWAY

A) ENGr Fi 1 - Driveway to TSD

To ensure that the Council's road infrastructure is protected, the following documentation has been provided:

- detail of the vehicle crossing in the Roope Street road reservation;
- the long section of the driveway crossover shown within the Roope Street road reservation in accordance with TSD-R09-v3.

The 'Survey Plan' and the 'Driveway Turning Paths' drawings contained in the Concept Services Report (Attachment B) show detail of the vehicle crossing in the Roope Street road reservation.

The long section of the driveway crossover within the Roope Street road reservation is shown on the 'Driveway Long Section Plan and Height Envelopes' drawing in Appendix B of the Concept Services Report (Attachment B).

We trust this satisfies Council's request however if further information or clarification is required with respect to this request, please contact me on 6231 2555 or at gpriest@jmg.net.au.

Yours faithfully

JOHNSTONE McGEE & GANDY PTY LTD

GPriest

Gabrielle Priest
TOWN PLANNER

ATTACHMENT A

Architectural Drawing Set (updated)

PROPOSED 6 UNITS DEVELOPMENT

43A PIRIE STREET, NEW TOWN

ARCHITECTURAL & ENGINEERING DRAWING

DRAWINGS NO.	DRAWING NAME	REVISION
DA00	COVER	2
DA01	EXISTING & DEMOLITION PLAN	1
DA02	LEVEL GROUND	2
DA03	LEVEL1	2
DA04	LEVEL2	2
DA05	ELEVATIONS	2
DA06	ELEVATIONS	2
DA07	SHADOW DIAGRAMS	1
DA08	3D PERSPECTIVES AND MATERIALS	1

SITE INFORMATION	
TITLE REF	107319/1
PROPERTY ID	5682688
ZONING	INNER RESIDENTIAL
SITE AREA	1369 sq.m
DENSITY	6 / 1369 sq.m = 228 sq.m > 200 sq.m
SITE COVERAGE	520.621 sq.m / 1369sq.m = 38.03% <65%
LANDSCAPE AREA	334.90 sq.m / 1369sq.m

UNIT 1 & 6 (TYPE A)	
LEVEL GROUND	72.47 sq.m. (INC. EXTERNAL WALL)
LEVEL 1	70.04 sq.m. (INC. EXTERNAL WALL)
LEVEL 2	61.62 sq.m. (INC. EXTERNAL WALL)
TOTAL	**204.13 sq.m. (INC. EXTERNAL WALL)**
LEVEL 1 BALCONY	9.0 sq.m.
LEVEL 2 BALCONY	6.0 sq.m.
TOTAL	**15.0 sq.m.**
UNIT 2, 3, 4, 5 (TYPE B)	
LEVEL GROUND	72.07 sq.m. (INC. EXTERNAL WALL)
LEVEL 1	70.16 sq.m. (INC. EXTERNAL WALL)
LEVEL 2	61.14 sq.m. (INC. EXTERNAL WALL)
TOTAL	**203.30 sq.m. (INC. EXTERNAL WALL)**
LEVEL 1 BALCONY	9.0 sq.m.
LEVEL 2 BALCONY	5.0 sq.m.
TOTAL	14.0 sq.m.
GARDEN AREA UNIT 1	53.46 sq.m.
GARDEN AREA UNIT 2	30.21 sq.m.
GARDEN AREA UNIT 3	53.88 sq.m.
GARDEN AREA UNIT 4	53.46 sq.m.
GARDEN AREA UNIT 5	30.21 sq.m.
GARDEN AREA UNIT 6	54.76 sq.m.

SITE CONTEXT PLAN

VIEW FROM PIRIE STREET. ARTISTS IMPRESSION. SUBJECT TO CHANGE

ISSUE	REVISION	DRN	CHK APP	DATE
1	DEVELOPMENT APPLICATION	DA	DA	16/10/20
2	RESPONSE TO RFI	DA	DA	18/05/21

MinD. ARCHITECTS

REASON FOR ISSUE: DEVELOPMENT APPLICATION

PROJECT No.: 2056

PROJECT: PROPOSED 6 UNITS DEVELOPMENT

PROJECT ADDRESS: 43A PIRIE STREET, NEW TOWN

CLIENT: TAS DREAM

DRAWING TITLE: COVER

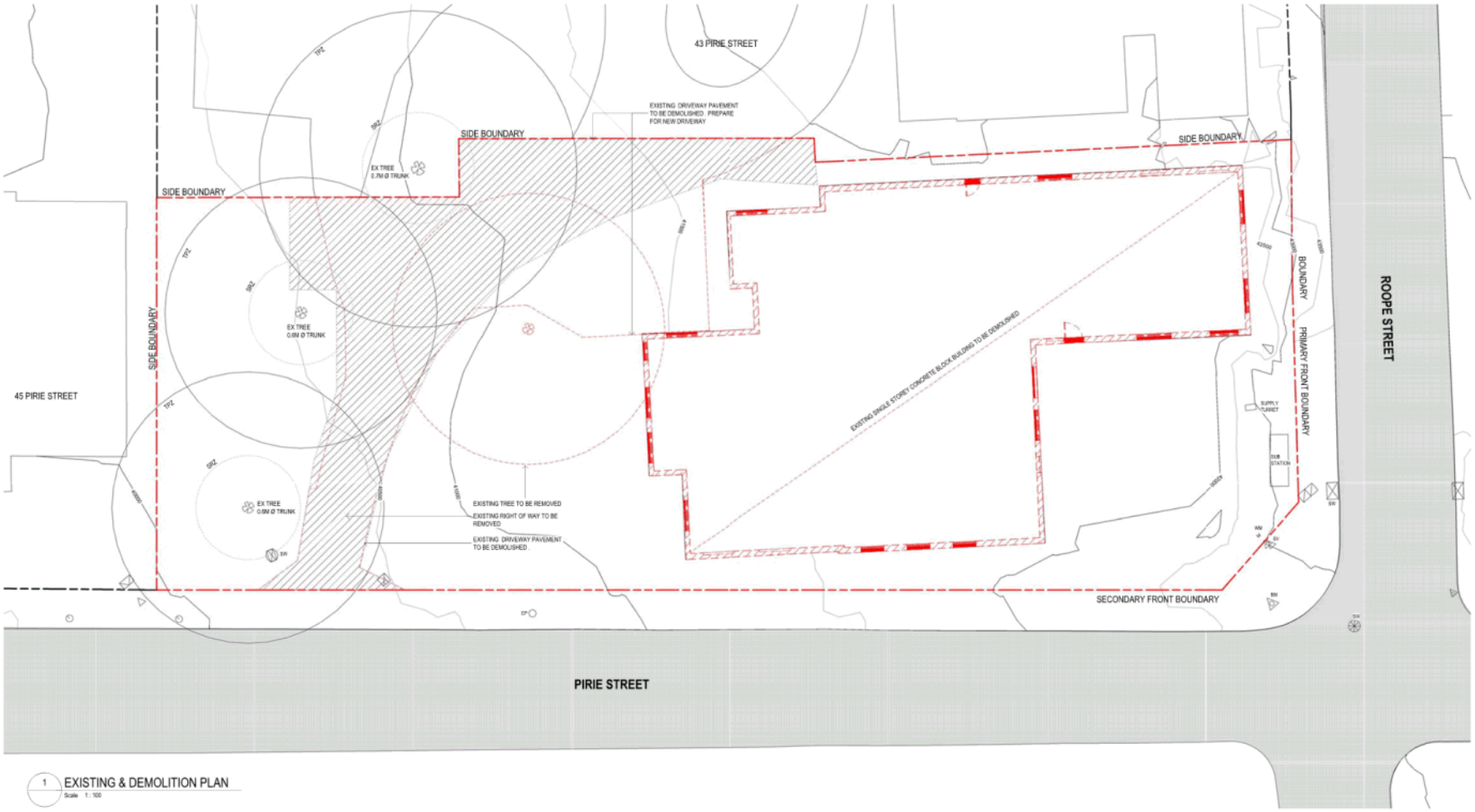
SCALE: 1 : 20 @ A1

PROJECT DATE: SEPT 2019

DRAWING No.: DA00

REVISION: 2

SK0021 13 DA.PT PM



1 EXISTING & DEMOLITION PLAN
Scale 1 : 100

ISSUE	REVISION	DRN	CHK / APP	DATE
1	DEVELOPMENT APPLICATION	JA	DA	10/05/20

MinD. ARCHITECTS

REASON FOR ISSUE: DEVELOPMENT APPLICATION

PROJECT No.: 2056

PROJECT: PROPOSED 6 UNITS DEVELOPMENT

PROJECT ADDRESS: 43A PIRIE STREET, NEW TOWN

CLIENT: TAS DREAM

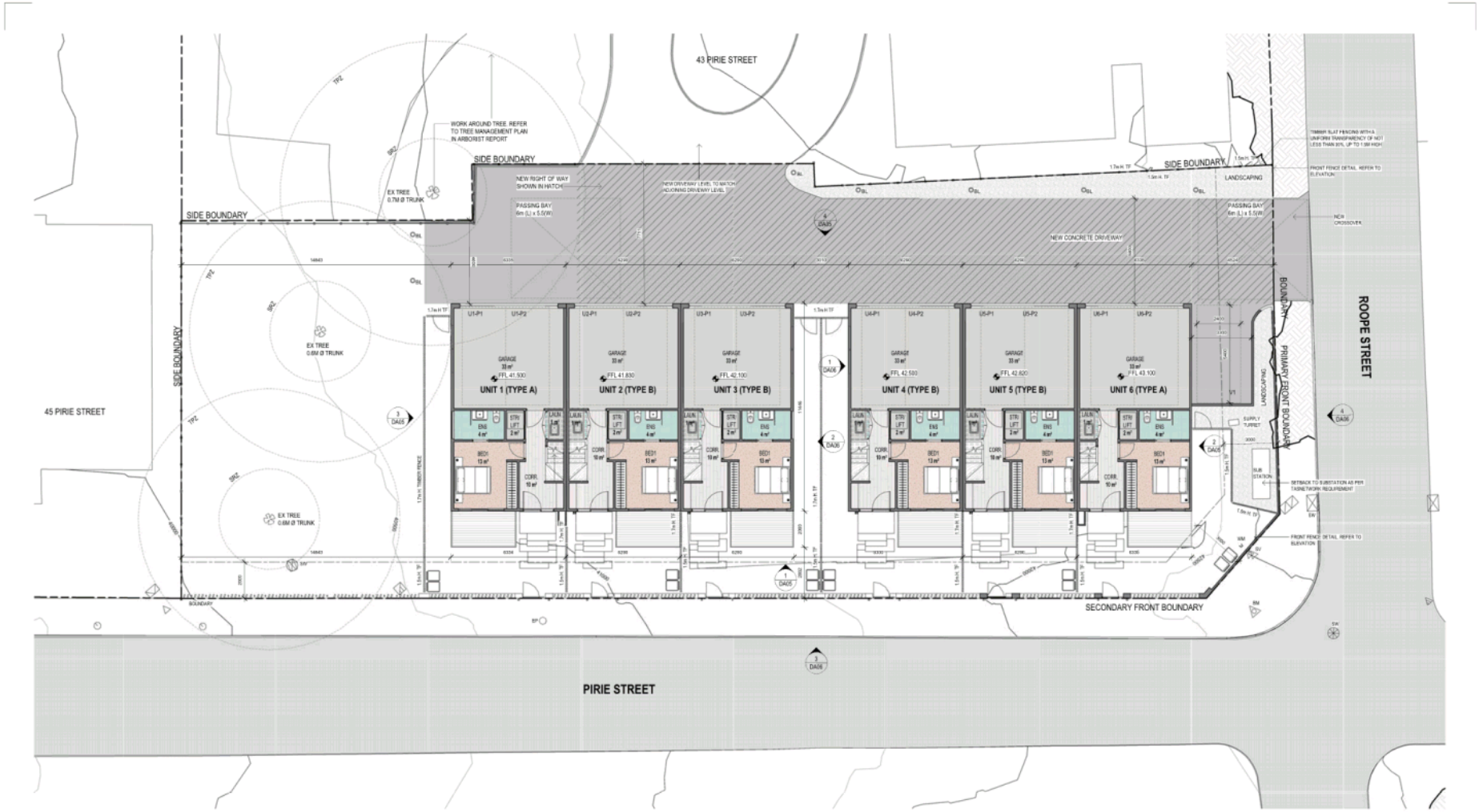
DRAWING TITLE: EXISTING & DEMOLITION PLAN

SCALE: 1 : 100 @ A1

PROJECT DATE: SEPT 2019

DRAWING No.: DA01

REVISION: 1



1 DA06 LEVEL GROUND
Scale 1 : 100

UNIT 1 & 6 (TYPE A)			
LEVEL GROUND -	72.47 SQ.M.	LEVEL 1 BALCONY -	9.0 SQ.M.
LEVEL 1 -	70.84 SQ.M.	LEVEL 2 BALCONY -	6.0 SQ.M.
LEVEL 2 -	61.82 SQ.M.	TOTAL -	15.0 SQ.M.
TOTAL -	204.13 SQ.M. (INC. EXTERNAL WALL)		

UNIT 2, 3, 4 & 5 (TYPE B)			
LEVEL GROUND -	72.87 SQ.M.	LEVEL 1 BALCONY -	9.0 SQ.M.
LEVEL 1 -	70.16 SQ.M.	LEVEL 2 BALCONY -	5.0 SQ.M.
LEVEL 2 -	61.14 SQ.M.	TOTAL -	14.0 SQ.M.
TOTAL -	203.39 SQ.M. (INC. EXTERNAL WALL)		

LEGEND:
EXISTING
NEW WORK
DEMOLITION
BL SOLAR BOLLARD LIGHT IN ACCORDANCE WITH SU 7.1-A1
POS ALL POS NOT STEEPER THAN 1:10
- ALL PARKING AREA MAX 5% FALL

ISSUE	REVISION	DRN	CHK / APP	DATE
1	DEVELOPMENT APPLICATION	DA	DA	16/05/2021
2	RESPONSE TO RFI	DA	DA	04/08/2021

MinD. ARCHITECTS
ARCHITECT: DAVID MAUTE AU
PHONE: [redacted]
EMAIL: [redacted]
WEBSITE: [redacted]

REASON FOR ISSUE: DEVELOPMENT APPLICATION
PROJECT No.: 2056
NORTH:
PROJECT: PROPOSED 6 UNITS DEVELOPMENT
PROJECT ADDRESS: 43A PIRIE STREET, NEW TOWN
CLIENT: TAS DREAM
DRAWING TITLE: LEVEL GROUND
SCALE: As indicated @ A1
PROJECT DATE: SEPT 2019
DRAWING No.: DA02
REVISION: 2
SHEET SIZE: A1

1 DA06 LEVEL 1
Scale 1 : 100

NOTE:

D 11.4.6

ALL PRIVACY SCREEN TO A HEIGHT OF AT LEAST 1.7M ABOVE THE FINISHED SURFACE OR FLOOR LEVEL, WITH A UNIFORM TRANSPARENCY OF NO MORE THAN 25%

UNIT 1 & 6 (TYPE A)

LEVEL GROUND -	72.47 SQ.M.	LEVEL 1 BALCONY - 9.0 SQ.M.
LEVEL 1 -	70.84 SQ.M.	LEVEL 2 BALCONY - 6.0 SQ.M.
LEVEL 2 -	61.82 SQ.M.	**TOTAL - 15.0 SQ.M.**
TOTAL -	**204.13 SQ.M. (INC. EXTERNAL WALL)**	

UNIT 2, 3, 4 & 5 (TYPE B)

LEVEL GROUND -	72.97 SQ.M.	LEVEL 1 BALCONY - 9.0 SQ.M.
LEVEL 1 -	70.16 SQ.M.	LEVEL 2 BALCONY - 5.0 SQ.M.
LEVEL 2 -	61.14 SQ.M.	**TOTAL - 14.0 SQ.M.**
TOTAL -	**203.39 SQ.M. (INC. EXTERNAL WALL)**	

LEGEND:
- EXISTING
- NEW WORK
- DEMOLITION
- BL SOLAR BOLLARD LIGHT IN ACCORDANCE WITH D5.7.7-A1
- POS ALL POS NOT STEEPER THAN 1:10
- ALL PARKING AREA MAX 5% FALL

ISSUE	REVISION	DRN	CHK / APP	DATE
1	DEVELOPMENT APPLICATION	DA	DA	16/05/2021
2	RESPONSE TO RFI	DA	DA	14/06/2021

MinD. ARCHITECTS

REASON FOR ISSUE: DEVELOPMENT APPLICATION

PROJECT No.: 2056

PROJECT: PROPOSED 6 UNITS DEVELOPMENT

PROJECT ADDRESS: 43A PIRIE STREET, NEW TOWN

CLIENT: TAS DREAM

DRAWING TITLE: LEVEL1

SCALE: As indicated @ A1

PROJECT DATE: SEPT 2019

DRAWING No.: DA03

REVISION: 2

1 DA06 LEVEL 2
Scale 1 : 100

UNIT 1 & 6 (TYPE A)			
LEVEL GROUND -	72.47 SQ.M.	LEVEL 1 BALCONY -	9.0 SQ.M.
LEVEL 1 -	70.84 SQ.M.	LEVEL 2 BALCONY -	6.0 SQ.M.
LEVEL 2 -	61.82 SQ.M.	TOTAL -	15.0 SQ.M.
TOTAL -	204.13 SQ.M. (INC. EXTERNAL WALL)		

UNIT 2, 3, 4 & 5 (TYPE B)			
LEVEL GROUND -	72.97 SQ.M.	LEVEL 1 BALCONY -	9.0 SQ.M.
LEVEL 1 -	70.16 SQ.M.	LEVEL 2 BALCONY -	5.0 SQ.M.
LEVEL 2 -	61.14 SQ.M.	TOTAL -	14.0 SQ.M.
TOTAL -	203.39 SQ.M. (INC. EXTERNAL WALL)		

LEGEND:
- EXISTING
- NEW WORK
- DEMOLITION
- BL SOLAR BOLLARD LIGHT IN ACCORDANCE WITH E6.7.7-A1
- POS ALL POS NOT STEEPER THAN 1:10
- ALL PARKING AREA MAX 5% FALL

ISSUE	REVISION	DRN	CHK / APP	DATE
1	DEVELOPMENT APPLICATION	DA	DA	16/05/22
2	RESPONSE TO RFI	DA	DA	14/06/22

MinD. ARCHITECTS
ARCHITECT [redacted] DAVID MAYES ADD
PHONE [redacted] 0419384481
EMAIL [redacted] DAVIDAUSTIN@GMAIL.COM
WEBSITE [redacted] MINDARCHITECTS.COM.AU

REASON FOR ISSUE: DEVELOPMENT APPLICATION
PROJECT No.: 2056
NORTH
PROJECT: PROPOSED 6 UNITS DEVELOPMENT
PROJECT ADDRESS: 43A PIRIE STREET, NEW TOWN
CLIENT: TAS DREAM
DRAWING TITLE: LEVEL2
SCALE: As indicated @ A1
PROJECT DATE: SEPT 2019
DRAWING No.: DA04
REVISION: 2
SHEET 12 of 28 PM

1 A13 SOUTH-WEST ELEVATION
Scale 1 : 100

2 A13 SOUTH-EAST ELEVATION 1
Scale 1 : 100

3 A13 NORTH-WEST ELEVATION 1
Scale 1 : 100

4 A13 NORTH-EAST ELEVATION
Scale 1 : 100

NOTE:

D 11.4.6

ALL PRIVACY SCREEN TO A HEIGHT OF AT LEAST 1.7M ABOVE THE FINISHED SURFACE OR FLOOR LEVEL, WITH A UNIFORM TRANSPARENCY OF NO MORE THAN 25%

MATERIAL LEGEND:

FC1 - JAMESHARDIE 400 AXON
FC2 - JAMESHARDIE EASYLAP PANEL
FC3 - JAMESHARDIE STRIA
FC5 - JAMESHARDIE 133 AXON
TM1 - TIMBER LOOKED CLADDING
MC1 - STANDING SEAM METAL CLADDING
MC2 - STANDING SEAM METAL CLADDING
MC3 - LONGLINE METAL CLADDING
BR1 - FACE BRICK TYPE 1
BR2 - FACE BRICK TYPE 1

ISSUE	REVISION	DRN	CHK / APP	DATE
1	DEVELOPMENT APPLICATION	DA	DA	16/05/2021
2	RESPONSE TO RFI	DA	DA	04/08/2021

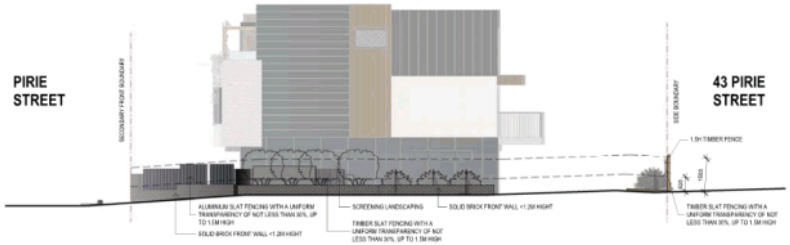
MinD. ARCHITECTS

REASON FOR ISSUE: DEVELOPMENT APPLICATION
PROJECT No.: 2056
PROJECT: PROPOSED 6 UNITS DEVELOPMENT
PROJECT ADDRESS: 43A PIRIE STREET, NEW TOWN
CLIENT: TAS DREAM
DRAWING TITLE: ELEVATIONS
SCALE: 1 : 100 @ A1
PROJECT DATE: SEPT 2019
DRAWING No.: DA05
REVISION: 2

1 A13 NORTH-WEST ELEVATION 2
Scale 1 : 100

2 A13 SOUTH-EAST ELEVATION 2
Scale 1 : 100

3 A13 FRONT FENCE ELEVATION - SOUTH-WEST
Scale 1 : 100



4 A13 FRONT FENCE ELEVATION - SOUTH-EAST
Scale 1 : 100

NOTE:

D 11.4.6

ALL PRIVACY SCREEN TO A HEIGHT OF AT LEAST 1.7M ABOVE THE FINISHED SURFACE OR FLOOR LEVEL, WITH A UNIFORM TRANSPARENCY OF NO MORE THAN 25%

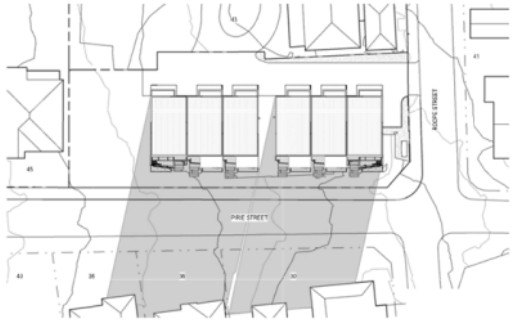
MATERIAL LEGEND:

FC1 - JAMESHARDIE 400 AXON	MC1 - STANDING SEAM METAL CLADDING
FC2 - JAMESHARDIE EASYLAP PANEL	MC2 - STANDING SEAM METAL CLADDING
FC3 - JAMESHARDIE STRIA	MC3 - LONGLINE METAL CLADDING
FC1 - JAMESHARDIE 133 AXON	BR1 - FACE BRICK TYPE 1
TM1 - TIMBER LOCKED CLADDING	BR2 - FACE BRICK TYPE 1

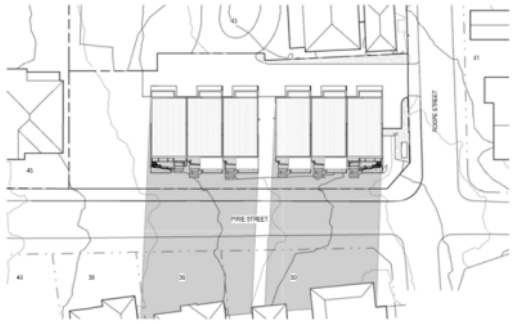
ISSUE	REVISION	DRN	CHK / APP	DATE
1	DEVELOPMENT APPLICATION	DA	DA	16/05/2021
2	RESPONSE TO RFI	DA	DA	04/08/2021

MinD. ARCHITECTS

REASON FOR ISSUE: DEVELOPMENT APPLICATION
PROJECT No.: 2056
PROJECT: PROPOSED 6 UNITS DEVELOPMENT
PROJECT ADDRESS: 43A PIRIE STREET, NEW TOWN
CLIENT: TAS DREAM
DRAWING TITLE: ELEVATIONS
SCALE: 1 : 100 @ A1
PROJECT DATE: SEPT 2019
DRAWING No.: DA06
REVISION: 2

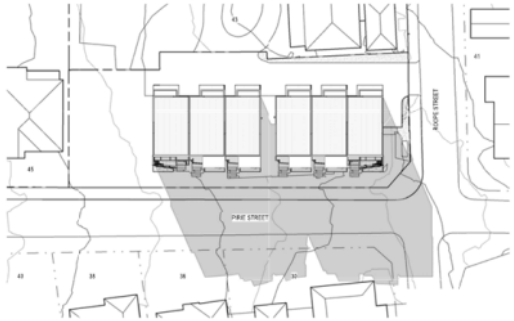


1 SITE_SHADOW DIAGRAM_0900AM
Scale 1 : 400



2 SITE_SHADOW DIAGRAM_1000AM
Scale 1 : 400

3 SITE_SHADOW DIAGRAM_1100AM
Scale 1 : 400



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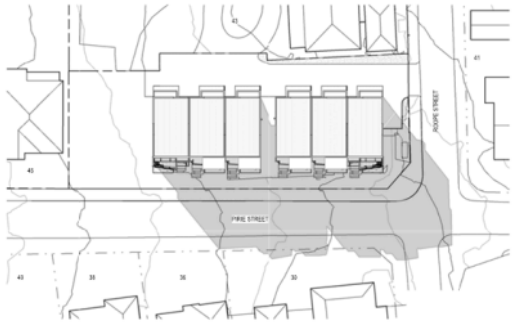
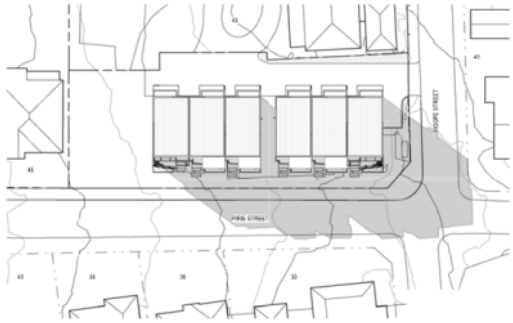
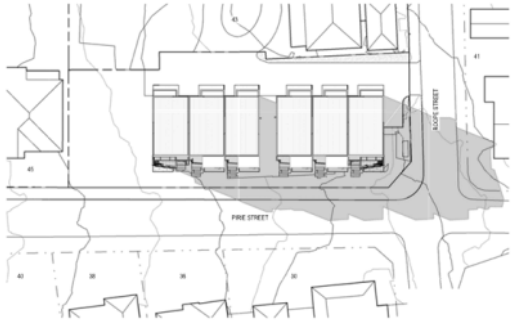


5 SITE_SHADOW DIAGRAM_0100PM
Scale 1 : 400



6 SITE_SHADOW DIAGRAM_0200PM
Scale 1 : 400



7 SITE_SHADOW DIAGRAM_0300PM
Scale 1 : 400

ISSUE	REVISION	DRN	CHK / APP	DATE
1	DEVELOPMENT APPLICATION	JA	JA	10/09/20

MinD. ARCHITECTS

REASON FOR ISSUE: DEVELOPMENT APPLICATION

PROJECT No.: 2056

NORTH

PROJECT: PROPOSED 6 UNITS DEVELOPMENT

PROJECT ADDRESS: 43A PIRIE STREET, NEW TOWN

CLIENT: TAS DREAM

DRAWING TITLE: SHADOW DIAGRAMS

SCALE: 1 : 400 @ A1

PROJECT DATE: SEPT 2019

DRAWING No.: DA07

REVISION: 1

METAL CLADDING
-VARIOUS PROFILES & COLOURS

METAL CLADDING
-VARIOUS PROFILES & COLOURS

TIMBER LOOKED CLADDING
-VARIOUS SHADES

TIMBER LOOKED CLADDING
-VARIOUS SHADES

FACE BRICK
-VARIOUS TYPES

FEATURE TIMBER SCREENING

FIBRE CEMENT CLADDING
-VARIOUS PROFILES & COLOURS

ALUMINIUM SLAT FENCING

VIEW FROM CORNER OF ROOPE STREET. ARTISTS IMPRESSION. MATERIAL SUBJECT TO FINAL SELECTION.

VIEW FROM CORNER OF PIRIE STREET. ARTISTS IMPRESSION. MATERIAL SUBJECT TO FINAL SELECTION.

VIEW FROM CORNER OF PIRIE STREET. ARTISTS IMPRESSION. MATERIAL SUBJECT TO FINAL SELECTION.

ISSUE	REVISION	DRN	CHK APP	DATE
	DEVELOPMENT APPLICATION			

21 JUNE

MinD. ARCHITECTS

REASON FOR ISSUE:
DEVELOPMENT APPLICATION

PROJECT No.:
2056

PROJECT:
PROPOSED 6 UNITS DEVELOPMENT

PROJECT ADDRESS:
43A PIRIE STREET, NEW TOWN

CLIENT:
TAS DREAM

DRAWING TITLE:
3D PERSPECTIVES AND MATERIALS

SCALE:
@ A1

PROJECT DATE:
SEPT 2019

DRAWING No.:
DA08

REVISION:
1

ATTACHMENT B

Concept Services Report

CONCEPT SERVICES REPORT

Residential Development
43A Pirie Street, New Town

March 2021

JMG
Engineers & Planners

Engineers & Planners

Johnstone McGee & Gandy Pty Ltd
ABN 76 473 834 852 ACN 009 547 139
www.jmg.net.au

HOBART OFFICE
117 Harrington Street
Hobart TAS 7000
Phone (03) 6231 2555
infohbt@jmg.net.au

LAUNCESTON OFFICE
49-51 Elizabeth Street
Launceston TAS 7250
Phone (03) 6334 5548
infoltn@jmg.net.au

Issuing Office: 117 Harrington Street, Hobart 7000
JMG Project No. J203140PH

Document Issue Status

Ver.	Issue Date	Description	Originator		Checked		Approved	
					Civil	Planning		
1		Issued for Client Review	HL		CJM			
2	19.03.2021	Issued for DA	HL		CJM		GLA	
3	05.05.2021	WSUD Details Updated	HL		CJM		GLA	

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TABLE OF CONTENTS

1 Introduction

This concept services report has been prepared in support of a development application to be lodged with Hobart City Council regarding the construction of a residential development at 43A Pirie Street, New Town, PID:5682688. The proposal involves the demolition of existing buildings and a new development comprising of 6, 5 bedroom, multi storey residential apartments.

The property has an area of 1370 m^2 and is located on the corner of Pirie and Roope Street, with a high point towards the eastern property boundary and falling towards west with grades of 3-9%. The property is covered with grasses and shrubs alongside some notably large trees towards the NW boundary. The existing building on the property has an approx. area of 460 m^2 and the existing hardstand within the boundary has an approx. area of 400 m^2. Both the building and hardstand are to be demolished as part of the proposed development.

The redevelopment is to be serviced with power, communications, water, sewer and stormwater connections all of which are to be installed as part of the development. This report addresses how each of these are to be provided to meet authority and planning scheme requirements.

Figure 1 - Site Locality Plan

2 Power, Lighting and Communications

2.1 Applicable Design Standards

- Electrical Infrastructure on the lot shall be designed in accordance with AS/NZS3000, Australian / New Zealand Wiring Rules.
- Lighting of common areas, where required, shall be provided to meet AS.NZS1158 .3.1 - 2020.
- Nation Broadband Network connections shall be provided to each unit and tenancy in accordance with the NBN standards "Residential preparation and installation: Single Dwelling Units (SDUs) and Multi Dwelling Units (MDUs)" (1).

2.2 Proposed System

Electrical supply to the lot is currently being provided by TasNetworks via an existing substation and turret that both reside within the 43A property boundary. This substation also services the adjacent property, 43 Pirie Street.

It is anticipated that TasNetworks will provide electrical supply to the lot through the reuse of the existing turret as part of the redevelopment. Internal mains will be run from this turret to switchboards to be located at each of the units.

Where required by the planning scheme lighting of common areas including the driveway and paths will be provided in accordance with the requirements of AS.NZS 1158.3.1, the electrical supply to the common area lighting shall be provided from a dedicated Common Area switchboard.

Existing NBN services are located at the back of the footpath on Pirie Street adjacent to the property boundary. A pit is located at the existing driveway crossover of the lot, servicing both 43A Pirie Street and 43 Pirie Street.

NBN connections will be provided from the property boundary to the MDU of each unit in accordance with NBN guidelines, "Residential preparation and installation: Single Dwelling Units (SDUs) and Multi Dwelling Units (MDUs)".

NBN designs shall be prepared in accordance with the NBN design standards using the NBN Assisted Drafting Tool (ADT) and be submitted to and approved by NBN prior to the commencement of installation.

3 Sanitary Drainage System

3.1 Applicable Design Standards

The sanitary drainage system for the site shall be designed to comply with AS 3500.2 National Plumbing and Drainage Code - Sanitary Plumbing and Sanitary Drainage and to TasWater Standards (4).

An existing TasWater DN150 sewer main runs through the neighbouring property 43 Pirie Street, with a manhole located near the centre of the property. An existing private sewer main servicing 43A Pirie Street runs along the NE property boundary and connects to the manhole aforementioned. This existing private sewer main is to be removed and reinstated with a new public sewer main to the lot boundary.

3.2 Proposed System

The existing private sewer main servicing the property, inside of the NE boundary, is to be removed and capped at the existing sewer branch located on 43 Pirie Street, such that the existing main servicing 43 Pirie Street is not impaired.

The property will be serviced by new internal sanitary drainage pipework to be designed following the approval of the development. This pipework will be connected to a new, public DN150 sewer connected to the existing TasWater manhole located in centre of the neighbouring property, 43 Pirie Street. This main will be located within a 2.5m wide TasWater services easement. The DN150 connection size complies with the minimum lot connection size required by TasWater and referenced on Standard Drawing MRWA-S-104A.

Proposed floor levels ensure that minimum grades of 1:60 can be achieved on all internal pipework connecting to the Lot connection point. DN100 branches are to be provided to service the plumbing for to each unit which will be designed following approval of the development.

Refer Appendix B for concept layouts of the proposed sanitary services for the development.

The TasWater supplement to the Sewerage Code of Australia has been used to estimate the flows sewerage flows from the development as follows:

Table 1: Residential Sewer Flow Calculations

	Value	Units
Number of Units (ET code: RA03)	6	No.
Equivalent Tenements	5.3	(-)
Average Dry Weather Flow	0.031	(L/s)
Peak Dry Weather Flow	0.399	(L/s)
Total Design Flow	0.533	(L/s)

Refer Appendix D for sewer flow calculations.

4 Water

4.1 Applicable Design Standards

The water reticulation system for the site shall be designed to comply with AS3500.1 National Plumbing and Drainage Code - Water Supply.

Water metering shall be provided in accordance with TasWater's Water Metering & Guidelines.

Sub-Metering shall be provided in accordance with TasWater's Southern Region Sub-Metering Policy.

Backflow Protection of the site shall be provided in accordance with TasWater's Water Boundary Backflow Containment Selection Guidelines.

Fire hydrant coverage of the site is to be provided in accordance with AS3500.1 and Table 8.8 of TasWater's Supplement to the Water Supply Code of Australia WSA-03 2011.

4.2 Proposed System

The existing water connection to the site, located in the southernmost corner of the property, is to be made redundant and capped at the property boundary. A new DN32 private water main connection will be installed towards the NW of the property boundary, connecting into the existing DN100 TasWater main that runs along the opposite side of Pirie Street to the 43A site boundary.

A Low Hazard DN32 Master water meter is to be provided inside of the property boundary with a non-testable dual check device installed immediately after the master water meter. The size of this connection is in accordance with TasWater Water Metering Guidelines Table 1. New water supply pipework installed in accordance with AS3500.1 shall be provided from the boundary master meter to each of the new Units.

7 additional sub meters are to be installed after the dual check devices to service and monitor individual water usage for all residential units and the communal garden in accordance with TasWater's Southern Region Sub-Metering Policy.

Existing fire hydrants are located on both Pirie Street and Roope Street on the opposing sides of the street to the lot. The location and abundance of these existing hydrants satisfies coverage requirements set out by AS2419.1 Section 3.5 'External Hydrants' such that no additional internal

hydrants are necessary as part of the development. Any additional changes to the Fire System and internal reticulation system are to be designed following development approval.

Refer Appendix B for Water Services Concept Drawings

The TasWater supplement to the MRWA Water Supply Code has been used to estimate the flows as follows:

Table 2: Residential Water Demand Calculations <100ET - AS3500.1-2003

	Value	Units
Number of Units (ET code: RA03)	6	(-)
Probable Simultaneous Demand	1.03	(L/s)

Refer Appendix D for Water Flow Calculations.

5 Stormwater

5.1 Applicable Planning Scheme Requirements

The applicable planning scheme is the *Hobart Interim Planning Scheme 2015*, with the applicable provisions provided by Code E7.0, Stormwater Management Code. The proposal has been assessed against the requirements of the scheme as detailed in section 5.3 (5).

5.2 Applicable Design Standards

The stormwater reticulation system for the site shall be designed to comply with AS3500.3 National Plumbing and Drainage Code - Stormwater Drainage.

5.3 Proposed Systems

The property currently discharges to the kerb and channel. As part of the development a new private stormwater main is to be installed with connections servicing all residential units and draining to the existing DN300 stormwater main on Pirie Street near the western corner of the lot. A new private stormwater main and grate is to be installed, connecting into the existing stormwater connection in the Northern corner of neighbouring 43 Pirie Street. A spoon drain collecting in a grated pit will run along the Northeast boundary to prevent overland flow from effecting neighbouring properties.

Refer Appendix B for Stormwater Services Concept Drawings.

5.3.1 Planning Scheme Requirements E7.7.1

A1 - Stormwater Disposal

The development meets the performance criteria P1:

The site will drain by gravity via the internal stormwater network and connect to the DN150 stormwater lot connection provided as part of the development.

A2 - Stormwater Quality and Quantity

The development meets the acceptable solution A2:

The stormwater system incorporates Water Sensitive Urban Design principles as per the *Water Sensitive Urban Design Engineering Procedures for Stormwater Management in Southern Tasmania*

with the inclusion of the bioretention swale along the north-eastern site boundary to accept run-off from the driveway.

A Model for Urban Stormwater Improvement Conceptualisation (MUSIC) was also created to determine the reduction in runoff pollutants from the road areas. This model also incorporates a litter basket within the new pits, Figure 2 indicates the treatment train achieves the targets outlined within the State Stormwater Strategy 2010.

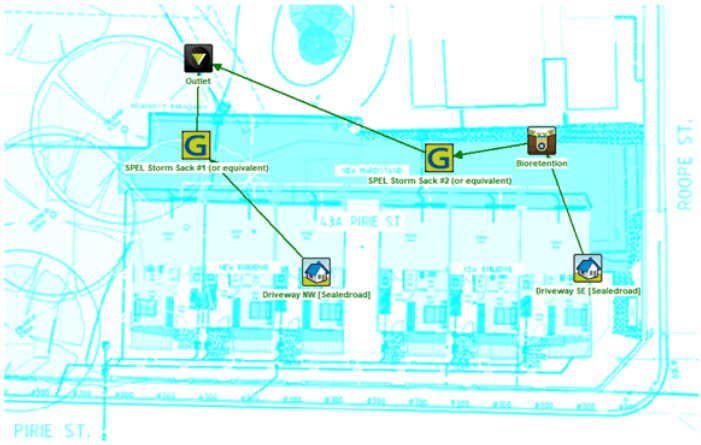


Figure 1 - MUSIC Schematic

	Sources	Residual Load	% Reduction
Flow (ML/yr)	0.171	0.162	5.6
Total Suspended Solids (kg/yr)	59.7	11.5	80.8
Total Phosphorus (kg/yr)	0.101	0.0252	75.1
Total Nitrogen (kg/yr)	0.411	0.223	45.7
Gross Pollutants (kg/yr)	6.6	3.77E-5	100

Figure 2 - MUSIC Results

A3 - Minor Stormwater Drainage System Design

The development is compliant with acceptable solution A3:

a) The internal stormwater network and associated public stormwater branch extension will be sized to accommodate the 5% AEP runoff from the property based on it being 100% impervious. Due to a proposed reduction in impervious area and thus, a reduction in peak flows, no additional detention is required.
b) As the estimated existing peak catchment flow is 0.0248m^3/s and the estimated new peak catchment flow is 0.0238m^3/s

A4 - Major Stormwater Drainage System Design

The development is compliant with acceptable solution A4:

The site external pavement levels and pathway connections to the front doors ensure surface water flows on the site drain away from the proposed buildings ensuring inundation of the proposed buildings does not occur in a 1% AEP storm event.

6 Access and Parking

6.1 Planning Scheme Requirements

The applicable planning scheme is the *Hobart Interim Planning Scheme 2015*; with the applicable provisions provided by E6 Parking and Access Code.

The proposal has been assessed against the requirements of the Parking and Access code in section 6.3.

6.2 Applicable Design Standards

Carparking for the site is to be designed in accordance with the requirements of AS/NZS 2890.1:2004 Off-Street Parking and AS/NZS 2890.6:2009 Off-street parking for people with disabilities.

6.3 Proposed Layout - Planning Scheme Requirements

6.3.1 E6.6 Use Standards

E6.6.1 - Number of carparking spaces

Refer Planning Report & TIA

E6.6.2 - Number of accessible carparking spaces

Refer Planning Report.

E6.6.3 - Number of motorcycle parking spaces

Refer Planning Report.

E6.6.4 - Number of bicycle parking spaces

Refer Planning Report.

6.3.2 E6.7 Development Standards

E6.7.1 Number of Vehicular Accesses

A1 - The acceptable solution A1 is met.

The site is provided with a singular vehicular access.

E6.7.2 Design of Vehicular Accesses

A1 - The acceptable solution A1 is met.

The singular access complies 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 in that:

(a) It has a minimum width of 3.6m with exceeds the requirements for a Category 1 driveway of a Class 1A parking facility onto a local street.
(b) The driveway will have less than 30 vehicle movements in a peak hour.
(c) The access location is not within the prohibited area shown in Figure 3.1 of AS2890.1.
(d) Sight distance at the access driveway for vehicles and pedestrians complies with the requirements of Figure 3.2 & 3.3 of AS2890.1.
(e) The gradient of the driveway is less than 20% and 2.5% across the footpath. Transitions to comply with the IPWEA standard drawing TSD-R09-v3.

E6.7.3 Vehicular Passing Areas Along an Access

Refer TIA Report.

E6.7.4 On-Site Turning

Refer TIA Report.

E6.7.5 Layout of Parking Areas

Refer TIA Report.

E6.7.6 Surface Treatment of Parking Areas

A1 - The acceptable solution A1 is met.

The driveways and parking areas are to be constructed from reinforced concrete or asphalt. The carparks are located within the basement floor and therefore do not contribute to stormwater runoff. A stormwater pit in the lowest corner of the driveway will allow the drainage of any water to the properties stormwater connection. Refer Appendix B - concept services plan.

E6.7.7 Lighting of Parking Areas

A1 - The acceptable solution A1 is met.

Carpark lighting will be provided in accordance with 3.1 "Basis of Design" as well as 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.

E6.7.8 Landscaping of Parking Areas

P1 - The development meets the performance criteria P1:

a) The internal carpark will have minimal visual impact on the streetscape other than the entryway.
b) Enclosed parking areas has no amenity impact on neighbouring properties and the streetscape.
c) Enclosed parking areas are private, secure and can be actively protected via garage doors, etc.

E6.7.9 Design of Motorcycle Parking Areas

A1 - The acceptable solution A1 is met.

Motorcycle Carparking spaces are not required.

E6.7.10 Design of Bicycle Parking Areas

A1 - The acceptable solution A1 is met.

Bicycle Carparking spaces are not required.

E6.7.11 Bicycle End of Trip Facilities

A1 - The acceptable solution A1 is met.

Bicycle Carparking spaces are not required.

E6.7.12 Siting of Car Parking

A1 - The acceptable solution A1 is met.

The carpark is located behind the proposed building line of the development.

E6.7.13 Facilities for Commercial Vehicles

A1 - The acceptable solution A1 is met.

As a residential development, it is anticipated that commercial off-street development is not required.

E6.7.14 Access to a Road

A1 - The acceptable solution A1 is met.

8 References

1. Preparation and Installation Guide for-SDUS and MDUS. [Online] https://www.nbnco.com.au/content/dam/nbnco2/2018/documents/NewDevs/preparation-and-installation-guide-for-sdus-and-mdus.pdf.

2. Installing Pit and Conduit Infrastructure. [Online] https://www.nbnco.com.au/content/dam/nbnco/documents/installing-pit-and-conduit-infrastructure.pdf.

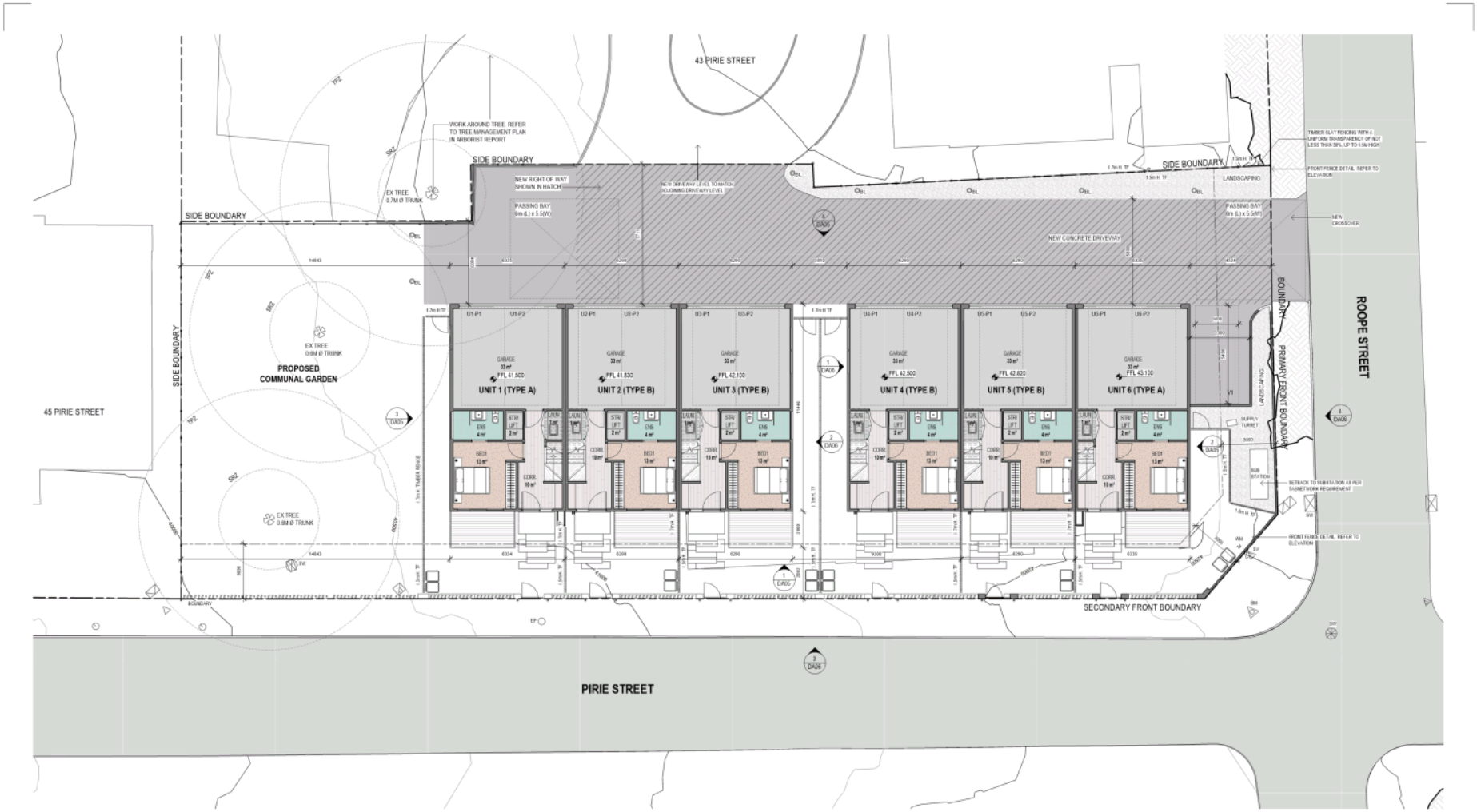
3. Pit and Pipe Design Guide. [Online] https://www.nbnco.com.au/content/dam/nbnco2/2018/documents/NewDevs/pit-and-pipe-design-guide.pdf.

4. Development Technical Standards. [Online] https://www.taswater.com.au/Development/Technical-Standards.

5. Planning Scheme (iplan). [Online] https://iplan.tas.gov.au/Pages/XC.Home/Default.aspx?hid=95613.

APPENDIX A

Survey Plan



1 DA06 LEVEL GROUND
Scale 1 : 100

UNIT 1 & 6 (TYPE A)			
LEVEL GROUND -	72.47 SQ.M.	LEVEL 1 BALCONY -	9.0 SQ.M.
LEVEL 1 -	70.04 SQ.M.	LEVEL 2 BALCONY -	6.8 SQ.M.
LEVEL 2 -	61.62 SQ.M.	TOTAL -	15.8 SQ.M.
TOTAL -	204.13 SQ.M. (INC. EXTERNAL WALL)		

UNIT 2, 3, 4 & 5 (TYPE B)			
LEVEL GROUND -	72.07 SQ.M.	LEVEL 1 BALCONY -	9.0 SQ.M.
LEVEL 1 -	70.16 SQ.M.	LEVEL 2 BALCONY -	5.8 SQ.M.
LEVEL 2 -	61.14 SQ.M.	TOTAL -	14.8 SQ.M.
TOTAL -	203.38 SQ.M. (INC. EXTERNAL WALL)		

LEGEND:
- EXISTING
- NEW WORK
- DEMOLITION
- SOLAR BOLLARD LIGHT IN ACCORDANCE WITH BS 7.6.A1
- POS: ALL POS NOT STEEPER THAN 1:10
- ALL PARKING AREA MAX 5% FALL

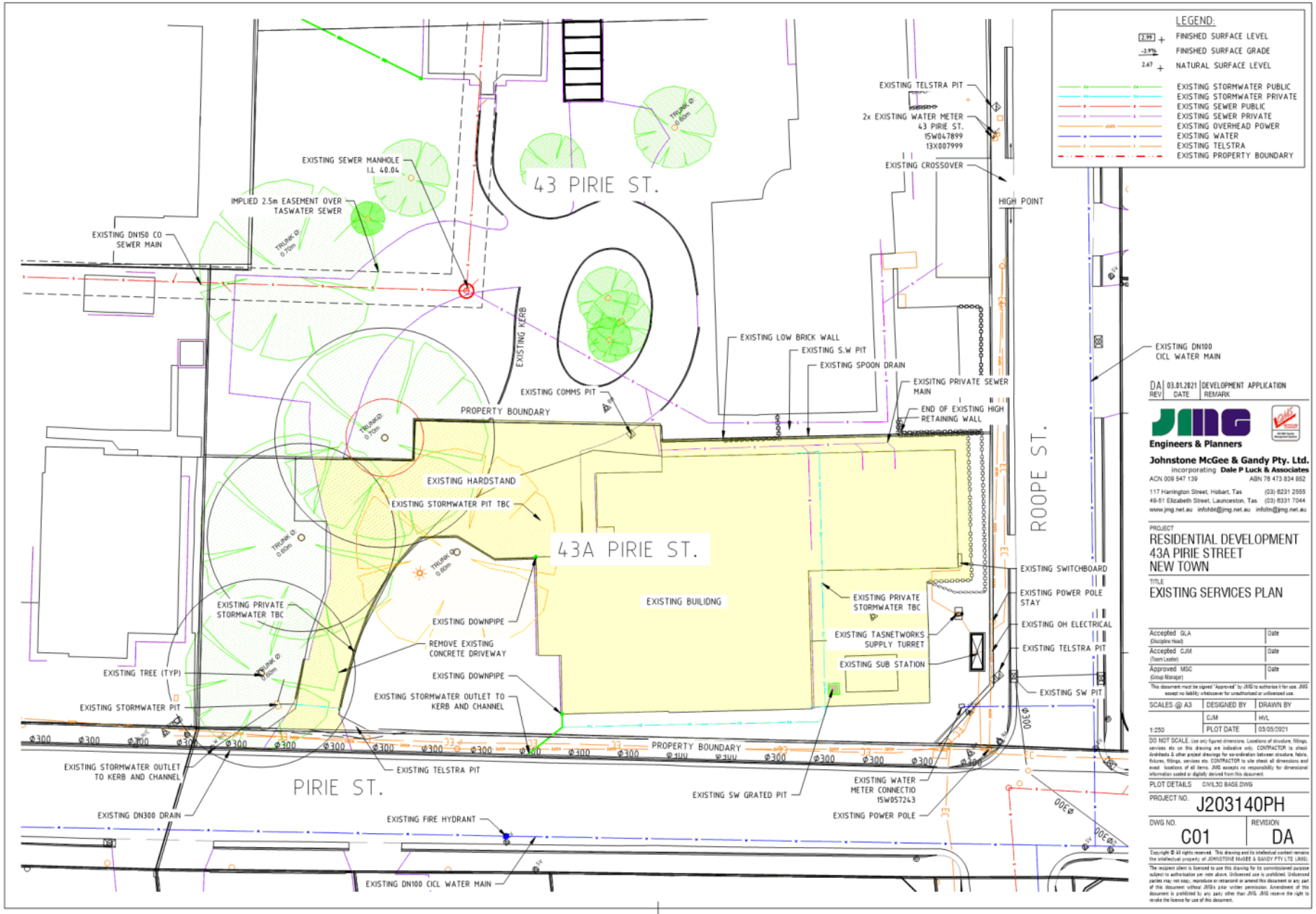
ISSUE	REVISION	BRW	CHK / APP	ISSUED
1	DEVELOPMENT APPLICATION	BR	BW	03/02/2021

MinD. ARCHITECTS

REASON FOR ISSUE: DEVELOPMENT APPLICATION
PROJECT No.: 2056
NORTH
PROJECT: PROPOSED 6 UNITS DEVELOPMENT
PROJECT ADDRESS: 43A PIRIE STREET, NEW TOWN
CLIENT: TAS DREAM
DRAWING TITLE: LEVEL GROUND
SCALE: As indicated @ A1
PROJECT DATE: SEPT 2019
DRAWING No.: DA02
REVISION: 1
3/12/2021 5:36:08 PM

APPENDIX B

Unit Development Concept Civilworks Plans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FINISHED SURFACE LEVEL
FINISHED SURFACE GRADE
NATURAL SURFACE LEVEL
EXISTING STORMWATER PUBLIC
EXISTING STORMWATER PRIVATE
EXISTING SEWER PUBLIC
EXISTING SEWER PRIVATE
EXISTING OVERHEAD POWER
EXISTING WATER
EXISTING TELSTRA
EXISTING PROPERTY BOUNDARY
43 PIRIE ST.
43A PIRIE ST.
PIRIE ST.
ROOPE ST.
EXISTING BUILDING
EXISTING TELSTRA PIT
2x EXISTING WATER METER
43 PIRIE ST.
15W047899
13X007999
EXISTING CROSSOVER
HIGH POINT
EXISTING SEWER MANHOLE
I.L. 40.04
IMPLIED 2.5m EASEMENT OVER
TASWATER SEWER
EXISTING DN150 CO
SEWER MAIN
EXISTING KERB
EXISTING LOW BRICK WALL
EXISTING S.W PIT
EXISTING SPOON DRAIN
EXISITNG PRIVATE SEWER
MAIN
END OF EXISTING HIGH
RETAINING WALL
EXISTING DN100
CICL WATER MAIN
EXISTING COMMS PIT
PROPERTY BOUNDARY
EXISTING HARDSTAND
EXISTING STORMWATER PIT TBC
EXISTING PRIVATE
STORMWATER TBC
EXISTING DOWNPIPE
REMOVE EXISTING
CONCRETE DRIVEWAY
EXISTING TREE (TYP)
EXISTING STORMWATER PIT
EXISTING DOWNPIPE
EXISTING STORMWATER OUTLET TO
KERB AND CHANNEL
EXISTING STORMWATER OUTLET
TO KERB AND CHANNEL
EXISTING TELSTRA PIT
EXISTING DN300 DRAIN
EXISTING FIRE HYDRANT
EXISTING DN100 CICL WATER MAIN
EXISTING SW GRATED PIT
EXISTING WATER
METER CONNECTIO
15W057243
EXISTING POWER POLE
EXISTING SWITCHBOARD
EXISTING POWER POLE
STAY
EXISTING OH ELECTRICAL
EXISTING TELSTRA PIT
EXISTING SW PIT
EXISTING PRIVATE
STORMWATER TBC
EXISTING TASNETWORKS
SUPPLY TURRET
EXISTING SUB STATION
DA 03.01.2021 DEVELOPMENT APPLICATION
REV DATE REMARK
Engineers & Planners
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incorporating Dale P Luck & Associates
ACN 009 547 139 ABN 78 473 834 852
117 Harrington Street, Hobart, Tas (03) 6231 2555
49-51 Elizabeth Street, Launceston, Tas (03) 6331 7044
www.jmg.net.au infohbt@jmg.net.au infoltn@jmg.net.au
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Approved MGC (Group Manager) Date
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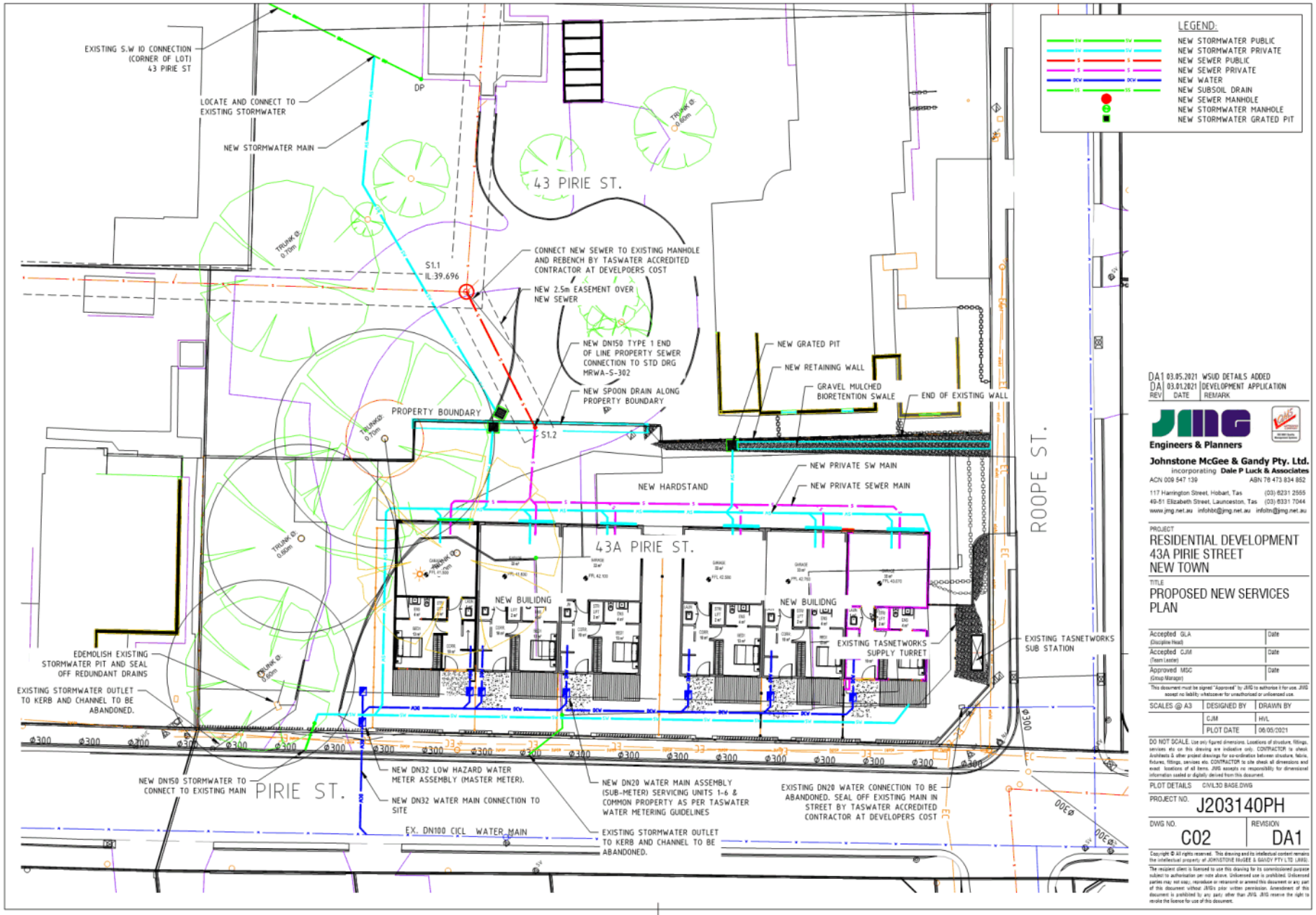
EXISTING S.W IO CONNECTION (CORNER OF LOT) 43 PIRIE ST
LOCATE AND CONNECT TO EXISTING STORMWATER
NEW STORMWATER MAIN
DP
43 PIRIE ST.
CONNECT NEW SEWER TO EXISTING MANHOLE AND REBENCH BY TASWATER ACCREDITED CONTRACTOR AT DEVELPOERS COST
S1.1 IL:39.696
NEW 2.5m EASEMENT OVER NEW SEWER
NEW DN150 TYPE 1 END OF LINE PROPERTY SEWER CONNECTION TO STD DRG MRWA-S-302
NEW SPOON DRAIN ALONG PROPERTY BOUNDARY
PROPERTY BOUNDARY
S1.2
NEW GRATED PIT
NEW RETAINING WALL
GRAVEL MULCHED BIORETENTION SWALE
END OF EXISTING WALL
NEW HARDSTAND
NEW PRIVATE SW MAIN
NEW PRIVATE SEWER MAIN
43A PIRIE ST.
NEW BUILIDNG
NEW BUILIDNG
EXISTING TASNETWORKS SUPPLY TURRET
EXISTING TASNETWORKS SUB STATION
ROOPE ST.
EDEMOLISH EXISTING STORMWATER PIT AND SEAL OFF REDUNDANT DRAINS
EXISTING STORMWATER OUTLET TO KERB AND CHANNEL TO BE ABANDONED.
NEW DN150 STORMWATER TO CONNECT TO EXISTING MAIN
PIRIE ST.
NEW DN32 LOW HAZARD WATER METER ASSEMBLY (MASTER METER).
NEW DN32 WATER MAIN CONNECTION TO SITE
EX. DN100 CICL WATER MAIN
NEW DN20 WATER MAIN ASSEMBLY (SUB-METER) SERVICING UNITS 1-6 & COMMON PROPERTY AS PER TASWATER WATER METERING GUIDELINES
EXISTING STORMWATER OUTLET TO KERB AND CHANNEL TO BE ABANDONED.
EXISTING DN20 WATER CONNECTION TO BE ABANDONED. SEAL OFF EXISTING MAIN IN STREET BY TASWATER ACCREDITED CONTRACTOR AT DEVELOPERS COST
LEGEND:
NEW STORMWATER PUBLIC
NEW STORMWATER PRIVATE
NEW SEWER PUBLIC
NEW SEWER PRIVATE
NEW WATER
NEW SUBSOIL DRAIN
NEW SEWER MANHOLE
NEW STORMWATER MANHOLE
NEW STORMWATER GRATED PIT
DA1 03.05.2021 WSUD DETAILS ADDED
DA 03.01.2021 DEVELOPMENT APPLICATION
REV DATE REMARK
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incorporating Dale P Luck & Associates
ACN 009 547 139 ABN 78 473 834 852
117 Harrington Street, Hobart, Tas (03) 6231 2555
49-51 Elizabeth Street, Launceston, Tas (03) 6331 7044
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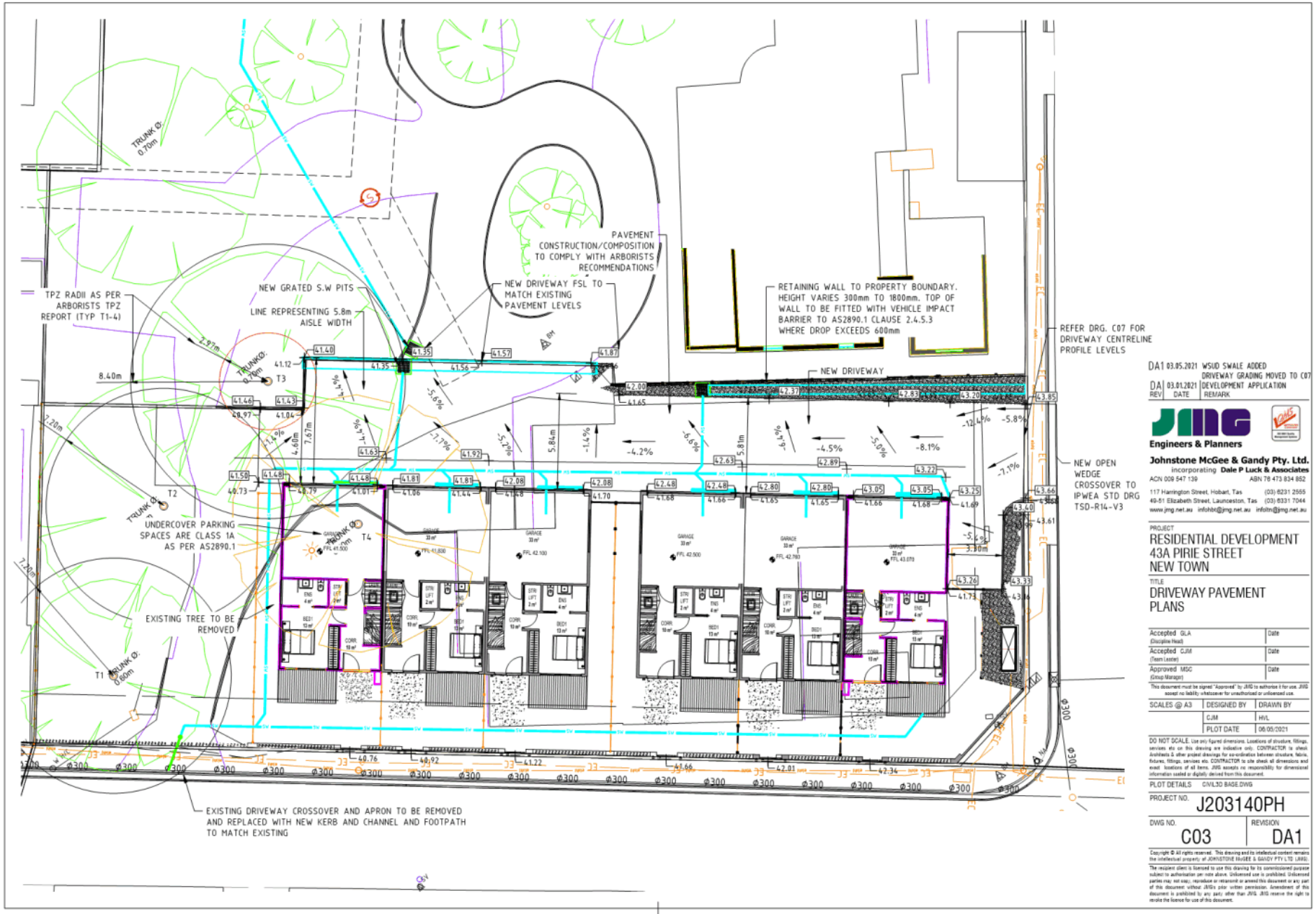
TRUNK Ø. 0.70m
TPZ RADII AS PER ARBORISTS TPZ REPORT (TYP T1-4)
NEW GRATED S.W PITS
LINE REPRESENTING 5.8m AISLE WIDTH
PAVEMENT CONSTRUCTION/COMPOSITION TO COMPLY WITH ARBORISTS RECOMMENDATIONS
NEW DRIVEWAY FSL TO MATCH EXISTING PAVEMENT LEVELS
RETAINING WALL TO PROPERTY BOUNDARY. HEIGHT VARIES 300mm TO 1800mm. TOP OF WALL TO BE FITTED WITH VEHICLE IMPACT BARRIER TO AS2890.1 CLAUSE 2.4.5.3 WHERE DROP EXCEEDS 600mm
NEW DRIVEWAY
REFER DRG. C07 FOR DRIVEWAY CENTRELINE PROFILE LEVELS
NEW OPEN WEDGE CROSSOVER TO IPWEA STD DRG TSD-R14-V3
T2
T3
T4
T1
UNDERCOVER PARKING SPACES ARE CLASS 1A AS PER AS2890.1
EXISTING TREE TO BE REMOVED
EXISTING DRIVEWAY CROSSOVER AND APRON TO BE REMOVED AND REPLACED WITH NEW KERB AND CHANNEL AND FOOTPATH TO MATCH EXISTING
DA1 03.05.2021 WSUD SWALE ADDED
DRIVEWAY GRADING MOVED TO C07
DA 03.01.2021 DEVELOPMENT APPLICATION
REV DATE REMARK
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incorporating Dale P Luck & Associates
ACN 009 547 139 ABN 78 473 834 852
117 Harrington Street, Hobart, Tas (03) 6231 2555
49-51 Elizabeth Street, Launceston, Tas (03) 6331 7044
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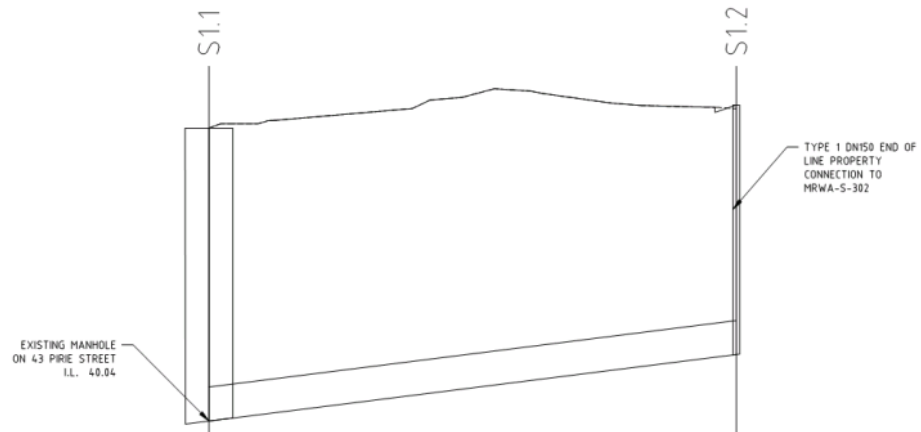

PIPE DETAILS SLOPE/GRADE DATUM RL 39.3	150Ø PVC SN8 1:39.7	
DEPTH TO INVERT	1.292	1.101
INVERT LEVEL	40.126	40.419
FINISHED SURFACE	41.418	41.520
EXISTING SURFACE	41.418	41.503
CHAINAGE	0.000	11.629
	11.629	

SEWER LONGITUNDINAL SECTION FOR LINE S1
SCALES: HORIZONTAL 1:100 VERTICAL 1:20

DA REV | 03.01.2021 DATE | DEVELOPMENT APPLICATION REMARK

JMG Engineers & Planners

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Approved MGC (Group Manager)	Date

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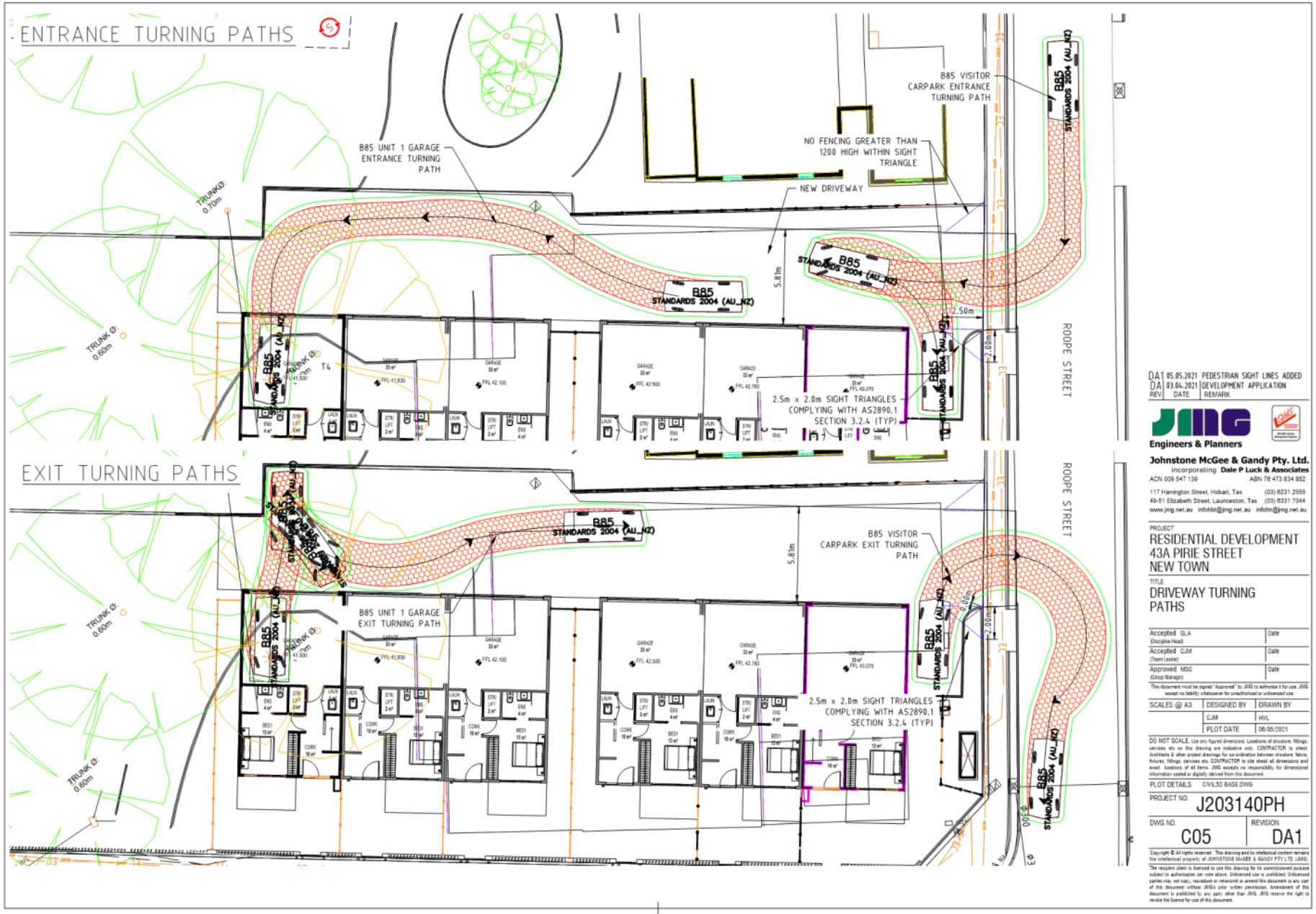
ENTRANCE TURNING PATHS
B85 UNIT 1 GARAGE ENTRANCE TURNING PATH
B85 VISITOR CARPARK ENTRANCE TURNING PATH
NO FENCING GREATER THAN 1200 HIGH WITHIN SIGHT TRIANGLE
NEW DRIVEWAY
B85 STANDARDS 2004 (AU_NZ)
5.81m
2.50m
2.00m
ROOPE STREET
TRUNK Ø 0.70m
TRUNK Ø 0.60m
T4
2.5m x 2.0m SIGHT TRIANGLES COMPLYING WITH AS2890.1 SECTION 3.2.4 (TYP)
EXIT TURNING PATHS
B85 UNIT 1 GARAGE EXIT TURNING PATH
B85 VISITOR CARPARK EXIT TURNING PATH
2.5m x 2.0m SIGHT TRIANGLES COMPLYING WITH AS2890.1 SECTION 3.2.4 (TYP)
DA1 05.05.2021 PEDESTRIAN SIGHT LINES ADDED
DA 03.04.2021 DEVELOPMENT APPLICATION
REV DATE REMARK
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TITLE
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R.L. 32.000

DESIGN SURFACE	43.752	43.637	43.522	43.409	43.407	43.292	43.185	43.066	42.949	42.865	42.743	42.624	42.583	42.501	42.346	42.293	42.236	42.038	42.011	41.942	41.888	41.789	41.674	41.607	41.563	41.519	41.448	41.464	41.473
EXISTING SURFACE	43.762	42.699	41.718	41.679	41.679	41.679	41.677	41.671	41.662	41.654	41.646	41.646	41.646	41.646	41.650	41.656	41.663	41.676	41.645	41.613	41.468	41.337	41.252	41.119	41.040	40.974	40.927	40.846	40.814
CHAINAGE	0.00	1.00	2.00	2.98	3.00	4.00	4.66	6.00	8.00	10.00	12.00	14.00	16.00	18.00	20.00	22.00	24.00	26.00	28.00	30.00	32.00	34.00	36.00	38.00	40.00	42.00	44.00	46.00	46.88

Profile ALN-DWAY Profile From 0.000 To 46.883
Scales: (H) 1:200 (V) 1:200

DA | 03.04.2021 | DEVELOPMENT APPLICATION
REV | DATE | REMARK

JMG
Engineers & Planners

Johnstone McGee & Gandy Pty. Ltd.
incorporating Dale P Luck & Associates
ACN 009 547 139 ABN 78 473 834 852
117 Harrington Street, Hobart, Tas (03) 6231 2555
49-51 Elizabeth Street, Launceston, Tas (03) 6331 7044
www.jmg.net.au infohbt@jmg.net.au infoltn@jmg.net.au

PROJECT
RESIDENTIAL DEVELOPMENT
43A PIRIE STREET
NEW TOWN

TITLE
DRIVEWAY LONG SECTION
PLAN AND HEIGHT
ENVELOPES

Accepted GLA (Discipline Head)	Date
Accepted CJM (Team Leader)	Date
Approved MGC (Group Manager)	Date

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	CJM	HVL
1:200	PLOT DATE	03/05/2021

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PLOT DETAILS CIVIL3D BASE.DWG

PROJECT NO. J203140PH

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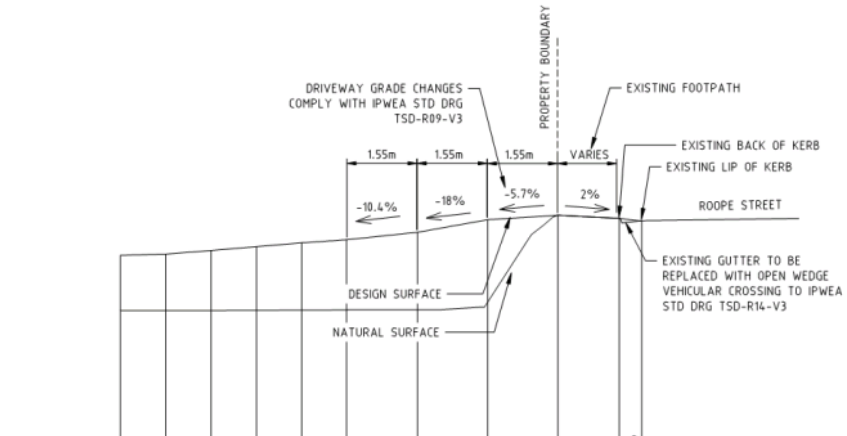

R.L. 37.000	2.89%	7.84%	8.73%	8.18%	7.16%					(-11.88%)
CUT/FILL	+1.223	+1.248	+1.322	+1.406	+1.482	+1.548	+1.708	+1.816	-0.001	-0.010	-0.007
DESIGN SURFACE	42.879	42.908	42.986	43.074	43.155	43.225	43.387	43.666	43.763	43.693	43.635
EXISTING SURFACE	41.656	41.660	41.664	41.668	41.673	41.677	41.679	41.850	43.764	43.703	43.642
CHAINAGE	0.00	1.00	2.00	3.00	4.00	4.99	6.55	8.10	9.65	11.00	11.49

Profile ALN-Crossover From 0.000 To 11.492
Scales: (H) 1:100 (V) 1:100

DRIVEWAY GRADING DETAIL

SCALE 1:100

REV	DATE	REMARK
DA1	03.05.2021	DRIVEWAY GRADING PROFILE ADDED
DA	03.01.2021	DEVELOPMENT APPLICATION

Engineers & Planners

Johnstone McGee & Gandy Pty. Ltd.
incorporating Dale P Luck & Associates
ACN 009 547 139 ABN 78 473 834 852

117 Harrington Street, Hobart, Tas (03) 6231 2555
49-51 Elizabeth Street, Launceston, Tas (03) 6331 7044
www.jmg.net.au infohbt@jmg.net.au infoltn@jmg.net.au

PROJECT
RESIDENTIAL DEVELOPMENT
43A PIRIE STREET
NEW TOWN

TITLE
DRIVEWAY PAVEMENT PLANS

Accepted GLA (Discipline Head)	Date
Accepted CJM (Team Leader)	Date
Approved MSC (Group Manager)	Date

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PROJECT NO. J203140PH

DWG NO. C07 REVISION DA1

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APPENDIX C

Site Catchment Flow Analysis

43A Pirie Residential Development

Stormwater Calculations

IFD Table

Rainfall mm/hr							
Annual Exceedance Probability (AEP) mm/hr							
Duration (min)	63.20%	50%	20%	10%	5%	2%	1%
1	61.3	69.6	97.6	118	140	171	196
2	52.8	59.5	81.1	96.1	111	130	145
3	46.7	52.7	72.3	86.2	100	118	133
4	42.1	47.6	65.9	78.9	92.3	110	125
5	38.4	43.6	60.7	73.1	85.9	104	118
10	27.8	31.6	44.6	54.3	64.6	79.4	91.9
15	22.5	25.6	36.2	44.1	52.4	64.7	74.9
20	19.3	21.9	30.8	37.5	44.6	54.9	63.5
25	17	19.4	27.2	33	39.1	47.9	55.3
30	15.4	17.5	24.5	29.7	35.1	42.8	49.2
45	12.3	14	19.4	23.3	27.4	33	37.6
60	10.5	11.9	16.5	19.7	23	27.5	31.1
90	8.45	9.57	13.1	15.6	18.1	21.4	24
120	7.25	8.22	11.3	13.3	15.4	18.1	20.2
180	5.86	6.65	9.12	10.8	12.4	14.5	16
270	4.73	5.39	7.42	8.76	10.1	11.7	13
360	4.05	4.63	6.41	7.59	8.71	10.2	11.3
540	3.24	3.72	5.2	6.18	7.13	8.4	9.37
720	2.74	3.15	4.45	5.31	6.15	7.29	8.17
1080	2.13	2.46	3.51	4.23	4.93	5.9	6.66
1440	1.76	2.04	2.92	3.54	4.15	5	5.66
1800	1.5	1.74	2.51	3.05	3.59	4.34	4.93
2160	1.32	1.52	2.2	2.68	3.17	3.83	4.36
2880	1.06	1.22	1.77	2.16	2.55	3.09	3.53
4320	0.761	0.878	1.26	1.54	1.83	2.2	2.51
5760	0.598	0.688	0.983	1.19	1.41	1.69	1.92
7200	0.495	0.569	0.806	0.973	1.14	1.37	1.54
8640	0.425	0.487	0.685	0.823	0.96	1.14	1.29
10080	0.375	0.429	0.599	0.715	0.829	0.983	1.1

43A Pirie Residential Development

Stormwater Calculations

Flow Calculations Existing

Time of Concentration			
C_1,10	25	mm	10% AEP, 60min Rainfall
A=	1370	m2	Insert Catchment Area
A=	0.00137	Km^2	Calculated in Km2
S_e=	-	m/Km	Insert Catchment Grade
L=	-	Km	Insert Flow Length
t_c=	-	mins	Tc Calculated
	5	**mins**	Whole Number Tc

Impervious Area		
Existing Impervious Area=	1062.72	m2
Total Area =	1370	m2
Fraction Impervious =	78%	

Runoff Coefficient		
Fraction impervious =	78%	
C1,10 =	0.100	*Formula - Refer ARR Book VIII*
C10 =	**0.72**	**Runoff Coefficient**

Frequency Conversion Factors -Refer AR&R 1987										
ARI (years)	1	2	5	10	20	40	60	80	50	100
Factor, F_y	0.8	0.85	0.95	1	1.05	1.2	1.17	1.19	1.15	1.2

Peak Catchment Flows For Varied 5% AEP Storm Durations		
AEP	**Duration (min)**	**Flow (m^3/s)**
5%	5	0.025
5%	10	0.019
5%	15	0.015
5%	20	0.013
5%	25	0.011
5%	30	0.010
5%	45	0.008
5%	60	0.007

Peak Catchment Flows For Given AEP at T.O.C.		
AEP	**$I_{tc,Y}$ (mm/h)**	**Flow (m^3/s)**
63.20%	38.4	0.0084
50.00%	43.6	0.0102
20.00%	60.7	0.0158
10.00%	73.1	0.0201
5.00%	85.9	0.0248
2.00%	104.0	0.0328
1.00%	118.0	0.0389

Hardstand (100% Impervious)		
Roof	457.5	
Driveway	238.2	
Pavement (Paths)	162.5	
Impervious Area	**858.2**	m2

Landscaping (40% Impervious)		
Backyard	511	
Impervious Area	**204.52**	m2

43A Pirie Residential Development

Stormwater Calculations

Flow Calculations New

Time of Concentration			
C_1,10	25	mm	10% AEP, 60min Rainfall
A=	1370	m2	Insert Catchment Area
A=	0.00137	Km^2	Calculated in Km2
S_e=	-	m/Km	Insert Catchment Grade
L=	-	Km	Insert Flow Length
t_c=	-	mins	Tc Calculated
	5	**mins**	Whole Number Tc

Impervious Area		
New Impervious Area=	1013.16	m2
Total Area =	1370	m2
Fraction Impervious =	74%	

Runoff Coefficient		
Fraction impervious =	74%	
C1,10 =	0.100	*Formula - Refer ARR Book VIII*
C10 =	**0.69**	**Runoff Coefficient**

Frequency Conversion Factors -Refer AR&R 1987										
ARI (years)	1	2	5	10	20	40	60	80	50	100
Factor, F_y	0.8	0.85	0.95	1	1.05	1.2	1.17	1.19	1.15	1.2

Peak Catchment Flows For Varied 5% AEP Storm Durations		
AEP	**Duration (min)**	**Flow (m^3/s)**
5%	5	0.024
5%	10	0.018
5%	15	0.014
5%	20	0.012
5%	25	0.011
5%	30	0.010
5%	45	0.008
5%	60	0.006

Peak Catchment Flows For Given AEP at T.O.C.		
AEP	**$I_{tc,Y}$ (mm/h)**	**Flow (m^3/s)**
63.20%	38.4	0.0081
50.00%	43.6	0.0098
20.00%	60.7	0.0152
10.00%	73.1	0.0193
5.00%	85.9	0.0238
2.00%	104.0	0.0315
1.00%	118.0	0.0373

Hardstand (100% Impervious)		
Roof	492.8	
Driveway	282.8	
Carpark	0	
Impervious Area	**775.6**	m2

Landscaping (40% Impervious)		
Backyard	594	
Impervious Area	**237.56**	m2

43A Pirie Residential Development

Stormwater Calculations

Boyd's Formula

Catchment & Flow Details			Comments
Catchment Area =	0.14	Ha	
10 Year Runoff Coefficient =	0.72	-	
20 Year Effective Catchment Area =	0.10	Ha	
Restricted Outflow Requirement =	0.025	m3/s	Site Runoff: pre development 5% AEP, 13min (ToC) storm duration.

Detention Calculation							29% Climate Change			
Storm Duration	5% AEP	5% AEP + 29% CC	Ip	Qp	V1	Smax	Ip	Qp	V1	Smax
(min)	Intensity (mm/hr)	Intensity (mm/hr)	(m3/s)	(m3/s)	(m3)	(m3)	(m3/s)	(m3/s)	(m3)	(m3)
1	140.00	180.6	0.040	0.025	2.42	0.93	0.052	0.025	3.12	1.63
2	111.00	143.2	0.032	0.025	3.83	0.86	0.041	0.025	4.95	1.98
3	100.00	129.0	0.029	0.025	5.18	0.73	0.037	0.025	6.69	2.23
4	92.30	119.1	0.027	0.025	6.38	0.44	0.034	0.025	8.23	2.29
5	85.90	110.8	0.025	0.025	7.42	-0.01	0.032	0.025	9.57	2.15
10	64.60	83.3	0.019	0.025	11.16	-3.69	0.024	0.025	14.40	-0.46
15	52.40	67.6	0.015	0.025	13.58	-8.70	0.019	0.025	17.52	-4.76
20	44.60	57.5	0.013	0.025	15.41	-14.29	0.017	0.025	19.88	-9.82
25	39.10	50.4	0.011	0.025	16.89	-20.24	0.015	0.025	21.78	-15.34
30	35.10	45.3	0.010	0.025	18.19	-26.36	0.013	0.025	23.47	-21.09
45	27.40	35.3	0.008	0.025	21.30	-45.53	0.010	0.025	27.48	-39.35
60	23.00	29.7	0.007	0.025	23.84	-65.27	0.009	0.025	30.75	-58.35
90	18.10	23.3	0.005	0.025	28.14	-105.52	0.007	0.025	36.30	-97.36
120	15.40	19.9	0.004	0.025	31.92	-146.29	0.006	0.025	41.18	-137.03
180	12.40	16.0	0.004	0.025	38.56	-228.76	0.005	0.025	49.74	-217.58
270	10.10	13.0	0.003	0.025	47.11	-353.86	0.004	0.025	60.77	-340.20
360	8.71	11.2	0.003	0.025	54.17	-480.46	0.003	0.025	69.87	-464.76
540	7.13	9.2	0.002	0.025	66.51	-735.43	0.003	0.025	85.80	-716.15
720	6.15	7.9	0.002	0.025	76.49	-992.77	0.002	0.025	98.68	-970.59

APPENDIX D

Water and Sewer Demand Calculations

J203140PH

43A Pirie Residential Development

Sewer Design Flow Calcs

	WSA CALCULATIONS	:ULATED VA	UNITS	COMMENTS
DESIGN FLOW	PDWF + GWI + RDI	0.53334652	L/s	Design flow result

PDWF	d x ADWF	0.3988503	L/s	
	PDWF			
d	0.01*(LOG(A))^4-0.19*(LOG(A))^	12.7640265		
A	Gross Area of Development	0.137	Ha	Determine area (m2) off plans
	ADWF			
ADWF	0.001736*EP (150L/d/EP - as per	0.031248	L/s	
EP	3 x ET	18		TasWater overrides WSA
ET	Total Equivalent Tenements	6		TasWater Assumption (right)

GWI	0.025 x A x Portion(wet)	0.0023975	L/s	
$Portion_{wet}$	Portion of Network where GW > F	0.7		TasWater Assumption (5.5.5.2)

RDI	0.028 x Aeff x C x I	0.13209871	L/s	
A_{eff}	A x (Density/150)^0.5 OR A	0.12821856		Density >/< 150
Density	EP/A	131.386861		
C	Saspect + Naspect	1.4		
Saspect	Soil Aspect	0.8		TasWater Assumption
Naspect	Network Defects Aspect	0.6		TasWater Assumption
I	$I_{1,2}$ x $Factor_{size}$ x $Factor_{containment}$	26.282194		
I(1,2)	1 hr duration rainfall intensity, AR	13.2		Determined from BOM
Factor(size)	(40/A)^0.12	1.97624476		
Factor(containment)	0.77 x (10^(0.43X)) / (10^(0.14X^	1.00750441		
X	log(ARI)	0.30103		
ARI	Annual Recourence Interval	2		TasWater Assumption

Total ET	6

TasWater Supplement Appendix B

>2 Storeys, High Density, Dwelling				
	1 Bedroom	2 Bedroom	3+ Bedroom	
Factor/dwelling	0.5	0.75	1	
No. of Units	0	0	6	Sum
ET	0	0	6	6

J203140PH

43A Pirie Residential Development

Water Design Flow Estimations

Option 1)			
ET's < 100			
	Quantity	Units	Comments
Number of Units/Homes/Town Houses	4.02	-	
Probable Simultaneous Demand (PSD)	1.03	L/s	(AS/NZS 3500.1:2003 Table 3.2.3)

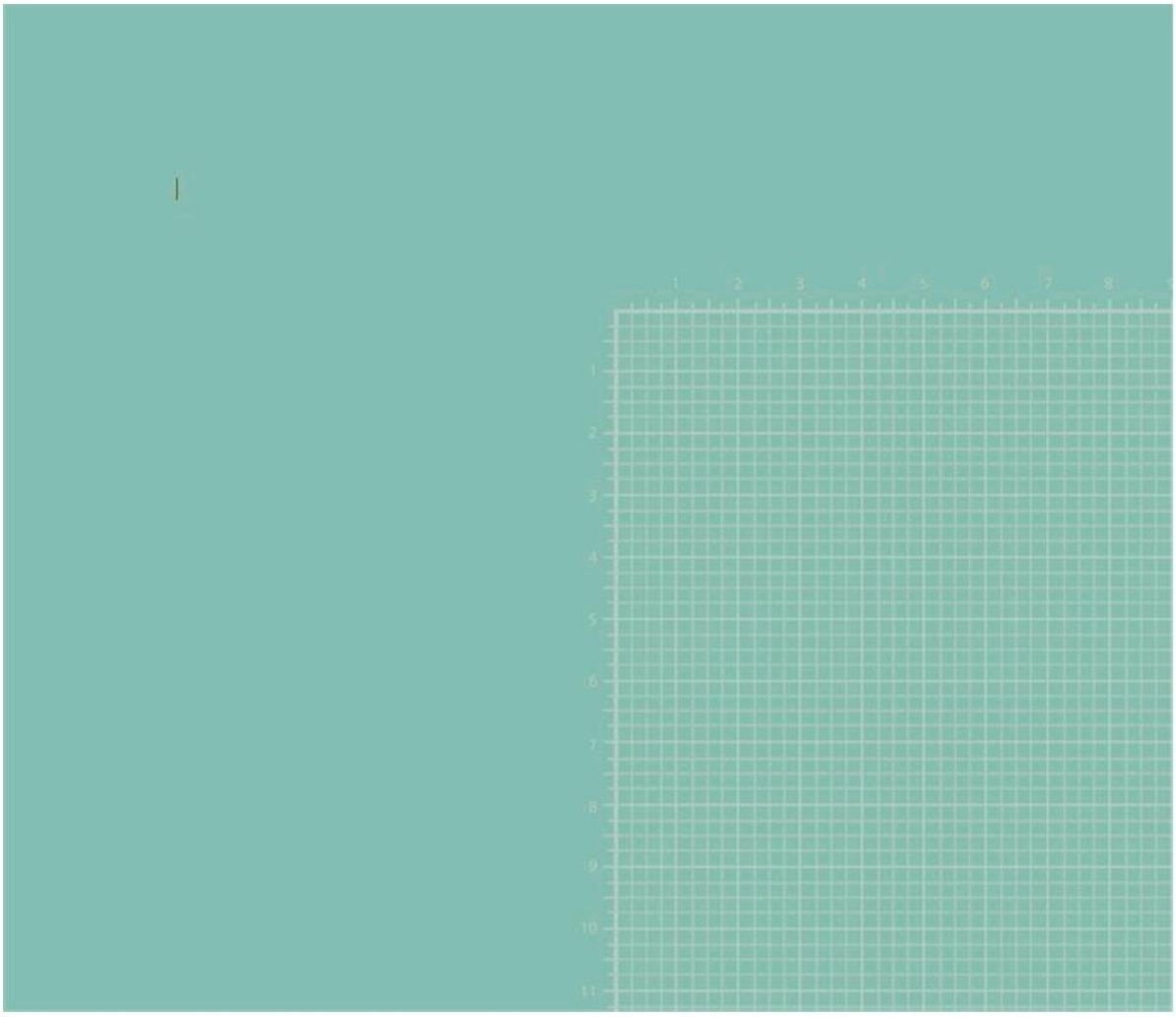
OR

Option 2)			
ET's >= 100			
	Quantity	Units	Comments
Average Day Demand (AD)	0	L/ET/day	As per 2.3.1 of TasWater Supplement
Average Water Demand (per day)	0	L/day	
Average Water Demand (per day)	0	kL/day	

Total ET	4.02

TasWater Supplement Equivalent Water Tenement Rates

>2 Storeys, High Density, Dwelling				
	1 Bedroom	2 Bedroom	3+ Bedroom	
Factor/dwelling	0.33	0.5	0.67	
No. of Units	0	0	6	Sum
ET	0	0	4.02	4.02



Johnstone McGee & Gandy Pty Ltd

ABN 76 473 834 852 ACN 009 547 139

www.jmg.net.au

HOBART OFFICE
117 Harrington Street
Hobart TAS 7000
Phone (03) 6231 2555
infohbt@jmg.net.au

LAUNCESTON OFFICE
49-51 Elizabeth Street
Launceston TAS 7250
Phone (03) 6334 5548
infoltn@jmg.net.au

Engineers & Planners

PLANNING REPORT

For Tas Dream Pty Ltd

43a Pirie Street

New Town

March 2021

JMG Engineers & Planners

Issuing Office: 117 Harrington Street, Hobart 7000								
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TABLE OF CONTENTS

Executive Summary

Tas Dream Pty Ltd seek to develop land located at 43a Pirie Street, New Town. The site comprises of title CT 107319/1 on land in the Inner Residential Zone. It is located within the land area subject to the Royal Hobart Hospital Helipad Airspace Specific Area Plan. The proposal is for a change of use and development for multiple dwellings including:

- Demolition of the existing single storey (concrete block) building, timber paling fencing (adjoining the site frontages), and existing driveway pavement;
- Removal of an existing tree of which the trunk is an estimated 19.5 m south east in from the northern boundary;
- Installation and upgrade of services associated with the proposed development (including power, communications, water, sewer and stormwater connections associated with the development);
- Development of 6 three storey units, consisting of two design types which both have 3 floors, summarised as per Table 1 below:

Table 1 - Unit types of proposed development

Unit Type	Total Area	Features
Type A	204.13m^2	3 levels, balcony on upper 2 levels, 2 car parks within garage
Type B	203.30m^2	3 levels, balcony on upper 2 levels, 2 car parks within garage

- A new Right of Way adjoining the site's north east boundary, containing 1 new vehicle crossover off of Roope Street with a 5.6m wide driveway, including 2x6m wide passing bays and 1 visitor car parking space.

Of the works outlined above, some installation and upgrade of services will impact upon the Roope Street and Pirie Street Road Reserves, both of which are vested in the interests of Hobart City Council. Some works which relate to sewer and stormwater will also impact upon the neighbouring property, 43 Pirie Street. Accordingly, landowner consent and notification have been sought in accordance with s.52 of the *Land Use Planning and Approvals Act 1993* (LUPAA).

1 Introduction

JMG Engineers and Planners have been engaged by MinD Architects on behalf of Tas Dream Pty Ltd to prepare a planning permit application for a residential development at 43a Pirie Street, New Town. The proposal involves the development of 6 units involving the demolition of existing buildings and structures on the site.

This report serves to provide an assessment of the proposal against the relevant provisions of the *Hobart Interim Planning Scheme 2015* ('the Planning Scheme').

2 Site Location & Context

The development site is located at 43a Pirie Street, New Town. It is approximately 1.3km south of Moonah Main Street shopping area, 0.5km north west of the Domain, and 2km north of the North Hobart restaurant, café and shopping precinct, on the western shore of the Derwent River.

The site is currently developed with an existing single storey residential dwelling on the south eastern area of the site and an area of open space encompassing a driveway access and garden area on the north western area of the site.

The Subject Site has an area of 1369m^2 and the proposed development results in a site area per d welling of 228m^2.

Existing buildings within 100m of the development site are predominantly single and double storey residential dwellings. There are some existing commercial buildings and uses to the south on New Town Road. The site and surrounding context are shown below in Figure 1.

The adjoining property immediately to the north east (43 Pirie Street), south (34 Pirie Street), and that to the south west (30 Roope Street) are Tasmania Heritage Register listed properties.

The development site is located on land fully serviced by TasWater for potable water and sewerage.

There is a Metro Bus stop 175m south of the site, associated with bus services to the northern suburbs as well as Elizabeth Street bus interchange facilities. There are shops and a small number of services on New Town Road all within walking distances of approximately 160m to 250m.

Figure 1 - Subject site of proposed development

The development site is located on land zoned Inner Residential. Land south and west is zoned Utilities (New Town Road) and Urban Mixed Use as shown below in Figure 2.

Figure 2 - Zoning of the site and surrounding area

The development site is located within a Specific Area Plan (the Royal Hobart Hospital Helipad Airspace Specific Area Plan) and adjacent to two Heritage Precincts as shown below in Figure 3.

Figure 3 - Overlays of the subject site and surrounding area

3 Proposed Use & Development

The proposal is for development of multiple dwellings (6 three storey units) including the following:

- Demolition of the existing single storey (concrete block) building, timber paling fencing (adjoining the site frontages) and existing driveway pavement;
- Removal of an existing tree of which the trunk is an estimated 19.5 m south east in from the northern boundary;
- Installation and upgrade of services associated with the proposed development (including power, communications, water, sewer and stormwater connections associated with the development);
- Development of 6 three storey units, consisting of two design types which both have 3 floors, summarised as per Table 1 below:

Table 2 - Unit types of proposed development

Unit Type	Total Area	Features
Type A	204.13m²	3 levels, balcony on upper 2 levels, 2 car parks within garage
Type B	203.30m²	3 levels, balcony on upper 2 levels, 2 car parks within garage

- A new Right of Way adjoining the site's north east boundary, containing 1 new vehicle crossover off Roope Street with a 5.6m wide driveway, including 2x6m wide passing bays and 1 visitor car parking space.

Of the works outlined above, some installation and upgrade of services will impact upon the Roope Street and Pirie Street Road Reserves (namely, a new vehicle crossover and installation of a new private water main connection), both of which are vested in the interests of Hobart City Council. Some works which relate to sewer and stormwater will also impact upon the neighbouring property, 43 Pirie Street. Accordingly, landowner consent and notification have been sought in accordance with s.52 of the *Land Use Planning and Approvals Act 1993* (LUPAA).

A summary of all titles involved in the proposed development, the nature of works on each, and landowner consents and notifications, is summarised below in Table 3.

Table 3 - Summary of existing titles involved in the proposed development

Title Reference	Street	Comments re existing/proposed development	Landowner Consent/Notification
CT 107319/1	43a Pirie Street, New Town	Adjusting Right of Way, new crossover, 6 unit development & associated services upgrades.	Landowner notification not required as the owner is the applicant.
CT 199999/1	43 Pirie Street, New Town	Sewer and stormwater improvements.	Landowner notification in accordance with s.52 (1) of LUPAA.
Roope Street Road Reserve, CT unknown	Roope Street	Installation of new vehicle crossover.	General Manager consent from the City of Hobart, s.52 (1b) of LUPAA.
Pirie Street Road Reserve, CT unknown	Pirie Street	Installation of new private water main connection (DN32) to connect into the existing TasWater main (DN100) within the Pirie Street Road Reserve.	As Above.

A record of Landowner Notification and Consent is provided in Appendix A, Title Information can be found in Appendix B, and a Drawing Set which shows the Proposed Use & Development can be found in Appendix C. Other supporting information prepared includes the Arborist Report in Appendix D, the Traffic Impact Assessment in Appendix E, and Concept Services Information in Appendix F.

4 Policy Assessment

The proposal is assessed against the *Hobart Interim Planning Scheme 2015* (the Planning Scheme).

The subject site is located within the Inner Residential Zone. In this zone, residential use associated with multiple dwelling is classified as a Permitted Use Class.

The relevant Code and Specific Area Plan provisions to be considered include:

- E5.0 Road and Railway Assets Code;
- E6.0 Parking and Access Code;
- E7.0 Stormwater Management Code;
- E13.0 Historic Heritage Code;
- E17.0 Signs Code; and
- F4.0 Royal Hobart Hospital Helipad Airspace Specific Area Plan.

An assessment against the provisions of the Zone and relevant Code and Specific Area Plan provisions follows.

In summary, the application generates the following discretions under the Planning Scheme:

- 11.0 Inner Residential Zone (11.4 Development Standards for Buildings and Works)
  - Clause 11.4.3 Site coverage and private open space - P2;
  - Clause 11.4.4 Sunlight and overshadowing - P1;
  - Clause 11.4.6 Privacy - P1, P2, P3;
  - Clause 11.4.7 Frontage Fences - P1;
  - Clause 11.4.8 Waste storage for multiple dwellings - P1.
- E5.0 Road and Railway Assets Code
  - Clause E5.6 Development Standards, E5.6.2 Road accesses and junctions - P2;
- E6.0 Parking and Access Code (E6.6 Use Standards)
  - E6.6.1 Number of Car Parking Spaces - P1;
  - E6.7.8 Landscaping of Parking Areas - P1;
- E7.0 Stormwater Management Code
  - E7.7.1 Stormwater Drainage and Disposal.

4.1 Inner Residential Zone (11.0)

The Zone Purpose Statements for the zone are listed below:

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.

In accordance with Part B.8 - Clause 8.10.2 the matters listed under the Zone Purpose Statements are not standalone governing concerns and are only applicable regarding interpreting specific Performance Criteria. The purpose of these statements is to provide local context to the interpretation of any specific Performance Criteria.

11.3 Use Standards

The proposed Residential (multiple dwellings) use is classified as a 'permitted' as per 11.2 Use Table; there are no Use Standards triggered by a permitted proposal and does not include visitor accommodation.

11.4 Development Standards for Buildings and Works

11.4.1 Residential density for multiple dwellings

Objective:	
That the density of multiple dwellings: (a) makes efficient use of land for housing; and (b) optimises the use of infrastructure and community services.	
Acceptable Solutions	**Performance Criteria**
A1 Multiple dwellings must have a site area per dwelling of not less than 200m².	**P1** Multiple dwellings must only have a site area per dwelling less than 200m² if: (a) the development contributes to a range of dwelling types and sizes appropriate to the surrounding area; or (b) the development provides for a specific accommodation need with significant social or community benefit.

The proposed development has a title area of 1369m² which is 228m² per dwelling and is compliant with A1. However, 'site area' is defined under Part B.4 Interpretation, as *"the area of a site, excluding any access strip or driveway"*; therefore, density is calculated by subtracting the area of driveway and dividing the area by the number of dwellings propose for the site. The right or way area which is to be used by others covers an area of 245.5m² resulting in a site area of 1123.5m² as defined by the Scheme. The density of the site is one dwelling per 187.25m²; therefore, reliant on the Performance Criteria.

In accordance with the Planning Authority may approve a site area less than 200m² if *the development contributes to a range of dwelling types and sizes appropriate to the surrounding area*, pursuant to P1(a). Having regard to Clause 8.10.2(a) and the purpose of the Inner Residential Zone the proposed development is considered to be aligned with the performance criteria and zone purpose as it provides for:

- Two dwelling types (each 3 storeys, comprising 5 bedrooms) which will meet the needs of the middle market segment and contribute to a greater diversity of housing stock in the area, close to services and facilities in inner urban and historically established areas (Statement 11.1.1.1);
- The redevelopment of the existing site will result in higher density residential development within walkable distances to services south west on New Town Road and North West off of Risdon Road (Statement 11.1.1.3);
- The residential development will have facades with plantings and facades broken up by a range of materials, insets and overhangs, which will be contrasting yet complementary

to the existing neighbourhood character of the area (Statement 11.1.1.4) and provide a high standard of residential amenity (Statement 11.1.1.5);

Consideration must be taken for the fact that this site will provide vehicle access not only to the proposed multiple dwellings but also the heritage property known as "Flint House". Additionally, the development is to retain the established trees at the north-western end of the site further minimising adverse impact on the streetscape.

The proposal is only short 12.75m^2 per dwelling. Having regard to the Inner Residential Zone purpose statements listed under Clause 11.1.1 of the Scheme, the development draws on the traditional terraced housing design providing for and contributes to a range dwelling types and sizes appropriate to the surrounding area.

11.4.2 Setbacks and building envelope

Objective:	
That the siting and scale of dwellings: (a) provides reasonably consistent separation between dwellings and their frontage within a street; (b) provides consistency in the apparent scale, bulk, massing and proportion of dwellings; and (c) provides separation between dwellings on adjoining properties to allow a reasonable opportunity for daylight and sunlight to enter habitable rooms and private open space.	
Acceptable Solutions	**Performance Criteria**
A1 Unless within a building area on a sealed plan, a dwelling, excluding garages, carports and protrusions that extend not more than 0.9m into the frontage setback, must have a setback from a frontage that is: (a) if the frontage is a primary frontage, not less than 3m, or, if the setback from the primary frontage is less than 3m, not less than the setback, from the primary frontage, of any existing dwelling on the site; (b) if the frontage is not a primary frontage, not less than 2m, or, if the setback from the frontage is less than 2m, not less than the setback, from a frontage that is not a primary frontage, of any existing dwelling on the site; (c) if for a vacant site and there are existing dwellings on adjoining properties on the same street, not more than the greater, or less than the lesser, setback for the equivalent frontage of the dwellings on the adjoining sites on the same street; or (d) if located above a non-residential use at ground floor level, not less than the setback from the frontage of the ground floor level.	**P1** ***

The proposal has been considered against sub-clauses (a) to (d) of A1 as follows:

- The primary frontage is Roope Street (which has the shortest dimensions out of the two frontages, the other being Pirie Street) and the dwellings have a setback from this Frontage of 4.5m, compliant with sub-clause (a);
- The other frontage is Pirie Street and dwellings have a minimum setback from this frontage of 2.8m, compliant with sub-clause (b);
- As the site is not vacant and there is no non-residential use at ground floor level, sub-clauses (c) and (d) are not applicable.

On the basis of the above, the proposal is compliant with A1.

Acceptable Solutions	**Performance Criteria**
A2 A garage or carport must have a setback from a frontage of at least: (a) 4m, or alternatively 1m behind the façade of the dwelling; or (b) the same as the dwelling façade, if a portion of the dwelling gross floor area is located above the garage or carport; or	**P2** ***

(c) 1m, if the natural ground level slopes up or down at a gradient steeper than 1 in 5 for a distance of 10m from the frontage.	

The garage of Unit 6 is setback 4.5m from Roope Street and this is the same as the setback of the dwelling façade, therefore the proposal meets sub-clauses (a) and (b) of A2 is thus compliant. Sub-clause (c) is not applicable.

Acceptable Solutions	Performance Criteria
A3 A dwelling, excluding outbuildings with a building height of not more than 2.4 m and protrusions that extend not more than 0.6 m horizontally beyond the building envelope, must: (a) be contained within a building envelope (refer to Figures 11.1, 11.2 and 11.3) determined by: (i) a distance equal to the frontage setback or, for an internal lot, a distance of 3m from the rear boundary of a property with an adjoining frontage; and (ii) projecting a line at an angle of 45 degrees from the horizontal at a height of 3m above existing ground level at the side and rear boundaries to a building height of not more than 9.5m above existing ground level; and (b) only have a setback within 1.5 m of a side boundary if the dwelling: (i) does not extend beyond an existing building built on or within 0.2 m of the boundary of the adjoining lot; or (ii) does not exceed a total length of 9m or one-third the length of the side boundary (whichever is the lesser). This acceptable solution does not apply to Battery Point Heritage Precinct (BP1).	**P3** ***

The design of the proposed dwellings is contained within the relevant Building Envelope (Figure 11.1), compliant with sub-clause (a) (i) and (ii). As the dwellings do not have a setback within 1.5 m of a side boundary, sub-clause (b) is not applicable. The proposal is therefore considered compliant with A3.

11.4.3 Site coverage and private open space

Objective:	
That dwellings are compatible with the amenity and character of the area and provide: (a) for outdoor recreation and the operational needs of the residents; (b) opportunities for the planting of gardens and landscaping; and (c) private open space that is conveniently located and has access to sunlight.	
Acceptable Solutions	**Performance Criteria**
A1 Dwellings must have: (a) a site coverage of not more than 65% (excluding eaves up to 0.6m wide); and (b) for multiple dwellings, a total area of private open space of not less than 40m^2 associated with each dwelling, unless the dwelling has a finished floor level that is entirely more than 1.8m above the ground level (excluding a garage, carport or entry foyer).	**P1** Dwellings must have: (a) private unless the projected requirements of the occupants are considered to be satisfied by public open space in close proximity; and (c) reasonable space for the planting of gardens and landscaping.

Dwellings within the title boundaries have site coverage of 38% (as noted on drawings); however, site coverage is defined by the Scheme as the area excluding access strip. Therefore, with access strip area of 245.5m^2 excluded results in a site coverage of 46.8% and is compliant with the Acceptable Solution.

Each dwelling has a minimum total area of Private Open Space (POS) of 45m^2 (comprising a ground floor garden and deck area and balcony spaces on the first and second floors respectively, noting that the some of the ground floor POS areas are greater than the minimum of 31m^2 and thus the total will be greater than 45m^2). The proposal is thus compliant with A1.

Acceptable Solutions	Performance Criteria
A2 A dwelling must have an area of private open space that: (a) is in one location and is at least: (i) 24m^2; or (ii) 12m^2, if the dwelling is a multiple dwelling with a finished floor level that is entirely more than 1.8 m above the finished ground level (excluding a garage, carport or entry foyer); and (b) has a minimum horizontal dimension of: (i) 4m; or (ii) 2m, if the dwelling is a multiple dwelling with a finished floor level that is entirely more than 1.8 m above the finished ground level (excluding a garage, carport or entry foyer); and (c) is located between the dwelling and the frontage only if the frontage is orientated between 30 degrees west of true north and 30 degrees east of true north; and (d) has a gradient not steeper than 1 in 10.	**P2** A dwelling must have private open space that includes an area capable of serving as an extension of the dwelling for outdoor relaxation, dining, entertaining and children's play and is: (a) conveniently located in relation to a living area of the dwelling; and (b) orientated to take advantage of sunlight.

Private Open Space (POS) for each of the units meets the requirements of A2(a) and (b) as the area of POS in one location is a minimum of 33m^2 (ground level), has a minimum horizontal dimension of 6m (exceeding the 4m minimum), and has a flat gradient. However, although the POS is located between the dwelling and the frontage, this area is not orientated between 30 degrees west of true north and 30 degrees east of true north, thus the proposal cannot meet sub-clause (c). The proposal has instead been considered against P2 as follows:

- At least one POS area of each is directly accessible from a Living Space within the dwelling, thus conveniently located in relation to living areas, satisfying sub-clause (a);
- The Ground Level and Level 2 POS areas are south west facing so capture some sunlight whilst the deck POS area on Level 1 is north east facing, optimising sunlight to the Living and Dining area, satisfying sub-clause (b).

On the basis of the above, the proposal satisfies P2.

11.4.4 Sunlight and overshadowing

Objective:	
To provide: (a) the opportunity for sunlight to enter habitable rooms (other than bedrooms) of dwellings; and (b) separation between dwellings on the same site to provide reasonable opportunity for daylight and sunlight to enter habitable rooms and private open space.	
Acceptable Solutions	**Performance Criteria**
A1 A multiple dwelling that is to the north of the Private Open Space of another dwelling on the same site, required to satisfy A2 or P2 of Clause 11.4.3, must satisfy (a) or (b), unless excluded by (c): (a) the multiple dwelling is contained within a line projecting (see Figure 11.4): (i) at a distance of 3m from the northern edge of the private open space; and (ii) vertically to a height of 3m above existing ground level and then at an angle of 45 degrees from the horizontal.	**P1** A multiple dwelling must be designed and sited to not cause an unreasonable loss of amenity by overshadowing the private open space, of another dwelling on the same site, which is required to satisfy A2 or P2 of clause 11.4.3 of this planning scheme.

(b) the multiple dwelling does not cause 50% of the private open space to receive less than 3 hours of sunlight within the hours of 9.00am to 3.00pm on 21st June. (c) this Acceptable Solution excludes that part of a multiple dwelling consisting of: (i) an outbuilding with a building height not more than 2.4m; or (ii) protrusions that extend not more than 0.9m horizontally from the multiple dwelling.	

The proposal has been considered against A1 and is able to comply with sub-clause (b) as the shadow diagrams within the Drawing Set (Appendix C) demonstrate that a minimum of 216m^2 of Private Open Space (POS) (39%) only will be overshadowed for more than 3 hours per day comprising the following:

- A minimum of 31m^2 of ground floor POS per dwelling (a total of 186m^2);
- A minimum of 5m^2 of second floor (balcony) POS per dwelling (a total of 30m^2).

The remaining areas of POS (being a Communal Garden Area of 273m^2 and a first-floor area of 9m^2 per balcony on the north frontage accessed from the living area, totalling 30m^2) only experience minimal overshadowing. The proposal is thus compliant with A1, sub-clause (b).

11.4.5 Width of openings for garages and carports

Objective:	
To reduce the potential for garage or carport openings to dominate the primary frontage.	
Acceptable Solutions	**Performance Criteria**
A1 A garage or carport for a dwelling within 12m of a primary frontage, whether the garage or carport is free-standing or part of the dwelling, must have a total width of openings facing the primary frontage of not more than 6m or half the width of the frontage (whichever is the lesser).	**P1** ***

As no garages of the multiple dwelling proposal face the primary frontage, A1 is not considered applicable.

11.4.6 Privacy

Objective:	
To reduce the potential for loss of privacy for dwellings.	
Acceptable Solutions	**Performance Criteria**
A1 A balcony, deck, roof terrace, parking space, or carport for a dwelling (whether freestanding or part of the dwelling), that has a finished surface or floor level more than 1m above existing ground level must have a permanently fixed screen to a height of not less than 1.7m above the finished surface or floor level, with a uniform transparency of not more than 25%, along the sides facing a: (a) side boundary, unless the balcony, deck, roof terrace, parking space, or carport has a setback of not less than 3m from the side boundary; (b) rear boundary, unless the balcony, deck, roof terrace, parking space, or carport has a setback of not less than 4m from the rear boundary; and (c) dwelling on the same site, unless the balcony, deck, roof terrace, parking space, or carport is not less than 6m:	**P1** A balcony, deck, roof terrace, parking space or carport (whether freestanding or part of the dwelling) that has a finished surface or floor level more than 1m above natural ground level, must be screened, or otherwise designed, to minimise overlooking of: (a) a dwelling on an adjoining lot or its private open space; or (b) another dwelling on the same site or its private open space; or

(i) from a window or glazed door, to a habitable room of the other dwelling on the same site; or (ii) from a balcony, deck, roof terrace or the private open space, of the other dwelling on the same site.	(c) an adjoining vacant residential lot.

Within the proposal, two balcony areas have a finished surface or floor level more than 1m above natural ground level for both Unit Types A and B and thus assessment is required against Clause 11.4.6 (Privacy). Each of these balcony areas is summarised as follows:

- Type 1: A north east facing space off of the habitable room on Level 1 - 2.6m above natural ground level, facing both the rear boundary and side boundaries of the subject site (with a setback greater than 3m from these), jutting out from the main façade of the unit adjacent to decks of the same style on other dwellings;
- Type 2: A south west facing space off of a Master Bedroom on Level 2 - 5.6m above natural ground level, setback under 3m from the boundary, of which such areas for four of the six dwellings have walls along the sides which face side boundaries.

The proposal has been considered against A1 and although it is largely compliant, as the screening of the balcony area on Level 2 from that of adjoining properties is not transparent, the proposal must be considered against P1. An assessment follows:

- Overlooking from balcony and deck areas on Level 1 and Level 2 of the multiple dwellings onto dwellings and private open space on adjoining lots is not considered to be an issue, as there is screening 1.7m high combined with distances of between 8m and 16m to dwellings and private open space on adjoining lots, adequately minimising overlooking, satisfying sub-clause (a);
- The balcony and deck areas on Level 1 and Level 2 of the multiple dwellings have a finished floor level more than 1m above natural ground level and overlooking from these onto dwellings and private open space on adjoining lots is not considered to be an issue, due to the following:
    - The balcony area on Level 1 has screening 1.7m high to allow for adequate privacy;
    - The balcony area on Level 2, which is enclosed with walling on the north west and south east sides;
- Combined, these provide adequate screening and protection from overlooking of private open space of other dwellings, satisfying sub-clause (b);
- As there are no adjoining vacant residential lots, sub-clause (c) is not applicable.

On the basis of the above, the proposal is considered to satisfy P1.

Acceptable Solutions	Performance Criteria
A2 A window or glazed door, to a habitable room of a dwelling that has a floor level more than 1m above existing ground level, must satisfy (a), unless it satisfies (b): (a) the window or glazed door: (i) is to have a setback of not less than 3m from a side boundary; (ii) is to have a setback of not less than 4m from a rear boundary; (iii) if the dwelling is a multiple dwelling, is to be not less than 6m from a window or glazed door, to a habitable room, of another dwelling on the same site; and (iv) if the dwelling is a multiple dwelling, is to be not less than 6m from the private open space of another dwelling on the same site. (b) the window or glazed door: (i) is to be offset, in the horizontal plane, not less than 1.5m from the edge of a window or glazed door, to a habitable room of another dwelling;	**P2** A window or glazed door, to a habitable room of a 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.

(ii) is to have a sill height of not less than 1.7m above the floor level or have fixed obscure glazing extending to a height of at least 1.7m above the floor level; or (iii) is to have a permanently fixed external screen for the full length of the window or glazed door, to a height of not less than 1.7m above floor level, with a uniform transparency of not more than 25%.	

The proposal has been considered against A2. It does not comply with sub-clause (a) as windows and glazed doors to habitable rooms of dwellings are less than 6m from the Private Open Space of other dwellings. It does not comply with sub-clause (b) as the same windows and glazed doors are not offset less than 1.5m from the edge of a window or glazed door (to a habitable room of another dwelling) nor do they have a permanently fixed external screen for the full length of the window or glazed door. Thus, the proposal has been considered against P2 as follows:

- The windows and glazed doors of habitable rooms (namely bedrooms and living and dining spaces) with a floor level more than 1m above existing ground level (on Levels 1 and 2) do not face that of other dwellings on the site and adequate screening has been provided to minimise any overlooking to that on adjoining lots, satisfying sub-clause (a);
- Windows and glazed doors of habitable rooms (namely bedrooms and living and dining spaces) have screening and walling enclosures to minimise direct views to private open space of other dwellings, satisfying sub-clause (b).

On the basis of the above, the proposal satisfies P2.

Acceptable Solutions	Performance Criteria
A3 A shared driveway or parking space (excluding a parking space allocated to that dwelling) must be separated from a window, or glazed door, to a habitable room of a multiple dwelling by a horizontal distance of not less than: (a) 2.5m; or (b) 1m if: (i) it is separated by a screen of not less than 1.7m in height; or (ii) the window, or glazed door, to a habitable room has a sill height of not less than 1.7m above the shared driveway or parking space, or has fixed obscure glazing extending to a height of not less than 1.7m above the floor level.	**P3** A shared driveway or parking space (excluding a parking space allocated to that dwelling), must be screened, or otherwise located or designed, to minimise unreasonable impact of vehicle noise or vehicle light intrusion to a habitable room of a multiple dwelling.

Windows of habitable rooms on Levels 1 and 2 which face the shared driveway (being the Living and Dining Areas and Bedrooms respectively) are less than 1m distance from the shared driveway and thus are not compliant with A3. The proposal has therefore been considered against P3. The Level 1 habitable room facing the driveway is 3.8m above the shared driveway and separated by a 2m wide deck area, which is considered an adequate design to mitigate any noise and light impacts of vehicles utilising the area. Furthermore, the Level 2 habitable room facing the driveway is 6.2m above the area so is considered not to be affected by such impacts. On the basis of the above, the proposal satisfies P3.

11.4.7 Frontage Fences

Objective:	
The height and transparency of frontage fences: (a) provides adequate privacy and security for residents; (b) allows the potential for mutual passive surveillance between the road and the dwelling; and (c) is reasonably consistent with that on adjoining properties.	
Acceptable Solutions	**Performance Criteria**
A1 No Acceptable Solution.[1]	**P1** A fence (including a free-standing wall) for a dwelling within 4.5m of a frontage must: (a) provide for security and privacy while allowing for passive surveillance of the road; and (b) be compatible with the height and transparency of fences in the street, having regard to: (i) the topography of the site; and (ii) traffic volumes on the adjoining road.

The fence enclosing open space of the multiple dwellings is directly on the boundaries of the Roope Street and Pirie Street frontages and has therefore been considered against P1 as follows:

- The fence provides adequate security due to a solid brick front wall 1.2m high (with brick columns at intervals) and aluminium slat fencing providing a uniform transparency of not less than 30% that allows passive surveillance, satisfying sub-clause (a);
- Fencing in the surrounding area varies in style and design, but has similar heights and levels of transparency, in an area with a gently sloping topography. Furthermore, as the road is local and thus traffic volumes are relatively low, the fencing is considered to provide adequate noise and visual separation between open space of the dwelling and the road, satisfying sub-clause (b).

On the basis of the above, the proposal satisfies P1.

11.4.8 Waste storage for multiple dwellings

Objective:	
To provide for the storage of garbage and recycling bins for multiple dwellings.	
Acceptable Solutions	**Performance Criteria**
A1 A multiple dwelling must have a storage area, for waste and recycling bins, that is an area of at least 1.5m^2 per dwelling and is within one of the following locations: (a) in an area for the exclusive use of each dwelling, excluding the area in front of the dwelling; or (b) in a common storage area with an impervious surface that: (i) has a setback of not less than 4.5m from a frontage; (ii) is not less than 5.5m from any dwelling; and (iii) is screened from the frontage and any dwelling by a wall to a height not less than 1.2m above the finished surface level of the storage area.	**P1** A multiple dwelling development must provide storage for waste and recycling bins that is: (a) capable of storing the number of bins required for the site; (b) screened from the frontage and dwellings; and (c) if the storage area is a common storage area, separated from dwellings on the site to minimise impacts caused by odours and noise.

The storage areas for waste and recycling bins for the proposed multiple dwellings cannot comply with A1 as they are located in front of the dwelling (thus excluding option a) and the area in

[1] An exemption applies for fences in this zone – see Table 5.6 in Exemptions

which they are located is pervious with a setback distance less than 4.5m from Pirie Street and only 3.2m from the dwelling (thus excluding option b). The proposal has instead been considered against P1 as follows:

- Each waste storage area is 0.9m^2, a size adequate of storing both a general waste and recycling bin, satisfying (a);
- Fencing which screens the waste storage bins from both the frontage with Pirie Street and from the open space areas of adjoining dwelling is 1.5m high, satisfying (b);
- As no common storage areas are proposed, sub-clause (c) is not applicable.

Based on the above, the proposal satisfies P1.

11.5 Development Standards for Subdivision

Subdivision is not proposed as a part of this application and these standards are not applicable.

4.2 Road and Railway Assets Code (E5.0)

The proposed development will maintain the existing access off of Pirie Street and incorporate a new access point off of Roope Street.

Therefore, the proposed development will require a new vehicle crossing and is anticipated to intensify the use of an existing access and accordingly, the code must be considered as per Clause E5.2.1 (a) and (b).

E5.5.1 Existing road accesses and junctions

None of the streets surround the subject site (i.e. Roope Street, Pirie Street and Flint Avenue) are a category 1 or 2 road, accordingly criteria A1/P1 are considered as not applicable.

The speed limits along all three roads are 50 km/hr, accordingly criteria A2/P2 are considered as not applicable.

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**
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 ***

Section 4 (Traffic Impacts) of the Traffic Impact Assessment (Appendix E) confirms that the proposed development will result in a traffic generation of 39 vehicles per day, with a peak of 4 vehicles per hour. The proposal is therefore compliant with A3.

E5.5.2 Exiting level crossings

There is no level crossings in the vicinity of the proposed works and so E5.5.2 existing level crossings is not applicable.

E5.6 Development Standards

E5.6.1 Development adjacent to roads and railway

This Clause is not applicable; as the subject site is not adjacent to a railway or category 1 or 2 roads in an area more than 60km/h.

E5.6.2 Road accesses and junctions

The speed limit along Pirie Street and Roope Street is 50 km/hr and accordingly criteria A1/P1 are considered as not applicable.

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**
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.	P2 For roads in an area subject to a speed limit of 60km/h or less, accesses and junctions must be safe and not unreasonably impact on the efficiency of the road, having regard to: (a) the nature and frequency of the traffic generated by the use; (b) the nature of the road; (c) the speed limit and traffic flow of the road; (d) any alternative access to a road; (e) the need for the access or junction; (f) any traffic impact assessment; and (g) any written advice received from the road authority.

As there is only a single two-way access off Roope Street, the proposal complies with A1.

E5.6.3 New level crossings

Clause E5.6.3 is not applicable, as there are no new level crossings proposed.

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**
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.	**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: (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.

Section 4 (Traffic Impacts) of the Traffic Impact Assessment (Appendix E) provides an assessment of the proposal against Clause E5.6.4, identifying the required Safe Intersection Sight Distance (SISD) as being 80m. It is confirmed that the proposal is compliant with A1.

4.3 Parking and Access Code (E6.0)

No use or development is exempt from this code as per Clause E6.4.1. The proposal has been assessed against the relevant provisions of the code.

E6.6 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**
A1 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; 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.	**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; (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.

The proposal includes 6 multiple dwellings, comprising 5 bedrooms each. As the site is not subject to a parking plan area adopted by Council nor subject to Clauses E6.6.5 to E6.6.10, the number of on-site car parking spaces must be in accordance with Table E6.1 which stipulates the following:

- 2 car parks for each dwelling with 2 or more bedrooms (i.e. 6 x 2 = 12); plus
- 1 dedicated visitor parking space per 4 dwellings (i.e. 6/4 = 1.5 rounded to 2)

On that basis, the proposed multiple dwelling development requires a total of 16 parking spaces.

The proposal provides for a total of 12 off street car parking spaces, including 1 off street visitor car parking space, as shown in the Ground Floor Plan (DA02) in Appendix C. Therefore, the proposal is not compliant with A1 and has instead been considered against P1 as follows:

- Car parking demand generated by the 5 bedroom units is considered to be adequately accommodated by the provision of two car parking spaces per unit with surplus car parking accommodated within on-street car parking within the surrounding locality, satisfying sub-clauses (a) and (b);
- The site is between 170m and 285m walking distance from public transport (Metro) bus stops on New Town Road, satisfying sub-clause (c);
- Given the proximity of public transport routes to the site and, slightly further afield, the intercity cycleway (640m north), there is opportunity for commute by bus and bicycle, satisfying sub-clause (d);
- No alternative arrangements for car parking provision are considered necessary as the proposal is only short of 4 off street parking places and there is adequate on-street parking in the surrounding locality, satisfying sub-clause (e);
- There is no reduction in car parking demand due to the sharing of car parking spaces by multiple uses thus sub-clause (f) is not considered applicable;
- As the site will be substantially redeveloped and parking demand is adequately catered for on-site and in the surrounding area, sub-clauses (g), (h) and (i) are not considered applicable;
- As there is no verified prior payment of a financial contribution in lieu of parking for the land and no relevant parking plan for the area adopted by Council, sub-clauses (j) and (k) are not considered applicable;
- As the site is not subject to the Local Heritage Code nor are the trees on the site listed in the Significant Tress List of the Significant Trees Code, sub-clauses (l) and (m) are not considered applicable.

On the basis of the above, the proposal satisfies P1.

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**
A2 Car parking spaces provided for people with a disability must: (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.	**P2** ...

The Building Code of Australia does not require disabled car parks for Class 2 buildings (a building containing 2 or more sole-occupancy units each being a separate dwelling) (b).

Hence (a) and (c) are not applicable and the proposal is considered compliant with Acceptable Solution A2.

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**
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, provided the existing number of motorcycle parking spaces is not reduced.	**P1** ...

As there are less than 19 parking places provided for, motorcycle parking is not required. Therefore, the proposal is considered compliant with A1.

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**
A1 The number of on-site bicycle parking spaces provided must be no less than the number specified in Table E6.2.	**P1** ...

Table E6.2 Number and Class of Bicycle Parking Spaces Required' only stipulates bicycle requirements for Residential Use if it is associated with 'Residential aged care home'. For all other use classes (i.e. other residential uses) there are no bicycle parking space requirements.

The proposed development does not provide any dedicated bicycling spaces.

The proposal is considered compliant with Acceptable Solution A1.

E6.6.10 Number of Car Parking Spaces - Residential Zones.

Objective:	
To facilitate the adaptive reuse of existing non-residential buildings in a residential zone so that the parking generated by that reuse has limited impacts on residential amenity.	
Acceptable Solution	**Performance Criteria**
A1 No on-site parking is required for: (a) food services uses up to 100m² floor area or 30 seats, whichever is the lesser; and (b) general retail and hire uses up to 100m² floor area; provided the use complies with the hours of operation specified for the relevant zone.	**P1** ...

As the proposal is only for a residential use, Clause E6.6.10 is not applicable to this application.

E 6.7 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**
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.	**P1** ...

As the site is only provided with 1 vehicle access point, it is compliant with A1.

As the site is not within the 'Central Business Zone', 'Particular Purpose Zone 4 - Calvary Healthcare Hospital Campus' or the 'Particular Purpose Zone 10 (Royal Hobart Hospital)', Clause E6.7.1 sub-clauses (A2) and (A3) are not applicable.

E6.7.2 Design

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**
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;	**P1** ...

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.	

Section 6 (Access and Parking) of the Concept Services Report (Appendix F) confirms that the proposal is compliant with A1. The singular access complies 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 in that:

(a) it has a minimum width of 3.6m with exceeds the requirements for a Category 1 driveway of a Class 1A parking facility onto a local street.
(b) The driveway will have less than 30 vehicle movements in a peak hour.
(c) The access location is not within the prohibited area shown in Figure 3.1 of AS2890.1.
(d) Sight distance at the access driveway for vehicles and pedestrians complies with the requirements of Figure 3.2 & 3.3 of AS2890.1.
(e) The gradient of the driveway is less than 20% and 2.5% across the footpath.
(f) Transitions to comply with the IPWEA standard drawing TSD-R09-v3.

On the basis of the above, sub-clause (a) is met and sub-clause (b) is not applicable as no commercial vehicle access is required.

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.	
Acceptable Solution	**Performance Criteria**
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** ...

Section 5 (Parking Assessment) of the Traffic Impact Assessment (Appendix E) confirms that vehicular passing areas are requires as the driveway access serves more than 5 spaces and the driveway exceeds 30 metres. As the width of the driveway access varies between 5.8 metres (for the majority of its length) and 7.7 metres, the driveway therefore automatically provides passing bays along its full length. Thus, the proposal is compliant with 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**
A1 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: (a) it serves no more than two dwelling units; (b) it meets a road carrying less than 6000 vehicles per day.	**P1** ...

All car parking spaces can be accessed via a forward entry and forward exit manoeuvre from the site's access on Roope Street, thus the proposal is compliant with A1.

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**
A1 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.	**P1** ...

Section 5 (Parking Assessment) of the Traffic Impact Assessment (Appendix E) provides an assessment against the requirements of AS2890.1, confirming that the proposal is compliant with A1.

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**
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.	**P1** ...

Section 6 (Access and Parking) of the Concept Services Report (Appendix F) confirms that the proposal is compliant with the Acceptable Solution (A1) due to the following:

- the driveways and parking areas are to be constructed from reinforced concrete or asphalt, satisfying sub-clause (a);
- the car parks are located within the basement floor and therefore do not contribute to stormwater runoff stormwater pit in the lowest corner of the driveway will allow the

drainage of any water to the properties' stormwater connection, satisfying sub-clause (b).

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**
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.	**P1** ...

Section 6 (Access and Parking) of the Concept Services Report (Appendix F) confirms that carpark lighting will be provided in accordance with the requirements of A1, achieving compliance.

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**
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.	**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.

Section 6 (Access and Parking) of the Concept Services Report (Appendix F) confirms that the proposed development satisfies P1 on the following basis:

- The internal carpark will have minimal visual impact on the streetscape other than the entryway, satisfying sub-clause (a);
- Enclosed parking areas has no amenity impact on neighbouring properties and the
- Streetscape, satisfying sub-clause (b);
- Enclosed parking areas are private, secure and can be actively protected via garage doors, etc, satisfying sub-clause (c).

Clause E6.7.9 to E6.7.11

Clauses E6.7.9 to E6.7.11 relate to Design of Motorcycle Parking Areas, Design of Bicycle Parking Facilities, and Bicycle End of Trip Facilities. However, Section 6 (Access and Parking) of the Concept Services Report (Appendix F) confirms that parking spaces for each of these transit types is not required thus the clauses have been excluded from this report.

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**
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.	**P1** ...

As the carpark is located behind the proposed building line of the development, the proposal is compliant with A1.

E6.7.13 Facilities for Commercial Vehicles

As a residential development, it is anticipated that commercial off-street development is not required and thus Clause E6.7.13 is not applicable.

E6.7.14 Access to a Road

Objective:	
To ensure that access to the road network is provided appropriately.	
Acceptable Solution	**Performance Criteria**
A1 Access to a road must be in accordance with the requirements of the road authority.	**P1** ...

Access to Roope Street is provided by a single 5.5m dual vehicle crossover to IPWEA standard dwg TSD-R09-V3, thus the proposal is compliant with A1.

4.4 Stormwater Management Code (E7.0)

This code applies to development requiring the management of stormwater (Clause E7.2.1) and no development is exempt from this code as per Clause E7.4.1. The proposal has been assessed against the relevant provisions of the code.

E7.7 Development Standards

E7.7.1 Stormwater Drainage and Disposal

Objective:	
To ensure that stormwater quality and quantity is managed appropriately.	
Acceptable Solution	**Performance Criteria**
A1 Stormwater from new impervious surfaces must be disposed of by gravity to public stormwater infrastructure.	**P1** Stormwater from new impervious surfaces must be managed by any of the following: (a) disposed of on-site with soakage devices having regard to the suitability of the site, the system design and water sensitive urban design principles; (b) collected for re-use on the site; (c) 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.

Section 5 (Stormwater) of the Concept Services Report (Appendix F) confirms that the development is compliant with the Acceptable Solution (A1) as the site will drain by gravity via the internal stormwater network and connect to the DN300 stormwater main located in the street as part of the development.

Acceptable Solution	**Performance Criteria**
A2 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: (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.

Section 5 (Stormwater) of the Concept Services Report (Appendix F) has identified that although car parking is provided for more than 6 cars, all but 2 carparks are located undercover and do not contribute to the site's stormwater runoff. Therefore, stormwater treatment is not required in order to meet the stormwater quality targets as detailed in Table E7.1. Thus, the development satisfies the Performance Criteria (P1).

Acceptable Solution	**Performance Criteria**
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** ...

Section 5 (Stormwater) of the Concept Services Report (Appendix F) has confirmed that the development is compliant with the Acceptable Solution (A3) due to the following:

a) The internal stormwater network and associated public stormwater branch extension will be sized to accommodate the 5% AEP runoff from the property based on it being 100% impervious. Due to a proposed reduction in impervious area and thus, a reduction in peak flows, no additional detention is required.
b) As the estimated existing peak catchment flow is 0.0248m³/s and the estimated new peak catchment flow is 0.0238m³/s.

Acceptable Solution	Performance Criteria
A4 A major stormwater drainage system must be designed to accommodate a storm with an ARI of 100 years.	**P4** ...

Section 5 (Stormwater) of the Concept Services Report (Appendix F) has confirmed that the development is compliant with the Acceptable Solution (A4) as the site external pavement levels and pathway connections to the front doors ensure surface water flows on the site drain away from the proposed buildings ensuring inundation of the proposed buildings does not occur in a 1% AEP storm event.

5 Conclusion & Recommendations

The proposal seeks to develop the site for residential development (multiple dwellings). The proposal includes demolition of the existing single storey (concrete block) building and associated fencing and driveway; removal of an existing tree; a new Right of Way adjoining the site's north eastern boundary; associated parking and vehicle circulation areas; provision of waste/storage areas for occupants of the development; and upgrade and provision of associated services.

The site of the proposed development is located within the Inner Residential Zone as well as the Royal Hobart Hospital Helipad Airspace Specific Area Plan.

The proposed development generates the following discretions under the *Hobart Interim Planning Scheme 2015* (the Scheme):

- 11.0 Inner Residential Zone (11.4 Development Standards for Buildings and Works)
  - Clause 11.4.3 Site coverage and private open space - P2;
  - Clause 11.4.4 Sunlight and overshadowing - P1;
  - Clause 11.4.6 Privacy - P1, P2, P3;
  - Clause 11.4.7 Frontage Fences - P1;
  - Clause 11.4.8 Waste storage for multiple dwellings - P1.
- E6.0 Parking and Access Code (E6.6 Use Standards)
  - E6.6.1 Number of Car Parking Spaces - P1;
  - E6.7.8 Landscaping of Parking Areas - P1;
- E7.0 Stormwater Management Code
  - E7.7.1 Stormwater Drainage and Disposal.

The proposal has been assessed against all relevant Scheme criteria and is found to either comply with Acceptable Solutions or satisfy relevant Performance Criteria.

The application is considered to be acceptable with respect to the Scheme requirements and therefore recommended for support by the Planning Authority.

APPENDIX A

Landowner Notification and Consent

Engineers & Planners

117 Harrington Street
Hobart 7000
Phone (03) 6231 2555
Fax (03) 6231 1535
infohbt@jmg.net.au

49-51 Elizabeth Street
Launceston 7250
Phone (03) 6334 5548
Fax (03) 6331 2954
infoltn@jmg.net.au

Johnstone McGee & Gandy Pty Ltd
ABN 76 473 834 852
ACN 009 547 139
as trustee for Johnstone McGee & Gandy Unit Trust

www.jmg.net.au

JMG Ref: J203140PH

22 March 2021

City of Hobart
Via email - coh@hobartcity.com.au

To whom it may concern,

43a PIRIE STREET, HOBART - LANDOWNER CONSENT FOR MAKING APPLICATIONS UNDER THE LAND USE PLANNING AND APPROVALS ACT 1993

We advise that JMG Engineers and Planners will prepare and lodge a development application with the City of Hobart on behalf of Tas Dream Pty Ltd for development of multiple dwellings (6 three storey units) at 43a Pirie Street, Hobart (CT 107319/1).

There will be installation and upgrade of services associated with the proposed development (including power, communications, water, sewer and stormwater connections associated with the development) on two road reserves vested in the City of Hobart. Details of these are summarised as follows:

- Roope Street Road Reserve - installation of a new vehicle crossover;
- Pirie Street Road Reserve - connection of the new private water main connection (DN32) into the existing TasWater main (DN100).

Detail of the proposed works can be found in the attached drawing set and concept services report (within Attachment A and Attachment B respectively).

In accordance with s.52(1B) of the *Land Use Planning and Approvals Act 1993*, JMG Engineers and Planners seeks that the City of Hobart provides landowner consent to make the abovementioned applications.

Yours faithfully
JOHNSTONE McGEE & GANDY PTY LTD

Gabrielle Priest
TOWN PLANNER

Engineers & Planners

117 Harrington Street
Hobart 7000
Phone (03) 6231 2555
Fax (03) 6231 1535
infohbt@jmg.net.au

49-51 Elizabeth Street
Launceston 7250
Phone (03) 6334 5548
Fax (03) 6331 2954
infoltn@jmg.net.au

Johnstone McGee & Gandy Pty Ltd
ABN 76 473 834 852
ACN 009 547 139
as trustee for Johnstone McGee & Gandy Unit Trust

www.jmg.net.au

JMG Ref: J203140PH

22 March 2021

Angela Margaret Hermanis, Eric Eduard Hermanis
& Edith Hermanis
25 Cheviot Road
West Moonah Tas 7009

Dear Owner(s),

43A PIRIE STREET, NEW TOWN - DEVELOPMENT APPLICATION NOTIFICATION

We advise that JMG Engineers and Planners seeks to make a development application on behalf of Tas Dream Pty Ltd for development of land at 43a Pirie Street, New Town. This is for a residential development comprising 6 units, constituting a complete redevelopment of the site. This includes works on your property, being 43 Pirie Street in New Town.

These works consist of the following:

- Removal and reinstatement of the existing private sewer main that connects to the TasWater DN150 sewer main on your property;
- Connecting new internal sanitary drainage pipework to the existing TasWater manhole located at the center of your property;
- Connecting a newly installed private stormwater main and grate into the existing stormwater connection in the northern corner of your property.

Accordingly, we write to notify you of the application, in accordance with our statutory obligations under section 52(1) of the Land Use Planning and Approvals Act 1993.

More information will be available from Hobart City Council when the application is formally advertised.

Yours faithfully
JOHNSTONE McGEE & GANDY PTY LTD

Gabrielle Priest
TOWN PLANNER

APPENDIX B

Title Information

RESULT OF SEARCH

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

SEARCH OF TORRENS TITLE

VOLUME	FOLIO
107319	1
EDITION	DATE OF ISSUE
4	11-Mar-2020

SEARCH DATE : 19-Nov-2020
SEARCH TIME : 09.00 AM

DESCRIPTION OF LAND

City of HOBART
Lot 1 on Diagram 107319
Derivation : Whole of Lot 1, 1369 m2 Granted to The Crown
Derived from X5571 Application B691087

SCHEDULE 1

B675457, B765984 & B765985 TRANSFER to ANGELA MARGARET HERMANIS and ERIC EDUARD HERMANIS (jointly as between themselves) of one undivided 1/2 share and EDITH HERMANIS of one undivided 1/2 share as tenants in common Registered 13-Oct-1994 at 12.02 PM

SCHEDULE 2

B691087 Land is limited in depth to 15 metres, excludes minerals and is subject to reservations relating to drains sewers and waterways in favour of the Crown
PG 331/22BURDENING EASEMENT: Right of Carriageway [appurtenant to Folio of the Register Volume 4111 Folio 14] over the Right of Way shown on Diagram No 107319
B675457 FENCING CONDITION in Transfer

UNREGISTERED DEALINGS AND NOTATIONS

M818123 PRIORITY NOTICE reserving priority for 60 days
CHG/NAME ERIC EDUARD HERMANIS TO ERIC EDWARD HERMANIS
TRANSFER ERIC EDWARD HERMANIS AND ANGELA MARGARET HERMANIS ATF ERIC HERMANIS FAMILY TRUST TO ERIC EDWARD HERMANIS AND ANGELA MARGARET HERMANIS ATF THE ERIC HERMANIS TRUST
TRANSFER ERIC EDWARD HERMANIS AND ANGELA MARGARET HERMANIS AND ERIC EDWARD HERMANIS AND ANGELA MARGARET HERMANIS ATF THE ERIC HERMANIS TRUST TO TASDREAM DEVELOPMENT PTY LTD Lodged by DOBSON MITCHELL on 26-Mar-2020 BP: M818123
E155370 ANGELA MARGARET HERMANIS and ERIC EDWARD HERMANIS Application Trustee Act 1898 Lodged by DOBSON

RESULT OF SEARCH

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

MITCHELL on 06-May-2020 BP: M817670

M817670 ANGELA MARGARET HERMANIS and ERIC EDWARD HERMANIS (jointly as between themselves) of one undivided 1/2 share and EDITH HERMANIS of one undivided 1/2 share as tenants in common Lodged by DOBSON MITCHELL on 06-May-2020 BP: M817670

M817929 TRANSFER to TASDREAM DEVELOPMENT PTY LTD Lodged by DOBSON MITCHELL on 06-May-2020 BP: M817670

FOLIO PLAN

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

OWNER
THE CROWN

FOLIO REFERENCE
~~Cons~~ (34/9576 SURR.)
SEC. 27 B 691087
GRANTEE
~~Part of 157+126~~
~~Granted to Charles Swanston~~
WHOLE OF LOT 1, 1369m²
THE CROWN

PLAN OF SURVEY

BY SURVEYOR

LOCATION
CITY OF HOBART

SCALE 1: 500 LENGTHS IN METRES

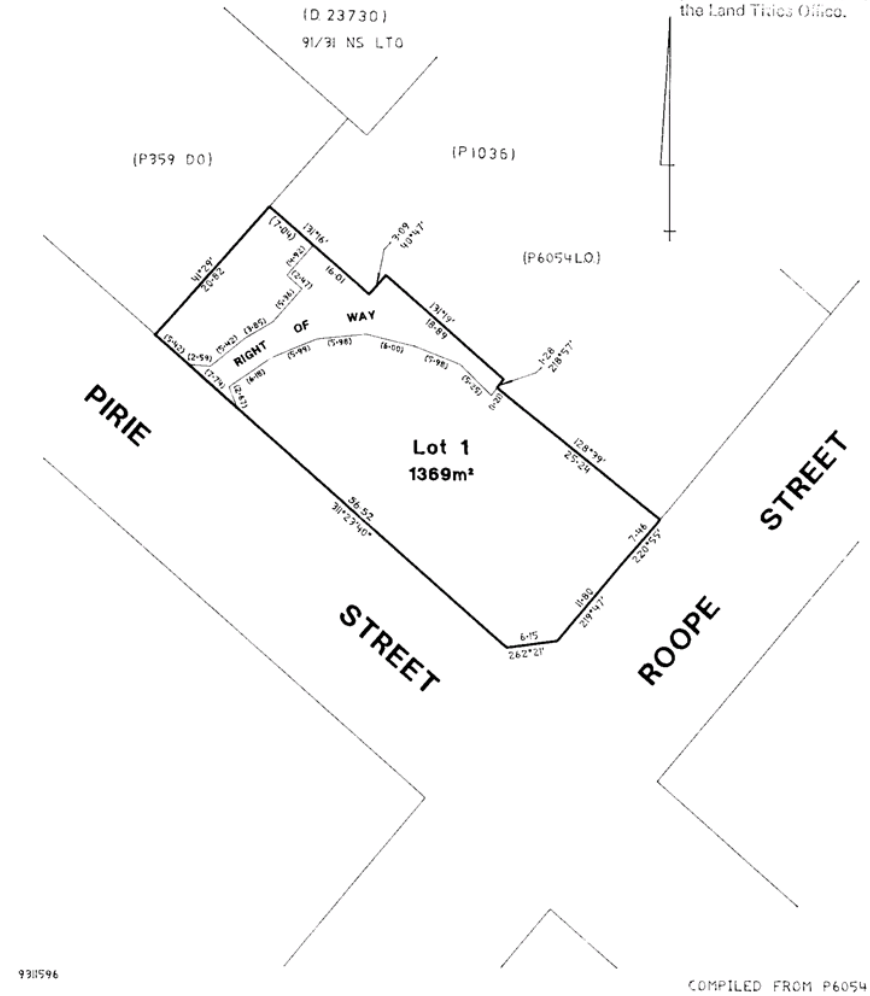
REGISTERED NUMBER
D107319

APPROVED
~~EFFECTIVE FROM~~ 7 SEP 1993
Recorder of Titles

TASMAP MUN. No. 21 (SHEET No. 5225) | LAST UPI No. 6247 | LAST SURVEY PLAN No.P6054 L.O. | ALL EXISTING SURVEY NUMBERS TO BE CROSS REFERENCED ON THIS PLAN

COMPILED PLAN

This plan was prepared by the Survey [illegible] and has been examined at the Land Titles Office.



COMPILED FROM P6054

RESULT OF SEARCH

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

SEARCH OF TORRENS TITLE

VOLUME	FOLIO
107319	1
EDITION	DATE OF ISSUE
4	11-Mar-2020

SEARCH DATE : 19-Nov-2020
SEARCH TIME : 09.00 AM

DESCRIPTION OF LAND

City of HOBART
Lot 1 on Diagram 107319
Derivation : Whole of Lot 1, 1369 m2 Granted to The Crown
Derived from X5571 Application B691087

SCHEDULE 1

B675457, B765984 & B765985 TRANSFER to ANGELA MARGARET HERMANIS and ERIC EDUARD HERMANIS (jointly as between themselves) of one undivided 1/2 share and EDITH HERMANIS of one undivided 1/2 share as tenants in common Registered 13-Oct-1994 at 12.02 PM

SCHEDULE 2

B691087 Land is limited in depth to 15 metres, excludes minerals and is subject to reservations relating to drains sewers and waterways in favour of the Crown
PG 331/22BURDENING EASEMENT: Right of Carriageway [appurtenant to Folio of the Register Volume 4111 Folio 14] over the Right of Way shown on Diagram No 107319
B675457 FENCING CONDITION in Transfer

UNREGISTERED DEALINGS AND NOTATIONS

M818123 PRIORITY NOTICE reserving priority for 60 days
CHG/NAME ERIC EDUARD HERMANIS TO ERIC EDWARD HERMANIS
TRANSFER ERIC EDWARD HERMANIS AND ANGELA MARGARET HERMANIS ATF ERIC HERMANIS FAMILY TRUST TO ERIC EDWARD HERMANIS AND ANGELA MARGARET HERMANIS ATF THE ERIC HERMANIS TRUST
TRANSFER ERIC EDWARD HERMANIS AND ANGELA MARGARET HERMANIS AND ERIC EDWARD HERMANIS AND ANGELA MARGARET HERMANIS ATF THE ERIC HERMANIS TRUST TO TASDREAM DEVELOPMENT PTY LTD Lodged by DOBSON MITCHELL on 26-Mar-2020 BP: M818123
E155370 ANGELA MARGARET HERMANIS and ERIC EDWARD HERMANIS Application Trustee Act 1898 Lodged by DOBSON

RESULT OF SEARCH

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

MITCHELL on 06-May-2020 BP: M817670

M817670 ANGELA MARGARET HERMANIS and ERIC EDWARD HERMANIS (jointly as between themselves) of one undivided 1/2 share and EDITH HERMANIS of one undivided 1/2 share as tenants in common Lodged by DOBSON MITCHELL on 06-May-2020 BP: M817670

M817929 TRANSFER to TASDREAM DEVELOPMENT PTY LTD Lodged by DOBSON MITCHELL on 06-May-2020 BP: M817670

RESULT OF SEARCH

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

SEARCH OF TORRENS TITLE

VOLUME	FOLIO
199999	1
EDITION	DATE OF ISSUE
2	11-Mar-2020

SEARCH DATE : 24-Mar-2021
SEARCH TIME : 05.50 PM

DESCRIPTION OF LAND

City of HOBART
Lot 1 on Plan 199999
Derivation : Whole of Lot 39436 Gtd. to E.E. Hermanis & Others
Prior CT 4111/14

SCHEDULE 1

B765985 TRANSFER to ANGELA MARGARET HERMANIS and ERIC EDUARD HERMANIS (jointly as between themselves) of one undivided 1/2 share and EDITH HERMANIS of one undivided 1/2 share as tenants in common Registered 13-Oct-1994 at 12.02 PM

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
BENEFITING EASEMENT: a right of carriageway over the land marked Right of Carriageway on Plan No. 199999

UNREGISTERED DEALINGS AND NOTATIONS

M818127 PRIORITY NOTICE reserving priority for 60 days
CHG/NAME ERIC EDUARD HERMANIS TO ERIC EDWARD HERMANIS
TRANSFER ERIC EDWARD HERMANIS AND ANGELA MARGARET HERMANIS ATF ERIC HERMANIS FAMILY TRUST TO ERIC EDWARD HERMANIS AND ANGELA MARGARET HERMANIS ATF THE ERIC HERMANIS TRUST
TRANSFER ERIC EDWARD HERMANIS AND ANGELA MARGARET HERMANIS AND ERIC EDWARD HERMANIS AND ANGELA MARGARET HERMANIS ATF THE ERIC HERMANIS TRUST TO TASDREAM 2 PTY LTD AS TRUSTEE OF THE AUSTRALIAN DREAM 2 TRUST
Lodged by DOBSON MITCHELL on 26-Mar-2020 BP: M818127
E155370 ANGELA MARGARET HERMANIS and ERIC EDWARD HERMANIS Application Trustee Act 1898 Lodged by DOBSON MITCHELL on 06-May-2020 BP: M817670
M817670 ANGELA MARGARET HERMANIS and ERIC EDWARD HERMANIS (jointly as between themselves) of one undivided 1/2

RESULT OF SEARCH

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

share and EDITH HERMANIS of one undivided 1/2 share as tenants in common Lodged by DOBSON MITCHELL on 06-May-2020 BP: M817670

M817936 TRANSFER to TASDREAM 2 PTY LTD Lodged by DOBSON MITCHELL on 06-May-2020 BP: M817670

FOLIO PLAN

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

OS D 435

ANNEXURE TO **CERTIFICATE OF TITLE** / **FOLIO OF REGISTER**

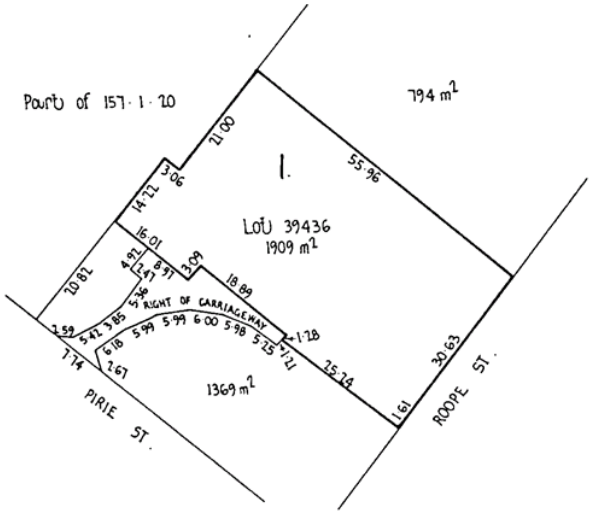
VOL. 4111 FOL. 14

Recorder of Titles

199999

HOBART

Whole of Lot 39436 Gtdl. to
E E Hermanus & Others
Meas. in Metres



APPENDIX D

Arborist Report

PHILIP JACKSON-*Arborist & Tree Management Services*

Ref: newtown.pirie43a.aia

ARBORICULTURAL IMPACT ASSESSMENT & TREE PROTECTION SPECIFICATION

PROPOSED 6 UNIT DEVELOPMENT 43a PIRIE ST, NEW TOWN

February 2021

Prepared for: MinD Architects

Prepared by: Philip Jackson

P: 0447 759865 E: tastreereports@gmail.com W: www.tastreereports.com ABN 36 943 862547

TABLE OF CONTENTS

EXECUTIVE SUMMARY

1. This Arboricultural Impact Assessment (AIA) & Tree Protection Specification has been prepared for MinD Architetcts. The report has been prepared to support the assessment of a Development Application for a proposed 6 unit development at 43a Pirie St, New Town.

2. Four (4) trees were assessed. All of the subject trees were assigned a Retention Value of RV2.

3. The existing concrete driveway and block paving hardstand is within the SRZ and TPZ of trees T1, T2 & T4. Removal of these surfaces and underlying sub-base could damage roots growing adjacent to and/or underneath them. In order to minimise the risk of root damage, demolition/removal of these surfaces within the TPZs of the subject trees should be carefully undertaken and the exposed underlying soil levels covered with appropriate ground protection as specified in Section 6.2 until new surfacing/landscaping is installed.

4. The proposed new driveway alignment within the TPZs of tree T4 & T2 is almost entirely within the footprint of the existing driveway and hardstand. Achievement of the new driveway levels will likely require some excavation into the underlying soil profile, however these should not result in any adverse impact on T4 provided they are carried out as specified in Section 6.3.

5. Various amounts of fill will be required beneath the new concrete driveway surface in order to achieve the FSLs and required fall to the new grated pit. It will be feasible to avoid adverse impact by placing the new driveway over a gap-graded (no fines) aggregate (consolidated, but not heavily compacted) rather than on a compacted FCR sub-grade within the TPZ of T4. This would minimise compaction damage to the underlying root system and provide some ongoing moisture penetration and aeration to the root zone. The extent of encroachment of the new driveway into the TPZ of T2 is acceptable and shouldn't have an adverse impact on the tree.

6. In order to minimise the impact of new driveway within the TPZ of T4 falls and openings should be provided for water and air to enter the underlying soil by forming 50 mm diameter holes in the construction of a slab at regular spacings of 300 mm to 600 mm (as determined by an engineer) and backfilling the resulting holes with no-fines gravel or aggregate. A structural drainage layer, such as 30mm thick Altantis Drainage Cell (wrapped in geofabric material) or equivalent, would also improve aeration to the root zone.

7. Care should also be taken when forming the fill batter behind the driveway kerb in the vicinity of the trunk of tree T4. The toe of the batter should be less than 500mm from the base of the tree and batter material should allow water and air exchange with the underlying soil surface. Depending on the finished height above the existing level, it may be more appropriate to install some type of permanent edging within the SRZ of T4.

8. Excavations for the installation of the new stormwater lines (and grated pit) within the TPZs of T1, T2 & T4 will result in acceptable encroachments of <10% of the TPZ area of each tree and should not result in any adverse impact provided they are carried out as specified in Section 6.3.

9. Excavations for the footing of unit 1 within the TPZ of T4 are beyond the excavation alignment of the new stormwater lines and, as such, will not further impact the root zone of this tree.

10. Although there are no details provided regarding landscaping works for the proposed new communal garden within the TPZ of treesT1, T2, and T4 any excavation into original undisturbed soil, especially mechanical excavation, has the potential to damage fibrous and woody roots of the subject trees and should be avoided. Similarly any significant filling/grade changes have the potential to damage tree roots and should be assessed by an aborist before implementation. In addition soil levels should never be raised to a point where a tree trunk is covered where it was previously exposed to air.

11. Tree T3 is entirely within the footprint of unit 1 and will need to be removed.

1.0 INTRODUCTION

1.1 Background

1.1.1 This Arboricultural Impact Assessment (AIA) & Tree Protection Specification has been prepared for MinD Architects to support the assessment of a Development Application for construction of 6 new residential units at 43a Pirie St, New Town (the site).

1.1.2 The purpose of this report is to determine the potential impact of the proposed works on relevant existing trees at the site and, where appropriate, make recommendations for amendments to the design or construction methods to minimise adverse impacts on them.

1.1.3 This report has been prepared in accordance and with reference to the objectives of the *Hobart Interim Planning Scheme 2015* and the *Australian Standard for Protection of Trees on Development Sites (AS4970)*. This report complies with '*2.3.5 Arboricultural Impact Assessment*' of AS4970.

1.1.4 I conducted a site inspection on 17th February 2021. Relevant inspection methods and background administrative information are presented in **Appendix 4**.

1.2 Documents & Plans Referenced

1.2.1 The conclusions and recommendations in this report are based on the findings from the site inspection, discussions with the client, and analysis of the following plans and documents:

- "***Driveway Pavement Plans"*** Dwg No:C02 Rev: P1; Project No: J203140PH ;Prepared by: JMG Engineers & Planners Dated: 23/02/21
- *"**Existing & Demolition Plan"*** Dwg No: DA01 Rev: 2; Project No: 2056; Prepared by: *MinD Architects; dated: September 2019*
- DA Plan Set, Sheets *DA02-DA04 Rev:4* Project No: 2056 Prepared by: *MinD Architects; dated: September 2019*

1.3 Specific Report Limitations

1.3.1 All plans are based on provided information, are illustrative and intended for design purposes only. They should only be used relating to tree issues and are not suitable for any other purpose. Although all data have been verified as far as possible there is no guarantee, nor responsibility for the accuracy of information provided by others.

1.3.2 No section drawings of the proposed driveway or landscape designs for the proposed communal garden were available at the time of report preparation.

1.3.2 There is no warranty or guarantee, expressed or implied that problems or deficiencies regarding the subject tree(s) or the site may not arise in the future. Information contained in this report covers only the subject tree(s) assessed and reflects their health and structural condition at the time of inspection.

2.0 THE SITE

2.0.1 The site is a developed ~1380m2 residential property (PID 5682688; Title Ref 107319/1) located at 43a Pirie St, New Town The site is located within the Hobart City Local Government Area and the land is zoned "11.0: Inner Residential" in the *Hobart Interim Planning Scheme 2015* (The Scheme). The site is subject to the 'Specific Area Plan' Code Overlay 116.SAP.3 of The Scheme.

***Figure 1**: The Subject Site (yellow outline) with the subject trees indicated (Source –www.thelist.tas.gov.au)*

2.0.2 The site is slightly sloping with an northerly aspect. The site is surrounded by residential properties with its southern western boundary making up the property frontage to Pirie St.

3.0 THE SUBJECT TREES

3.0.1 Four (4) trees comprising 2 English Oak (*Quercus robur*) and 2 Common Lime *Tilea x* Europa) were assessed. Observations regarding the health, structural condition, Useful Life Expectancy, Landscape Significance and Retention Value of the subject tree are presented in the Tree Schedule in **Appendix 2.**

3.0.2 The subject trees are all even aged and are estimated to be over 60 years old. They all have large canopies, are prominently visible from outside the subject property and make a positive contribution to the visual amenity of the local environs. All of the assessed trees were assigned a Retention Value RV2.

4.0 TREES AND DEVELOPMENT (AS-4970)

4.1 Tree Protection & Structural Root Zones

4.1.1 *Australian Standard 4970 Protection of Trees on Development Sites (2009)* (AS-4970) outlines that a **Tree Protection Zone** (TPZ) should be created to protect a tree and its growing environment throughout the development process. The theoretical TPZ is calculated as a radial measurement based on twelve (12) times the tree's Diameter at Breast Height (DBH)(see figure 2 below). This formula is based on extensive research and is generally accepted within the arboricultural industry as being suitable for calculating areas designed to maintain the long term viability of trees on development sites.

4.1.2 The intention of the TPZ is to ensure protection of the root system and canopy from potential damage from construction works and ensure the long-term health and stability of each tree to be retained. Incursions to the root zone often occur due to excavations, changes in ground levels, (either lowering or raising the grade), trenching or other forms of soil disturbance such as ripping, grading or inverting the soil profile. Such works can cause damage or loss of part of the root system, leading to an adverse impact on the tree.

4.1.3 Ideally works should be avoided within the TPZ. Where works within the TPZ are unavoidable, exploratory excavation and/or root mapping can be undertaken to provide information on the size and number of roots located along a specified line of excavation. This information helps to identify the level of root damage that would result from an excavation and therefore the potential impact the works may have on the tree. Root sensitive design and construction techniques can then be specified based on the results of exploratory root trenching/mapping.

4.1.4 In addition to the TPZ, AS-4970 provides calculations to determine a tree's **Structural Root Zone** (SRZ). The SRZ is described in AS-4970 as *"the area around the base of a tree required for the tree's stability in the ground. This zone considers a tree's structural stability only, not the root zone required to maintain the trees vigour and long-term viability, which will usually be a much larger area"*. Severance of structural roots (>25mm Ø) within the SRZ is not recommended as it may lead to the destabilisation and/or decline of the tree.

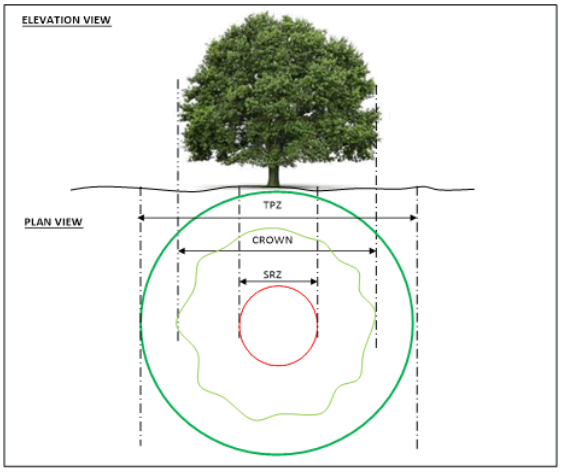


***Figure 2**: Indicative Tree Protection Zone and Structural Root Zone (AS-4970)*

4.1.5 The TPZ & SRZ of the subject trees have been calculated in accordance with the AS-4970 and are included in the Tree Assessment Schedule **(Appendix 2)**.

4.2 Acceptable Incursions to the Tree Protection Zone.

4.2.1 Where encroachment to the TPZ is unavoidable, an incursion to the TPZ of not exceeding 10% of the area of the TPZ and outside the SRZ can be acceptable. Greater incursions to the TPZ may result in an adverse impact on the tree. Indicative levels of root zone encroachment are shown in figure 3 below. Various examples of acceptable incursions are also shown in **Appendix 4**.

4.2.2 Where incursions greater than 10% of the TPZ are unavoidable, exploratory excavation using non-destructive methods may be required to evaluate the extent of the root system affected and determine whether or not the tree can remain viable.

4.2.3 Trees with greater than 25% of the (TPZ) impacted by construction are generally recommended for removal. However different types of construction incursions (e.g. fill, cut, services, pavement type, retaining walls) produce varying likely tree impacts and each situation must be assessed in its own context. Existing constraints to root development also vary the TPZ. Compacted fill can be equally as damaging to tree longevity as root development is restricted within heavily compacted soils.

4.3 Acceptable Encroachments To The Canopy

4.3.1 The removal of a small portion of the crown (foliage and branches) is generally tolerable provided that the extent of pruning required is less than 10% of the total foliage volume of the tree and the removal of branches does not create large wounds or disfigure the natural form and habit of the tree. All pruning cuts must be undertaken in accordance with AS 4373-*Pruning of Amenity Trees*. This generally involves reduction of the affected branches back to the nearest branch collar at the junction with the parent branch, rather than at an intermediate point. The latter is referred to as "lopping" and is not an acceptable arboricultural practice. Generally speaking, the minimum pruning required as possible to accommodate any proposed works is desirable. Extensive pruning can result in a detrimental impact on tree health and may lead to exposure of remaining branches to wind forces that they were previously sheltered from, leading to a greater risk of branch failure.

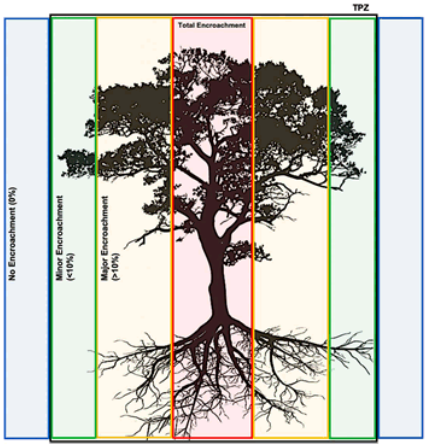


***Figure 3**: Indicative levels of root zone encroachment*

5.0 PROPOSED DEVELOPMENT

5.1 The Proposal

5.1.1 The relevant components of the proposed development include:

- Removal of the existing degraded concrete driveway, sub-base and crossover onto Pirie St.
- Removal of existing block paving hard stand and sub-base.
- Reinstatement of the crossover, apron, footpath and kerb & channel onto Pirie St.
- Construction of a new driveway and crossover onto Roope St
- Excavations for the footing of Unit 1.
- Excavations for a new storm water line connecting to the existing main on Pirie St.
- Installation of a new stormwater line, spoon drain and grated pit to connect to a new stormwater main at the shared boundary with 43 Pirie St.
- landscaping for a new communal garden

5.2 Impact Assessment

5.2.1 The intention of this assessment is to evaluate the likely impact of the proposed works on the subject tree(s). A summary of the impact of the proposed works on the subject trees is shown in the Tree schedule **Appendix 3**. The following details have been considered as part of this assessment:

- Existing Relative Levels (R.L);
- Tree Protection Zone (TPZ);
- Structural Root Zone (SRZ);
- Footprint and envelope of the proposed works;
- Incursions to the TPZ & SRZ,
- Incursions to the tree canopy;
- Assessment of the likely impact of the works on existing tree(s).

5.2.2 The existing concrete driveway and block paving hardstand is within the SRZ and TPZ of trees T1, T2 & T4. Removal of these surfaces and underlying sub-base could damage roots growing adjacent to and/or underneath them. In order to minimise the risk of root damage, demolition/removal of these surfaces within the TPZs of the subject trees should be carefully undertaken in accordance with the specifications outlined in Section 6.3 and the exposed underlying soil levels covered with appropriate ground protection until new surfacing/landscaping is installed.

5.2.3 The proposed new driveway alignment within the TPZs of tree T4 & T2 is almost entirely within the footprint of the existing driveway and hardstand. The new driveway offsets from T4 are 1.5m southwest at FSL 41.46 (490mm above existing RL), 2.6m east at FSL 41.40 (280mm above existing RL) and 2.6m south at FSL 41.43 (280mm above existing RL). These levels grade up to FSL 41.50 (770mm above existing RL) at the driveway's southwestern extent (which is offset 5.9m east of T2) and down to FSL 41.35 (close to existing RL) at the location of the new grated pit. Achievement of these levels will likely require some excavation into the underlying soil profile, including for the installation of the spoon drain and grated pit along the south eastern edge of the driveway. However when the ~200mm of existing surface and sub-base are taken into account these excavations will be relatively minor and constitute a small portion of the TPZ of T4. As such any required excavations for the grated pit, spoon drain and driveway surface should not result in any adverse impact on T4 provided they are carried out as specified in Section 6.3.

5.2.4 Various amounts of fill will be required beneath the new concrete driveway surface in order to achieve the FSLs and required fall to the new grated pit. Placement of fill material (typically Fine Crushed Rock) and compaction to engineering standards within the SRZ/TPZ may result in an adverse impact on T4. However, it would be feasible to avoid adverse impact by placing the new driveway over a gap-graded (no fines) aggregate (consolidated, but not heavily compacted) rather than on a compacted FCR sub-grade within the TPZ of T4. This would minimise compaction damage to the underlying root system and provide some ongoing moisture penetration and aeration to the root zone. The extent of encroachment of the new driveway into the TPZ of T2 is acceptable and shouldn't have an adverse impact on the tree.

5.2.5 In order to minimise the impact of new driveway within the TPZ of T4 falls and openings should be provided for water and air to enter the underlying soil (the necessary liner can be penetrated through the falls or openings once the concrete has set). This can be achieved by forming 50 mm diameter holes in the construction of a slab at regular spacings of 300 mm to 600 mm (as determined by an engineer) and backfilling the resulting holes with no-fines gravel or aggregate. A structural drainage layer, such as 30mm thick Altantis Drainage Cell (wrapped in geofabric material) or equivalent, would also improve aeration to the root zone.

5.2.6 Care should also be taken when forming the fill batter behind the driveway kerb in the vicinity of the trunk of tree T4. The toe of the batter should be less than 500mm from the base of the tree and batter material should allow water and air exchange with the underlying soil surface. Depending on the finished height above the existing level, it may be more appropriate to install some type of permanent edging within the SRZ of T4.

5.2.7 Excavations for the installation of the new stormwater lines (and grated pit) within the TPZs of T1, T2 & T4 will result in acceptable encroachments of <10% of the TPZ area of each tree and should not result in any adverse impact provided they are carried out as specified in Section 6.3.

.

5.2.8 Excavations for the footing of unit 1 within the TPZ of T4 are beyond the excavation alignment of the new stormwater lines and, as such, will not further impact the root zone of this tree.

5.2.9 Although there are no details provided regarding landscaping works for the proposed new communal garden within the TPZ of treesT1, T2, and T4 any excavation into original undisturbed soil, especially mechanical excavation, has the potential to damage fibrous and woody roots of the subject trees and should be avoided. Similarly any significant filling/grade changes have the potential to damage tree roots and should be assessed by an aborist before implementation. In addition soil levels should never be raised to a point where a tree trunk is covered where it was previously exposed to air.

5.2.10 Tree T3 is entirely within the footprint of unit 1 and will need to be removed.

6.0 TREE PROTECTION SPECIFICATION

6.1 Arboricultural Supervision

6.1.1 An Arborist (the Project Arborist) experienced in tree protection on construction sites *and* having gained a minimum arboricultural qualification of Australian Qualifications Framework (AQF) Certificate Level 5 should be engaged and the site specific requirements for tree protection fencing, temporary TPZ access, and other specific tree protection measures confirmed through consultation between the Site Manager and the Project Arborist prior to the commencement of site establishment and construction work on the site. In addition the Project Arborist should oversee any excavation, machine trenching, compacted fill placement and other designated site specific activities within the TPZ of all retained trees.

6.2 Tree Protection

6.2.1 The TPZ is the area surrounding retained trees that must be protected from any disturbance by the construction activity. In practice, this can be done by any combination of fencing and ground protection to be finalised and agreed to by the Project Arborist. Whether the TPZ is protected by fencing or ground protection, all the protective measures should be installed before the start of any site works that could affect trees. ***No protective measures should be removed or temporarily dismantled without consulting the Project Arborist.*** Furthermore, the condition of all the protective measures should be regularly monitored to ensure they remain fit for purpose. The main means of preventing damage to trees and their root zones in the TPZ are fencing, barriers and ground protection. Where possible following activities should be avoided within specified Tree Protection Zones:-

- Excavations and trenching (with exception of approved works);
- Ripping or cultivation of soil;
- Mechanical removal of vegetation;
- Soil disturbance or movement of natural rock;
- Soil level changes including the placement of fill material
- Movement and storage of plant, equipment & vehicles;
- Erection of site sheds;
- Affixing of signage or hoardings to trees;
- Storage of building materials, waste and waste receptacles;
- Disposal of waste materials and chemicals including paint, solvents, cement slurry, fuel, oil and other toxic liquids;
- Other physical damage to the trunk or root system; and
- Any other activity likely to cause damage to the tree.

6.2.2 **Tree Protection Fencing**: Protective fencing will be installed at the locations shown on the Tree Protection Plan in Appendix 1 by the heavy pink line. Where Tree Protection Zones merge a single fence encompassing the area is deemed to be adequate. Existing site boundary fences may form part of the enclosure. Appropriate signage shall be installed on

the fencing to prevent unauthorised movement of plant and equipment or entry to the Tree Protection Zone. The precise form of the fencing can vary, provided it is fit for purpose in that it effectively restricts access and damaging activities within the TPZ that it encloses (see figure 4 below). As a minimum the fence should consist of temporary chain wire panels 1.8 metres in height, supported by steel stakes as required and fastened together and supported to prevent sideways movement using corner braces where required.

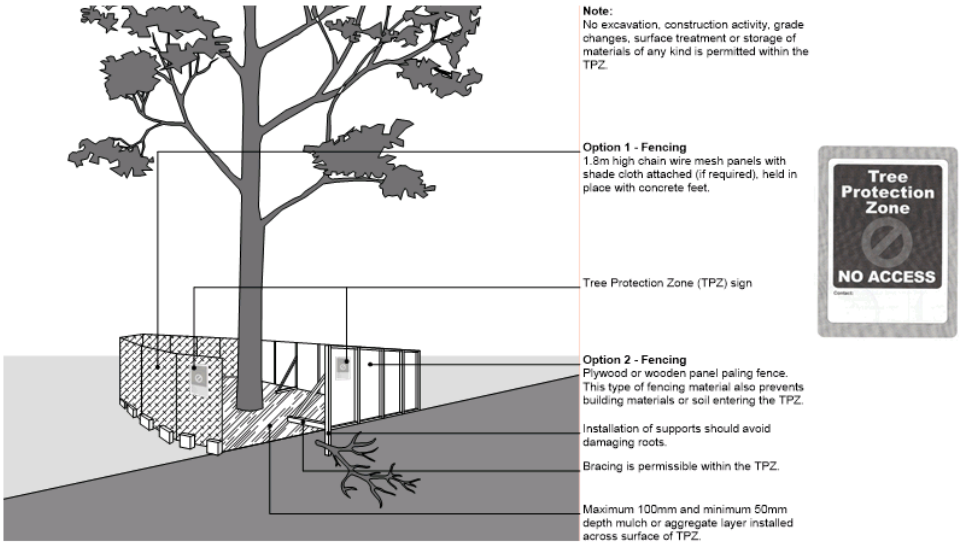


***Figure 4**- Detail of tree Protection Fencing and Signage*

6.2.3 **Trunk Protection:** Where provision of tree protection fencing is in impractical due to its proximity to the proposed construction footprint, trunk protection shall be erected around nominated trees to avoid accidental damage, as indicated by a blue box on the Tree Protection Plan (**Appendix 1**). The trunk protection shall consist of a layer of carpet underfelt (or similar) wrapped around the trunk, followed by 1.8 metre lengths of softwood timbers (90 x 45mm in section) aligned vertically and spaced evenly around the trunk at 150mm centres (i.e. with a 50mm gap) and secured together with 2mm galvanised wire or galvanised hoop strap as shown in **Figure 5**. Recycled timber (such as demolition waste) may be suitable for this purpose, subject to the approval of the Project Arborist. The timbers shall be wrapped around the trunk (over the carpet underfelt), but not fixed to the tree to avoid mechanical injury or damage to the trunk. Trunk protection should be installed prior to any site works and maintained in good condition for the duration of the construction period. Carpet underfelt (alone) is sufficient for trees with a trunk diameter of less than 200mm. Trunk protection should be installed prior to any site works and maintained in good condition for the duration of the construction period.

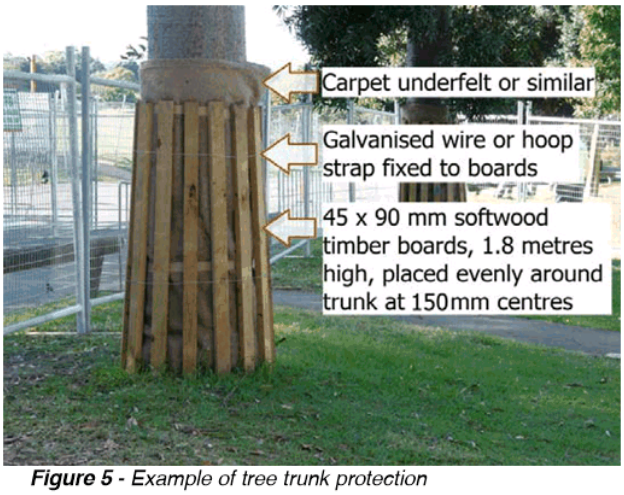


***Figure 5** - Example of tree trunk protection*

6.2..4 **Ground Protection:** The purpose of ground protection is to prevent root damage and soil compaction within the TPZ. A 50mm layer of woodchip mulch should be installed to the full extent of the Tree Protection Zone of all trees to be retained. Mulch should be installed and spread by hand to avoid soil disturbance and compaction within the root zone. If temporary access for machinery is required within the TPZ more robust ground protection measures will be required. A range of methods can be used, including retaining existing hard surfacing or structures that already protect the soil, installing new materials, or a combination of both. Commonly employed methods include a permeable membrane such as geotextile fabric beneath a 100mm layer of mulch or crushed rock below rumble boards. Whatever the choice of method, the end result must be that the underlying soil (rooting environment) remains undisturbed and retains the capacity to support existing and new roots. Ground protection images 1–8 in Figure 5 below illustrate a range of practical surface coverings that can effectively protect TPZs of retained trees.

Ground protection image 1: Heavy duty plywood set onto a compressible woodchip layer and pinned into position is suitable to spread the loading from pedestrian access.

Ground protection image 2: Spreading soil excavated from footings is an effective way of buffering the plywood surface from the wear of light vehicles.

Ground protection image 3: Plywood fixed to a wood frame is another effective method of protecting soil from pedestrian compaction.

Ground protection image 4: A scaffold framework attached to the main scaffold fencing can be used to support either scaffold planks or plywood to create an elevated platform with a gap beneath.

***Figure 5** - Examples of suitable Ground Protection. Source: Barrell tree Consultancy 2018*

6.2.5 **Tree damage:** In the event of a protected tree becoming damaged for any reason during the works period the Project Arborist shall be required to inspect and provide advice on any remedial action to minimise any adverse impact. Such remedial action shall be implemented as soon as practicable and certified by the arborist.

6.3 Working Within Tree Protection Zones

6.3.1 **General Excavation and Dealing With Roots:** Excavations within the TPZ shall be undertaken by hand using spades, forks and trowels, taking care not to damage the bark and wood of any roots. Specialist tools for removing soil around roots using compressed air (eg Air-spade®) may be an appropriate alternative to hand digging during preliminary exploration to expose roots along the perimeter of excavation alignments prior to any mechanical excavation. All care shall be undertaken to preserve root systems intact and undamaged. All soil removal must be undertaken so as to minimise the disturbance of roots beyond the immediate area of excavation. Where possible, flexible clumps of smaller roots, including fibrous roots, should be retained if they can be displaced temporarily or permanently beyond the excavation without damage. If digging by hand, a fork should be used to loosen the soil and help locate any substantial roots. Once roots have been located, the trowel should be used to clear the soil away from them without damaging the bark.

6.3.2 Any located roots less than 50mm in diameter can be cleanly severed with clean sharp pruning implements 10–20cm behind the final face of the excavation. The root zone in the vicinity of the excavation shall be kept moist following excavation for the duration of construction to minimise stress on the tree. ***Where large woody roots (greater than 50mm diameter) are encountered during excavations, further advice from the Project Arborist shall be sought prior to severance.***

6.3.4 **Removing Surfacing & Structures:** Demolition of pathways and paved areas within the Tree Protection Zone of trees to be retained should be undertaken under the supervision of the Site Arborist. The pavement surface and sub-base shall be stripped- off in layers of no greater than 50mm thick using a small rubber tracked excavator or alternative approved method to avoid damage to underlying roots and minimise soil disturbance. The machine shall work within the footprint of the existing pavement to avoid compaction of the adjacent soil. The final layer of sub-base material shall be removed using hand tools were required to avoid compaction of the underlying soil profile and damage to woody roots.

6.3.5 If roots >50mmø are encountered during the demolition works, these roots must be retained in an undamaged condition and advice sought from the Project Arborist. Exposed roots shall be protected from direct sunlight, drying out and extremes of temperature by covering with a 10mm thick jute geotextile fabric. The geotextile fabric shall be kept in a damp condition at all times. Where the Project Arborist determines that the subject tree is using underground elements (i.e footings, pipes, rocks etc.) for support, these elements shall be left insitu.

6.3.6 **Installing Surfaces:** Pavements should be avoided within the Tree Protection Zone of trees to be retained where possible. Installation of the pavements and subbase within the TPZ shall be supervised by the Project Arborist. The new surfaces and sub base materials shall be placed above grade to minimise excavations and retain roots (unless prior root mapping results show above sensitive construction to be unnecessary).

6.3.7 If roots (>25mmø) are encountered during the installation of the new subbase and surfaces, these roots must be retained in an undamaged condition and advice sought from the Project Arborist. Adjustment of final levels and design shall remain flexible to enable the retention of

structural roots (>25mmø) where deemed necessary by the Project Arborist. Compaction of the ground surface prior to the installation of fill shall not be permitted.

6.3.8 Fill material should be a coarse, gap-graded material such as 20 – 50mm crushed basalt (Blue Metal) or equivalent to provide some aeration to the root zone. Note that roadbase or crushed sandstone or other material containing a high percentage of fines is unacceptable for this purpose. Recycled concrete aggregates shall not be used to avoid raising soil pH levels. The fill material should be consolidated with a non-vibrating roller to minimise compaction of the underlying soil. A permeable geotextile may be used beneath the sub-base to prevent migration of the stone into the sub-grade. No fill material should be placed in direct contact with the trunk.

6.3.10 If required, bedding sand shall be a washed river sand (recycled crushed paving blends shall not be used). The bedding sand shall be consolidated with a pedestrian operated plate compactor only. If possible, the pavement material shall be permeable.

6.3.11 **Underground Services:** All proposed stormwater lines and other underground services should be located outside TPZs of trees proposed to be retained wherever possible or installed by alternative measures. Alternative measures include suspending pipelines beneath the floor of a building or structure (to avoid excavation with the TPZ), non-destructive excavation methods or Horizontal Directional Drilling (HDD). Where the installation of service lines within TPZs is unavoidable, the pipelines or conduits should be installed as follows.

6.3.12 Where the extent of the incursion to the root zone is less than 10% of the TPZ including any excavations for benching and shoring the trench, the pipeline or conduit may be installed by open trenching using standard construction methods (excavator or trenching machine).

6.3.13 Where the extent of the incursion to the root zone exceeds 10% of the TPZ, but is outside the SRZ, non-destructive excavation methods must be adopted in accordance with paragraph 6.3.1. Where large woody roots are encountered during excavation or trenching (root diameter greater than 50mm), these shall be retained intact wherever possible (e.g. by tunnelling beneath roots and inserting the pipeline or conduit beneath or re-routing the service etc). Where this is not practical and root pruning is the only alternative, proposed root pruning should be assessed by a qualified arborist [AQF 5] to evaluate the potential impact on the health and stability of the subject tree.

6.4 Canopy And Root Pruning

6.4.1 Care shall be taken when operating cranes, excavators, drilling rigs and similar equipment near trees to avoid damage to tree canopies (foliage and branches). ***Under no circumstances shall branches be torn-off by construction equipment. Where there is potential conflict between tree canopy and construction activities, the advice of the Project Arborist must be sought.***

6.4.2 Where root pruning is required, roots shall be severed with clean, sharp pruning implements and retained in a moist condition during the construction phase using Hessian material or mulch where practical. Severed roots shall be treated with a suitable root growth hormone

containing the active constituents Indol-3-yl-Butric Acid (IBA) and 1-Naphthylacetic Acid (NAA) to stimulate rapid regeneration of the root system.

6.5 Tree Removal

6.5.1 Trees approved for removal by the determining authority shall be removed prior to the establishment of the tree protection measures.

6.5.2 Tree removal shall not damage the trees to be retained and shall be undertaken in accordance with the *Workcover Code of Practice for the Amenity Tree Industry* (1998).

REFERENCES

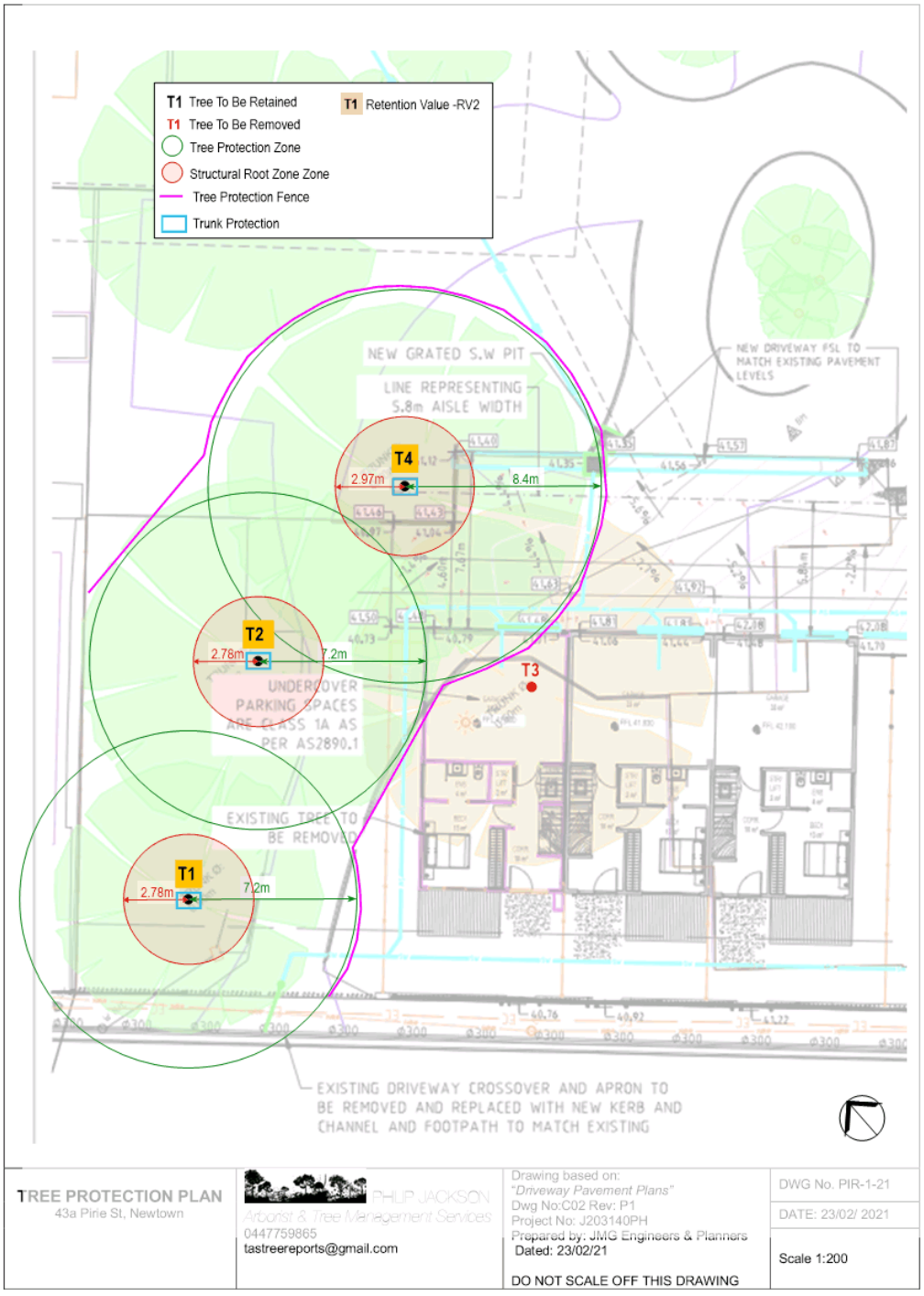
Barrell, J 2001, "SULE: Its use and status into the new millennium" in *Management of mature trees*. Proceedings of the 4th NAAA Tree Management Seminar, NAAA, Sydney.

Council of Standards Australia (2009) **AS 4970– Protection of Trees on Development Sites** Standards Australia, Sydney.

Council of Standards Australia (2007) **AS 4373 – Pruning of Amenity Trees** Standards Australia, Sydney.

Moreton A. 2006, "Determining the Retention Value of Trees On Development Sites" Proceedings of the 7th National Street Tree Symposium: TREENET, Adelaide.

APPENDIX 1: TREE PROTECTION PLAN



APPENDIX 2 – TREE SCHEDULE

NOTES:

Tree: T=Individual Tree; G=Tree Group

Age Class: Y = young, SM = semi-mature, EM = early-mature, M = mature, PM = post-mature (senescent)

Height: **Class**: 0-5m; 6-10m; 11-15m; 16-20m; 21-25m; >25m

DBH: Diameter at Breast Height

Basal Diameter: diameter of base measure at point above basal flare

TPZ = Tree Protection Zone

SRZ = Structural Root Zone

Overall Vitality: G= Good; M=Moderate; P=Poor; Mo= Moribund; D= Dead

Overall Structure: G = Good; F = Fair; P = Poor; D= Dead.

Useful Life Expectancy (ULE): >40 years; 15-40 years; 5-15 years ; < 5 years

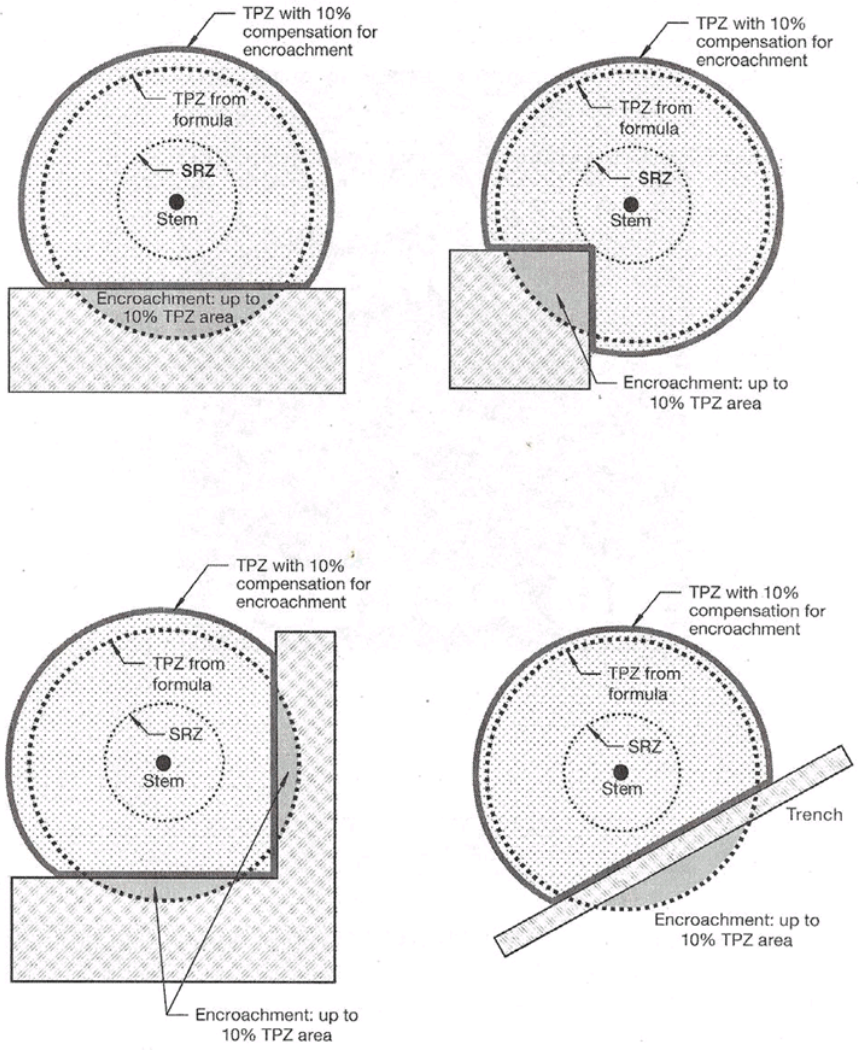
Env/Landscape Significance: VH = very high; H = high; M = Moderate; L = Low; (refer to Section A1.5)

Retention Value: RV1= priority for retention; RV2 = consider for retention; RV3 = consider for removal; RV4 = priority for removal (refer to Section A1.6)

Recommendations: **Rm**= Remove, **Rt**= Retain

Tree	Species	Age Class	Height (m)	Spread (m)	Live crown height	DBH (m)	Basal Diam(m)	SRZ(m)	TPZ(m)	Overall Vitality	Overall Structure	Regulatory Protection	Life expectancy	Env/Landscape sig.	Retention Value	Incursions to Root Zone &/or Canopy	Recommendation	Comments
T1	English Oak (*Quercus robur*)	M	11-15m	10	4	0.6	0.66	2.78	7.2	G	G	N	15-40yrs	M(l)	RV2	Removal of existing driveway surface & crossover within SRZ/TPZ New crossover, footpath and kerb & channel. Excavation for new stormwater service <10% TPZ is acceptable Landscaping for new garden area.	Rt	Crown has been modified for powerline clearance. Potential for root damage. All works to be undertaken by hand within TPZ
T2	English Oak (*Quercus robur*)	M	11-15m	15	3	0.6	0.66	2.78	7.2	G	G	N	15-40yrs	M(l)	RV2	Removal of existing driveway surface within SRZ/TPZ . Excavation for new stormwater service <10% TPZ is acceptable Landscaping for new garden area.	Rt	Potential for root damage. All works to be undertaken by hand within TPZ
T3	Lime (*Tilia x europa*)	M	16-20m	15	4	0.6	0.66	2.78	7.2	G	G	N	15-40yrs	M(l)	RV2	Tree entirely within footprint of proposed units	Rm	
T4	Lime (*Tilia x europa*)	M	16-20m	15	4	0.7	0.77	2.97	8.4	G	G	N	15-40yrs	M(l)	RV2	Removal of existing and consruction of new driveway within SRZ/TPZ. Excavation for new stormwater service <10% TPZ is acceptable	Rt	Potential for root damage. All works to be undertaken by hand within TPZ and new drivway construction to be in accordance with specification

APPENDIX 3 - ACCEPTABLE INCURSIONS TO THE TREE PROTECTION ZONE (TPZ)



NOTE: Less than 10% TPZ area and outside SRZ. Any loss of TPZ compensated for elsewhere.

REF:- Council of Standards Australia (August 2009)
AS 4970 – 2009 – Protection of Trees on Development Sites
Standards Australia, Sydney.

APPENDIX 4 – METHODOLOGY

A1.0 Qualifications

1.0.1 I have based this report on my site observations and the information provided to me. I have over fifteen years' experience in the field of tree management and arboricultural practice. A summary of my relevant qualifications includes:

- Bachelor of Science (Hons) – Plant Ecology - University of NSW
- Bachelor of Science – Botany/Environmental. Studies - Tasmania University
- Diploma of Horticulture - Aboriculture - Ryde TAFE
- VALID Tree Risk-Benefit Assessment certified validator
- Quantified Tree Risk Assessment certified advanced practitioner - Lic. No. 4148

A1.1 General

1.1.1 I visited the site on 17th February 2021 and conducted a survey and inspection of the subject trees from the ground. No aerial or climbing inspections, core testing, drilling or ultrasound diagnosis were undertaken. No excavations to determine the location and/or condition of roots were conducted. No plant samples were analysed for formal identification of any pests or disease.

1.1.2 The biological and mechanical features of the trees were assessed for health & vitality, structural condition and defects.

1.1.3 Tree trunk diameter at breast height (DBH) was measured at 1.4 metres above ground level and rounded to the nearest 0.10 metres. Tree Basal diameter was measured immediately above the basal flare. Tree height was estimated. All distances were taken from the centre of the trunk unless otherwise indicated.

A1.2 Tree Health Assessment

1.2.1 The overall health of the trees was rated as follows:

	Description
Good	**Good** health and vitality - exhibiting minor pest/disease, good extension growth, minor abnormalities in foliage size, colour or density.
Moderate	**Moderate** health and vitality - containing defects and/or damage that may be able to be remediated to provide an acceptable level of risk.
Poor	**Poor** health and vitality - exhibiting extensive or untreatable pest/disease, poor extension growth, significant deadwood and dieback, evidence of rapid decline, sparse foliage cover, abnormal foliage colour or size.
Moribund	Tree is in terminal decline, Lacking vitality or vigour
Dead	Tree is dead

A1.3 Tree Structure Assessment

1.3.1 The overall structure of the tree was rated as follows:

	Description
Good	Good structure - may contain minor defects and/or damage that can be successfully remediated or do not require treatment with an acceptable level of risk.
Fair	Fair structure - containing defects and/or damage that may be able to be remediated to provide an acceptable level of risk.
Poor	Poor structure - Evidence of instability or contains defects and/or damage which render the tree potentially hazardous/ prone to failure or cannot be successfully remediated.
Dead	Tree is dead

A1.4 Useful Life Expectancy (ULE)

1.4.1 The ULE is an estimate of the sustainable longevity of the subject tree(s) in its growing environment. The ULE is modified where necessary to take in consideration tree(s) health, structural condition and site suitability. The tree(s) has been allocated one of the following ULE categories (Modified from Barrell, 2001):

I. >40 years
II. 15-40 years
III. 5-15 years
IV. < 5 years

The estimated ULE of the subject tree is shown in the Tree Schedule in **Appendix 2**.

A1.5 Landscape Significance

1.5.1 Landscape Significance was determined by assessing the combination of the cultural, environmental and aesthetic values of the subject tree(s). Whilst these values may be fairly subjective and difficult to assess consistently, some measure is necessary to assist in determining the retention value of each tree. To ensure in a consistent approach, the assessment criteria shown in the table below have been used in this assessment. A rating of High, Moderate, Low or Insignificant has been allocated to the tree(s). This provides a relative value of the tree's Landscape Significance which may aid in determining its Retention Value. If the tree(s) can be categorized into more than one value, the higher value has been allocated.

Landscape Significance	Description
Very High	The subject tree is listed as a Heritage Item under the *Planning Scheme* with a local or state level of significance.
	The subject tree is listed on Council's Significant Tree Register or is considered to meet the criteria for significance assessment of trees and/or landscapes by a suitably qualified professional. The criteria are based on general principles outlines in the Burra Charter and on criteria from the Register of the National Estate.
	The subject tree has been identified by a suitably qualified professional as a species scheduled as a Threatened or Vulnerable Species or forms part of an Endangered Ecological Community associated with the subject site, as defined under the provisions of the *Threatened Species Protection Act* 1995 (TAS) or the *Environmental Protection and Biodiversity Conservation Act* 1999.
	The subject tree is a remnant tree, being a tree in existence prior to development of the area and/or is considered by relevant Council policy criteria to have "*Very High Conservation Value* "
High	The subject tree forms part of the curtilage of a heritage item with a known or documented association with that item or is a Council tree located within a designated Heritage Precinct Area under the *Planning Scheme.*
	The subject tree creates a 'sense of place' or is considered 'landmark' tree.
	The subject tree is of local, cultural or historical importance or is widely known.
	The subject tree is known to provide habitat to a threatened species and/or is considered by relevant Council policy criteria to have "*High Conservation Value* "
	The subject tree is an excellent representative of the species in terms of aesthetic value.
	The subject tree is of a size/scale to make a significant contribution to the canopy cover of the locality
	The subject tree is located within in neighbouring private/ council/ government land.
Moderate	The subject tree makes a positive contribution to the visual character or amenity of the area.
	The subject tree provides a specific function such as screening or minimising the scale of a building.
	The subject tree has a known habitat value.
	The subject tree is a good representative of the species in terms of aesthetic value.
Low	The subject tree is an environmental weed species and/or is Declared Weed under the relevant legislation
	The subject tree makes little or no contribution to the amenity of the locality.
	The subject tree is a poor representative of the species in terms of aesthetic value.
	The subject tree is dead, dying or has a high associated risk.

Modified from Moreton (2006)

A1.6 Tree Retention Value

1.6.1 Retention Value was based on the subject tree's Useful Life Expectancy and Landscape Significance. This determination is independent from (while being necessarily informed by) the relevant Planning Scheme and as such ***trees not required to be retained by the Planning Scheme may still be categorised as having a high Retention Value due to their intrinsic landscape qualities and overall contribution to the visual amenity to the local environs.***

1.6.2 Retention Values were modified where necessary to take into consideration the subject tree's health, structural condition and site suitability. ***As a consequence trees that are required to be retained by the Planning Scheme may still be categorised as having a low Retention Value to poor health, structural faults or unacceptable associated risk.***

1.6.3 The subject tree(s) have been allocated one of the following Retention Values:

RV1. PRIORITY FOR RETENTION: These trees are considered important for retention and should be retained and protected if practicable. Design modification or re-location of building/s should be considered to accommodate the setbacks as prescribed by the Australian Standard AS4970 Protection of trees on development sites. Tree sensitive construction measures must be implemented if works are to proceed within the Tree Protection Zone.

RV2. CONSIDER FOR RETENTION: These trees may be retained and protected. These are considered less critical however, their retention should remain priority with the removal considered only if adversely affecting the proposed building/works and all other alternatives have been considered and exhausted.

RV3. CONSIDER FOR REMOVAL: These trees are not considered important for retention, nor require special works or design modification to be implemented for their retention.

RV4. PRIORITY FOR REMOVAL: These trees should be removed irrespective of the development layout or at least permanently fenced off and managed.

<table>
<tr><th>ULE</th><th colspan="4">Landscape Significance</th></tr>
<tr><th></th><th>Very High</th><th>High</th><th>Moderate</th><th>Low</th></tr>
<tr><td>>40 years</td><td colspan="2" rowspan="2">RV1</td><td rowspan="2">RV2</td><td rowspan="2">RV3</td></tr>
<tr><td>15-40 years</td></tr>
<tr><td>5-15 years</td><td colspan="2">RV2</td><td>RV3</td><td>RV4</td></tr>
<tr><td>< 5 years</td><td>RV3</td><td colspan="3">RV4</td></tr>
</table>

Modified from Moreton (2006)

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APPENDIX E

Traffic Impact Assessment

MIDSON
traffic
pty ltd

MinD Architects

43A Pirie Street, New Town
Traffic Impact Assessment

February 2021

ENGINEERS AUSTRALIA

PROFESSIONAL ENGINEER OF THE YEAR
INDIVIDUAL AWARDS
TASMANIA
WINNER 2016

MIDSON traffic pty ltd

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1. Introduction

1.1 Background

Midson Traffic were engaged by MinD Architects to prepare a traffic impact assessment for a proposed residential unit development at 43A Pirie Street, New Town.

1.2 Traffic Impact Assessment (TIA)

A traffic impact assessment (TIA) is a process of compiling and analysing information on the impacts that a specific development proposal is likely to have on the operation of roads and transport networks. A TIA should not only include general impacts relating to traffic management, but should also consider specific impacts on all road users, including on-road public transport, pedestrians, cyclists and heavy vehicles.

This TIA has been prepared in accordance with the Department of State Growth (DSG) publication, *A Framework for Undertaking Traffic Impact Assessments*, September 2007. This TIA has also been prepared with reference to the Austroads publication, *Guide to Traffic Management,* Part 12: *Traffic Impacts of Developments*, 2019.

Land use developments generate traffic movements as people move to, from and within a development. Without a clear understanding of the type of traffic movements (including cars, pedestrians, trucks, etc), the scale of their movements, timing, duration and location, there is a risk that this traffic movement may contribute to safety issues, unforeseen congestion or other problems where the development connects to the road system or elsewhere on the road network. A TIA attempts to forecast these movements and their impact on the surrounding transport network.

A TIA is not a promotional exercise undertaken on behalf of a developer; a TIA must provide an impartial and objective description of the impacts and traffic effects of a proposed development. A full and detailed assessment of how vehicle and person movements to and from a development site might affect existing road and pedestrian networks is required. An objective consideration of the traffic impact of a proposal is vital to enable planning decisions to be based upon the principles of sustainable development.

This TIA also addresses the relevant clauses of E5.0, *Road and Railway Assets Code,* and E6.0, *Parking and Access Code,* of the Hobart Interim Planning Scheme, 2015.

1.3 Statement of Qualification and Experience

This TIA has been prepared by an experienced and qualified traffic engineer in accordance with the requirements of Council's Planning Scheme and The Department of State Growth's, *A Framework for Undertaking Traffic Impact Assessments*, September 2007, as well as Council's requirements.

The TIA was prepared by Keith Midson. Keith's experience and qualifications are briefly outlined as follows:

- 25 years professional experience in traffic engineering and transport planning.
- Master of Transport, Monash University, 2006
- Master of Traffic, Monash University, 2004

- Bachelor of Civil Engineering, University of Tasmania, 1995
- Engineers Australia: Fellow (FIEAust); Chartered Professional Engineer (CPEng); Engineering Executive (EngExec); National Engineers Register (NER)

1.4 Project Scope

The project scope of this TIA is outlined as follows:

- Review of the existing road environment in the vicinity of the site and the traffic conditions on the road network.
- Provision of information on the proposed development with regards to traffic movements and activity.
- Identification of the traffic generation potential of the proposal with respect to the surrounding road network in terms of road network capacity.
- Review of the parking requirements of the proposed development. Assessment of this parking supply with Planning Scheme requirements.
- Traffic implications of the proposal with respect to the external road network in terms of traffic efficiency and road safety.

1.5 Subject Site

The subject site is located at 43A Pirie Street. The site is located on the north-west corner of Pirie Street and Roope Street. The existing site is currently residential units with a shared access with 43 Pirie Street.

The subject site and surrounding road network is shown in Figure 1.

Figure 1 Subject Site & Surrounding Road Network

Image Source: LIST Map, DPIPWE

1.6 Reference Resources

The following references were used in the preparation of this TIA:

- Hobart Interim Planning Scheme, 2015 (Planning Scheme)
- Austroads, *Guide to Traffic Management,* Part 12: *Traffic Impacts of Developments*, 2019
- Austroads, Guide to Road Design, Part 4A: Unsignalised and Signalised Intersections, 2017
- Department of State Growth, *A Framework for Undertaking Traffic Impact Assessments*, 2007
- Roads and Maritime Services NSW, *Guide to Traffic Generating Developments*, 2002 (RMS Guide)
- Roads and Maritime Services NSW, *Updated Traffic Surveys,* 2013 (Updated RMS Guide)
- Australian Standards, AS2890.1, *Off-Street Parking*, 2004 (AS2890.1)

2. Existing Conditions

2.1 Transport Network

For the purpose of this report, the transport network consists of Pirie Street and Roope Street.

Pirie Street connects between New Town Road and Risdon Road and provides a minor collector road function servicing a predominantly residential catchment. Pirie Street provides access to New Town Plaza shopping centre. Pirie Street is one-way between Risdon Road and the New Town Plaza access at its northern end.

Traffic calming devices (flat top road humps) have been installed along Pirie Street. Pirie Street carries approximately 3,000 vehicles per day.

Pirie Street adjacent to the subject site is shown in Figure 2.

Figure 2 Pirie Street

Roope Street connects between Swanston Street and New Town Road. It is a local residential road that predominantly provides access to properties along its length. Roope Street connects to Pirie Street at a four-way stop-sign controlled junction with Pirie Street having priority. Traffic volumes in Roope Street are less than 500 vehicles per day.

Roope Street near the subject site is shown in Figure 3.

Figure 3 Roope Street

The General Urban Speed Limit of 50-km/h applies to both roads.

2.2 Road Safety Performance

Crash data can provide valuable information on the road safety performance of a road network. Existing road safety deficiencies can be highlighted through the examination of crash data, which can assist in determining whether traffic generation from the proposed development may exacerbate any identified issues.

Crash data was obtained from the Department of State Growth for a five-year period between 1st January 2016 and 30th December 2020 for the full length of Pirie Street and Roope Street

The findings of the crash data is summarised as follows:

Pirie Street

- A total of 2 crashes were reported in Pirie Street.
- 1 crash involved serious injury and 1 involved a fatality.
- The fatal crash occurred at 9:00pm on 22nd June 2017. It involved a stolen car that travelled without stopping through a stop sign at the Roope Street intersection colliding with a vehicle travelling along Pirie Street.
- The serious injury crash occurred at 3:00pm on 17th March 2016. The crash involved a parked car north of the Roope Street junction.

Roope Street

- A total of 4 crashes were reported in Roope Street.

- Severity. All crashes involved property damage only (excluding the fatal crash listed in Pirie Street above).
- Day of week. All crashes were reported on weekdays. Two crashes were reported on Tuesdays.
- Time of day. All crashes were reported between 7:00am and 7:00pm.
- Crash types. No clear crash trends were evident by crash type.
- Crash locations. 2 crashes were reported at the New Town Road intersection; 2 crashes were reported at mid-block locations.
- Vulnerable road users. 1 crash involved a pedestrian. This crash occurred at 8:30am on 11th April 2018 at the intersection of New Town Road and involved property damage only.

The crash history does not provide an indication that there are any road safety deficiencies associated with the transport network near the subject site.

3. Proposed Development

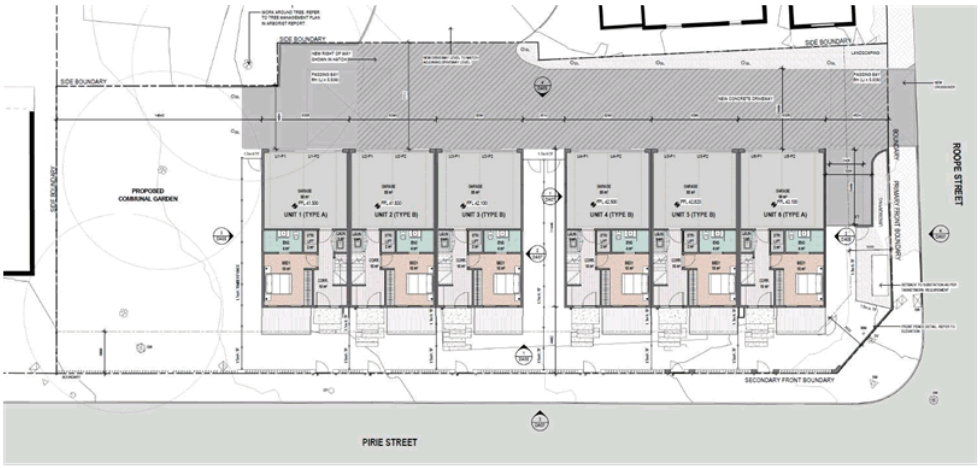
3.1 Development Proposal

The proposed development involves the demolition of the existing units and the construction of 6 x 5-bedroom units. On-site car parking will consist of 13 spaces (2 garage spaces for each unit and 1 visitor space).

Vehicular access will be provided via a driveway that connects to Roope Street.

The proposed development is shown in Figure 4.

Figure 4 Proposed Development Plans



4. Traffic Impacts

4.1 Traffic Generation

Traffic generation rates were sourced from the RMS Guide. Medium density residential housing generates 6.5 vehicles per unit per day, with a peak of 0.65 vehicles per hour per unit.

This results in a traffic generation of 39 vehicles per day, with a peak of 4 vehicles per hour.

4.2 Trip Distribution

The connectivity of the road network is likely to result in the majority of traffic accessing the site via left-turn entry and right-turn exit on Roope Street.

4.3 Access Impacts

The proposed development will close the existing access on Pirie Street and provide a new access to the development on Roope Street. The access will also service the car parking of the neighbouring property (43 Pirie Street). All traffic associated with 43 and 43A Pirie Street will therefore be relocated from Pirie Street to Roope Street.

The Acceptable Solution A2 of Clause E5.6.2 of the Planning Scheme states "*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*".

The development proposes one access on Roope Street and therefore the Acceptable Solution A2 of Clause E5.6.2 of the Planning Scheme is met.

4.4 Sight Distance

Acceptable Solution A1 of E5.6.4 of the Planning Scheme states "*Sight distances at an access or junction must comply with the Safe Intersection Sight Distance shown in Table E5.1*".

Table E5.1 is reproduced in Table 1. The "Vehicle Speed" is defined in the Planning Scheme as "*the actual or recorded speed of traffic passing along the road and is the speed at or below which 85% of passing vehicles travel*". This is often referred to as the "Design Speed" or the "85th Percentile speed" in traffic engineering terminology.

Table 1 Planning Scheme SISD Requirements

Vehicle Speed	Safe Intersection Sight Distance in metres, for speed limit of:	
km/h	60 km/h or less	Greater than 60 km/h
50	80	90
60	105	115
70	130	140
80	165	175
90		210
100		250
110		290

In this case, the required SISD is 80 metres, noting that the vehicle speed has been assumed to be equal to the legal speed limit. The 85th percentile speed of traffic in Roope Street is lower than 50-km/h near the site's access due to the Pirie Street junction and the requirement for vehicles on Roope Street to give way.

The available sight distance from the site's access exceeds 80 metres in both directions along Roope Street, noting that sight distance extends through the Pirie Street intersection. The presence of parked cars in Roope Street can partially restrict sight distance along Roope Street. It is noted that the construction of the driveway cross-over will result in the loss of at least one on-street car parking space. This reduction of on-street parking will be a positive outcome from a sight distance perspective.

The Acceptable Solution A1 of Clause E5.6.4 of the Planning Scheme is therefore met.

4.5 Pedestrian Impacts

The development proposal will generate a small amount of pedestrian activity in the surrounding network.

The existing pedestrian infrastructure in the surrounding road network is considered to be adequate and appropriate for the anticipated pedestrian activity.

4.6 Road Safety Impacts

No significant adverse road safety impacts are foreseen for the proposed development. This is based on the following:

- The relatively insignificant peak hour traffic generation of 4 vehicles per hour will not have any significant impact on the traffic efficiency and general operation of the road network.
- The existing road safety performance of the network in the vicinity of the subject site does not indicate that there are any current road safety deficiencies that may be exacerbated by the proposed development.
- The presence of driveways to residential properties is frequent along the full length of Roope Street. The access will not cause any 'unexpected' traffic movements for motorists travelling along the road frontage.
- Adequate sight distances is available at the access for the prevailing vehicle speeds on Roope Street in accordance with Planning Scheme requirements.

5. Parking Assessment

5.1 Parking Provision

The proposed development provides a total of 13 on-site car parking spaces. This consists of 12 garage spaces (2 for each unit) and 1 visitor parking space.

The layout of the car parking is shown in Figure 4.

5.2 Planning Scheme Requirements

The Acceptable Solution A1 of Clause E6.6.1 of the Planning Scheme states that "*the number of on-site car parking spaces must be no less than the number specified in Table E6.1*".

Table E6.1 requires 2 spaces for each dwelling and 1 dedicated visitor parking space per 4 dwellings (rounded up to the nearest whole number). This is a requirement for 14 parking spaces. The provision of 13 parking spaces does not comply with the Acceptable Solution A1 of Clause E6.6.1 of the Planning Scheme.

The Performance Criteria P1 of Clause E6.6.1 of the Planning Scheme states:

"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".

The following is relevant with respect to the development proposal:

a. Car parking demand. The development provides sufficient on-site car parking supply to cater for the needs of each unit. The development only provides 1 visitor parking space, noting that the Planning Scheme requires 2 spaces (rounded up from 1.5). The visitor car parking demand is therefore likely to be low and can be accommodated in the surrounding on-street network.

b. On-street and public car parking. There is a relatively large supply of on-street car parking in the surrounding transport network. There is sufficient on-street car parking to cater for the shortfall of 1 visitor car parking space.

c. Public transport. The site is located close to New Town Road which is a major transit corridor. Metro Tasmania operate frequent buses along New Town Road.

d. Other modes of transport. The development is located close to shops and services in New Town. Walking and cycling are likely to be common transport modes for residents for certain trip types.

e. Alternative car parking provision. Not applicable.

f. Shared parking. Not applicable.

g. Parking deficiency or surplus. Not applicable.

h. Car parking credit. Not applicable.

i. Cash in lieu. Not applicable.

j. Payment of cash in lieu. Not applicable.

k. Parking plan. Not applicable.

l. Historic cultural heritage significance. Not applicable.

m. Significant Trees Code. Not applicable.

Based on the above assessment the development complies with the requirements of Performance Criteria P1 of Clause E6.6.1 of the Planning Scheme. Specifically the development provides sufficient parking to cater for the parking demands of the units but only provides 1 visitor parking space. The provision of visitor parking is readily available on-street in the surrounding road network.

5.3 Car Parking Layout

The Acceptable Solution A1 of Clause E6.7.5 of the Planning Scheme states "*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*".

The requirements of AS2890.1 are set out in the following sections.

5.3.1 Driveway Requirements

The AS2890.1 driveway requirements are as follows:

- Minimum driveway width (Category 1 driveway, servicing Class 1A with less than 25 spaces) = 3.0m

The driveway width exceeds this requirement along the full width of the access.

5.3.2 Slope

Section 2.5.3(b) of AS2890.1 states the following regarding the maximum grade of straight ramps/ driveways:

i. Longer than 20 m – 1 in 5 (20%) maximum.

ii. Up to 20 m long – 1 in 4 (25%) maximum. The allowable 20 m maximum length shall include any parts of the grade change transitions at each end that exceed 1 in 5 (20%).

In this case the driveway design does not exceed these gradient requirements, with the maximum longitudinal grade being close to level.

Section 2.4.6 of AS2890.1 states that the maximum grades within a car park shall be:

- Measured parallel to the angle of parking 1 in 20 (5%)
- Measured in any other direction 1 in 16 (6.25%)

All car parking spaces comply with AS2890.1 requirements in terms of grade (noting that 12 of the 13 spaces are garage spaces that are effectively level).

5.3.3 Parking Space Dimensions

The car parking is classified as User Class 1A, *'residential, domestic and employee parking'*. This requires car parking minimum dimensions to be:

- Width 2.4m
- Length 5.4m

- Aisle width 5.8m

Where a parking space is located immediately adjacent to a vertical structure (wall, fence, etc), an additional 0.3m additional space width is required.

All spaces comply with AS2890.1 dimensional requirements. Specifically the garage dimensions are:

- Width 3.0 metres
- Length 5.5 metres
- Aisle width 5.8 – 7.7 metres

The visitor parking space measures:

- Width 3.3 metres
- Length 5.4 metres
- Aisle width 5.8 metres

5.3.4 Parking Layout Summary

The parking spaces and manoeuvring areas comply with the relevant requirements of AS2890.1 and therefore comply with the requirements of Acceptable Solution A1 of Clause E6.7.5 of the Planning Scheme.

5.4 Forward Entry and Exit

The Acceptable Solution A1 of Clause E6.7.4 of the Planning Scheme states "*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: (a)it serves no more than two dwelling units; (b) it meets a road carrying less than 6,000 vehicles per day*".

All car parking spaces can be accessed via a forward entry and forward exit manoeuvre from the site's access on Roope Street. The Acceptable Solution A1 of Clause E6.7.4 of the Planning Scheme is met.

5.5 Passing Bays

The Acceptable Solution A1 of Clause E6.7.3 of the Planning Scheme states:

"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".

In this case the driveway access serves more than 5 spaces and the driveway exceeds 30 metres. The width of the driveway access varies between 5.8 metres (for the majority of its length) to 7.7 metres. The driveway therefore automatically provides passing bays along its full length.

The Acceptable Solution A1 of Clause E6.7.3 of the Planning Scheme is met.

5.6 On-Street Parking

There is a relatively large supply of on-street car parking in Roope Street and Pirie Street within a convenient walking distance of the subject site.

The construction of the driveway crossover will result in the loss of one on-street car parking space in Roope Street.

6. Conclusions

This traffic impact assessment (TIA) investigated the traffic and parking impacts of a proposed 6-unit residential development at 43A Pirie Street, New Town.

The key findings of the TIA are summarised as follows:

- The development is likely to generate up to 39 vehicle movements per day, with a peak of 4 vehicle movements per hour at the site's access.
- The development will relocate the existing driveway in Pirie Street to a new crossover in Roope Street. The construction of the driveway crossover will result in the loss of at least one on-street car parking space in Roope Street.
- The proposed development provides a total of 13 on-site car parking spaces. This consists of 12 garage spaces (2 for each unit) and 1 visitor parking space. The parking provision meets the requirements of Performance Criteria P1 of Clause E6.6.1 of the Planning Scheme with a shortfall of 1 visitor parking space which can be readily provided on-street in the surrounding road network.
- The car parking layout meets the requirements of Acceptable Solution A1 of Clause E6.7.5 of the Planning Scheme.

Based on the findings of this report and subject to the recommendations above, the proposed development is supported on traffic grounds.

Midson Traffic Pty Ltd ABN: 26 133 583 025

25 Hinman Drive
Kingston TAS 7050
T: 0437 366 040 E: admin@midsontraffic.com.au W: www.midsontraffic.com.au

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1	Keith Midson	Zara Kacic-Midson	22 March 2021

APPENDIX F

Concept Services

CONCEPT SERVICES REPORT

Residential Development
43A Pirie Street, New Town

March 2021

JMG Engineers & Planners

Engineers & Planners

Johnstone McGee & Gandy Pty Ltd
ABN 76 473 834 852 ACN 009 547 139
www.jmg.net.au

HOBART OFFICE
117 Harrington Street
Hobart TAS 7000
Phone (03) 6231 2555
infohbt@jmg.net.au

LAUNCESTON OFFICE
49-51 Elizabeth Street
Launceston TAS 7250
Phone (03) 6334 5548
infoltn@jmg.net.au

Issuing Office: 117 Harrington Street, Hobart 7000
JMG Project No. J203140PH

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1 Introduction

This concept services report has been prepared in support of a development application to be lodged with Hobart City Council regarding the construction of a residential development at 43A Pirie Street, New Town, PID:5682688. The proposal involves the demolition of existing buildings and a new development comprising of 6, 5 bedroom, multi storey residential apartments.

The property has an area of 1370 m^2 and is located on the corner of Pirie and Roope Street, with a high point towards the eastern property boundary and falling towards west with grades of 3-9%. The property is covered with grasses and shrubs alongside some notably large trees towards the NW boundary. The existing building on the property has an approx. area of 460 m^2 and the existing hardstand within the boundary has an approx. area of 400 m^2. Both the building and hardstand are to be demolished as part of the proposed development.

The redevelopment is to be serviced with power, communications, water, sewer and stormwater connections all of which are to be installed as part of the development. This report addresses how each of these are to be provided to meet authority and planning scheme requirements.

Figure 1 - Site Locality Plan

2 Power, Lighting and Communications

2.1 Applicable Design Standards

- Electrical Infrastructure on the lot shall be designed in accordance with AS/NZS3000, Australian / New Zealand Wiring Rules.
- Lighting of common areas, where required, shall be provided to meet AS.NZS1158 .3.1 - 2020.
- Nation Broadband Network connections shall be provided to each unit and tenancy in accordance with the NBN standards "Residential preparation and installation: Single Dwelling Units (SDUs) and Multi Dwelling Units (MDUs)" (1).

2.2 Proposed System

Electrical supply to the lot is currently being provided by TasNetworks via an existing substation and turret that both reside within the 43A property boundary. This substation also services the adjacent property, 43 Pirie Street.

It is anticipated that TasNetworks will provide electrical supply to the lot through the reuse of the existing turret as part of the redevelopment. Internal mains will be run from this turret to switchboards to be located at each of the units.

Where required by the planning scheme lighting of common areas including the driveway and paths will be provided in accordance with the requirements of AS.NZS 1158.3.1, the electrical supply to the common area lighting shall be provided from a dedicated Common Area switchboard.

Existing NBN services are located at the back of the footpath on Pirie Street adjacent to the property boundary. A pit is located at the existing driveway crossover of the lot, servicing both 43A Pirie Street and 43 Pirie Street.

NBN connections will be provided from the property boundary to the MDU of each unit in accordance with NBN guidelines, "Residential preparation and installation: Single Dwelling Units (SDUs) and Multi Dwelling Units (MDUs)".

NBN designs shall be prepared in accordance with the NBN design standards using the NBN Assisted Drafting Tool (ADT) and be submitted to and approved by NBN prior to the commencement of installation.

3 Sanitary Drainage System

3.1 Applicable Design Standards

The sanitary drainage system for the site shall be designed to comply with AS 3500.2 National Plumbing and Drainage Code - Sanitary Plumbing and Sanitary Drainage and to TasWater Standards (4).

An existing TasWater DN150 sewer main runs through the neighbouring property 43 Pirie Street, with a manhole located near the centre of the property. An existing private sewer main servicing 43A Pirie Street runs along the NE property boundary and connects to the manhole aforementioned. This existing private sewer main is to be removed and reinstated with a new public sewer main to the lot boundary.

3.2 Proposed System

The existing private sewer main servicing the property, inside of the NE boundary, is to be removed and capped at the existing sewer branch located on 43 Pirie Street, such that the existing main servicing 43 Pirie Street is not impaired.

The property will be serviced by new internal sanitary drainage pipework to be designed following the approval of the development. This pipework will be connected to a new, public DN150 sewer connected to the existing TasWater manhole located in centre of the neighbouring property, 43 Pirie Street. This main will be located within a 2.5m wide TasWater services easement. The DN150 connection size complies with the minimum lot connection size required by TasWater and referenced on Standard Drawing MRWA-S-104A.

Proposed floor levels ensure that minimum grades of 1:60 can be achieved on all internal pipework connecting to the Lot connection point. DN100 branches are to be provided to service the plumbing for to each unit which will be designed following approval of the development.

Refer Appendix B for concept layouts of the proposed sanitary services for the development.

The TasWater supplement to the Sewerage Code of Australia has been used to estimate the flows sewerage flows from the development as follows:

Table 1: Residential Sewer Flow Calculations

	Value	Units
Number of Units (ET code: RA03)	6	No.
Equivalent Tenements	5.3	(-)
Average Dry Weather Flow	0.031	(L/s)
Peak Dry Weather Flow	0.399	(L/s)
Total Design Flow	0.533	(L/s)

Refer Appendix D for sewer flow calculations.

4 Water

4.1 Applicable Design Standards

The water reticulation system for the site shall be designed to comply with AS3500.1 National Plumbing and Drainage Code - Water Supply.

Water metering shall be provided in accordance with TasWater's Water Metering & Guidelines.

Sub-Metering shall be provided in accordance with TasWater's Southern Region Sub-Metering Policy.

Backflow Protection of the site shall be provided in accordance with TasWater's Water Boundary Backflow Containment Selection Guidelines.

Fire hydrant coverage of the site is to be provided in accordance with AS3500.1 and Table 8.8 of TasWater's Supplement to the Water Supply Code of Australia WSA-03 2011.

4.2 Proposed System

The existing water connection to the site, located in the southernmost corner of the property, is to be made redundant and capped at the property boundary. A new DN32 private water main connection will be installed towards the NW of the property boundary, connecting into the existing DN100 TasWater main that runs along the opposite side of Pirie Street to the 43A site boundary.

A Low Hazard DN32 Master water meter is to be provided inside of the property boundary with a non-testable dual check device installed immediately after the master water meter. The size of this connection is in accordance with TasWater Water Metering Guidelines Table 1. New water supply pipework installed in accordance with AS3500.1 shall be provided from the boundary master meter to each of the new Units.

7 additional sub meters are to be installed after the dual check devices to service and monitor individual water usage for all residential units and the communal garden in accordance with TasWater's Southern Region Sub-Metering Policy.

Existing fire hydrants are located on both Pirie Street and Roope Street on the opposing sides of the street to the lot. The location and abundance of these existing hydrants satisfies coverage requirements set out by AS2419.1 Section 3.5 'External Hydrants' such that no additional internal

hydrants are necessary as part of the development. Any additional changes to the Fire System and internal reticulation system are to be designed following development approval.

Refer Appendix B for Water Services Concept Drawings

The TasWater supplement to the MRWA Water Supply Code has been used to estimate the flows as follows:

Table 2: Residential Water Demand Calculations <100ET - AS3500.1-2003

	Value	Units
Number of Units (ET code: RA03)	6	(-)
Probable Simultaneous Demand	1.03	(L/s)

Refer Appendix D for Water Flow Calculations.

5 Stormwater

5.1 Applicable Planning Scheme Requirements

The applicable planning scheme is the *Hobart Interim Planning Scheme 2015*, with the applicable provisions provided by Code E7.0, Stormwater Management Code. The proposal has been assessed against the requirements of the scheme as detailed in section 5.3 (5).

5.2 Applicable Design Standards

The stormwater reticulation system for the site shall be designed to comply with AS3500.3 National Plumbing and Drainage Code - Stormwater Drainage.

5.3 Proposed Systems

The property currently discharges to the kerb and channel. As part of the development a new private stormwater main is to be installed with connections servicing all residential units and draining to the existing DN300 stormwater main on Pirie Street near the western corner of the lot. A new private stormwater main and grate is to be installed, connecting into the existing stormwater connection in the Northern corner of neighbouring 43 Pirie Street. A spoon drain collecting in a grated pit will run along the Northeast boundary to prevent overland flow from effecting neighbouring properties.

Refer Appendix B for Stormwater Services Concept Drawings.

5.3.1 Planning Scheme Requirements E7.7.1

A1 - Stormwater Disposal

The development meets the performance criteria P1:

The site will drain by gravity via the internal stormwater network and connect to the DN150 stormwater lot connection provided as part of the development.

A2 - Stormwater Quality and Quantity

The development meets the performance criteria P2:

Although carparking is provided for more than 6 cars, all carparks are located undercover and do not contribute to the site's stormwater runoff. Therefore stormwater treatment is not required in order to meet the stormwater quality targets as detailed in Table E7.1

A3 - Minor Stormwater Drainage System Design

The development is compliant with acceptable solution A3:

a) The internal stormwater network and associated public stormwater branch extension will be sized to accommodate the 5% AEP runoff from the property based on it being 100% impervious. Due to a proposed reduction in impervious area and thus, a reduction in peak flows, no additional detention is required.
b) As the estimated existing peak catchment flow is 0.0248m^3/s and the estimated new peak catchment flow is 0.0238m^3/s

A4 - Major Stormwater Drainage System Design

The development is compliant with acceptable solution A4:

The site external pavement levels and pathway connections to the front doors ensure surface water flows on the site drain away from the proposed buildings ensuring inundation of the proposed buildings does not occur in a 1% AEP storm event.

6 Access and Parking

6.1 Planning Scheme Requirements

The applicable planning scheme is the *Hobart Interim Planning Scheme 2015*; with the applicable provisions provided by E6 Parking and Access Code.

The proposal has been assessed against the requirements of the Parking and Access code in section 6.3.

6.2 Applicable Design Standards

Carparking for the site is to be designed in accordance with the requirements of AS/NZS 2890.1:2004 Off-Street Parking and AS/NZS 2890.6:2009 Off-street parking for people with disabilities.

6.3 Proposed Layout - Planning Scheme Requirements

6.3.1 E6.6 Use Standards

E6.6.1 - Number of carparking spaces

Refer Planning Report & TIA

E6.6.2 - Number of accessible carparking spaces

Refer Planning Report.

E6.6.3 - Number of motorcycle parking spaces

Refer Planning Report.

E6.6.4 - Number of bicycle parking spaces

Refer Planning Report.

6.3.2 E6.7 Development Standards

E6.7.1 Number of Vehicular Accesses

A1 - The acceptable solution A1 is met.

The site is provided with a singular vehicular access.

E6.7.2 Design of Vehicular Accesses

A1 - The acceptable solution A1 is met.

The singular access complies 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 in that:

(a) It has a minimum width of 3.6m with exceeds the requirements for a Category 1 driveway of a Class 1A parking facility onto a local street.
(b) The driveway will have less than 30 vehicle movements in a peak hour.
(c) The access location is not within the prohibited area shown in Figure 3.1 of AS2890.1.
(d) Sight distance at the access driveway for vehicles and pedestrians complies with the requirements of Figure 3.2 & 3.3 of AS2890.1.
(e) The gradient of the driveway is less than 20% and 2.5% across the footpath. Transitions to comply with the IPWEA standard drawing TSD-R09-v3.

E6.7.3 Vehicular Passing Areas Along an Access

Refer TIA Report.

E6.7.4 On-Site Turning

Refer TIA Report.

E6.7.5 Layout of Parking Areas

Refer TIA Report.

E6.7.6 Surface Treatment of Parking Areas

A1 - The acceptable solution A1 is met.

The driveways and parking areas are to be constructed from reinforced concrete or asphalt. The carparks are located within the basement floor and therefore do not contribute to stormwater runoff. A stormwater pit in the lowest corner of the driveway will allow the drainage of any water to the properties stormwater connection. Refer Appendix B - concept services plan.

E6.7.7 Lighting of Parking Areas

A1 - The acceptable solution A1 is met.

Carpark lighting will be provided in accordance with 3.1 "Basis of Design" as well as 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.

E6.7.8 Landscaping of Parking Areas

P1 - The development meets the performance criteria P1:

a) The internal carpark will have minimal visual impact on the streetscape other than the entryway.
b) Enclosed parking areas has no amenity impact on neighbouring properties and the streetscape.
c) Enclosed parking areas are private, secure and can be actively protected via garage doors, etc.

E6.7.9 Design of Motorcycle Parking Areas

A1 - The acceptable solution A1 is met.

Motorcycle Carparking spaces are not required.

E6.7.10 Design of Bicycle Parking Areas

A1 - The acceptable solution A1 is met.

Bicycle Carparking spaces are not required.

E6.7.11 Bicycle End of Trip Facilities

A1 - The acceptable solution A1 is met.

Bicycle Carparking spaces are not required.

E6.7.12 Siting of Car Parking

A1 - The acceptable solution A1 is met.

The carpark is located behind the proposed building line of the development.

E6.7.13 Facilities for Commercial Vehicles

A1 - The acceptable solution A1 is met.

As a residential development, it is anticipated that commercial off-street development is not required.

E6.7.14 Access to a Road

A1 - The acceptable solution A1 is met.

Access to Roope Street is provided by a single 5.5m dual vehicle crossover to IPWEA Standard Drawing TSD-R09-V3.

7 Conclusion

The proposed unit development can be constructed with the provision of all required services and on-site parking to comply with the requirements of Council's Planning Scheme, TasWater's Design Guidelines and the applicable Australian Standards.

The property is serviced with communications, power, water sewer and stormwater connections adequately sized to cater for the number of units.

Vehicle parking and turnings areas have been provided to comply with the minimum number required by the planning scheme and have dimensions and manoeuvring areas which comply with AS/NZS 2890.1 - Off Street Parking.

Stormwater discharge from the site will not increase from pre-development levels and can be drained to Council's existing piped stormwater infrastructure.

Overland flows on the site can be managed without impact to the proposed dwellings.

8 References

1. Preparation and Installation Guide for-SDUS and MDUS. [Online] https://www.nbnco.com.au/content/dam/nbnco2/2018/documents/NewDevs/preparation-and-installation-guide-for-sdus-and-mdus.pdf.

2. Installing Pit and Conduit Infrastructure. [Online] https://www.nbnco.com.au/content/dam/nbnco/documents/installing-pit-and-conduit-infrastructure.pdf.

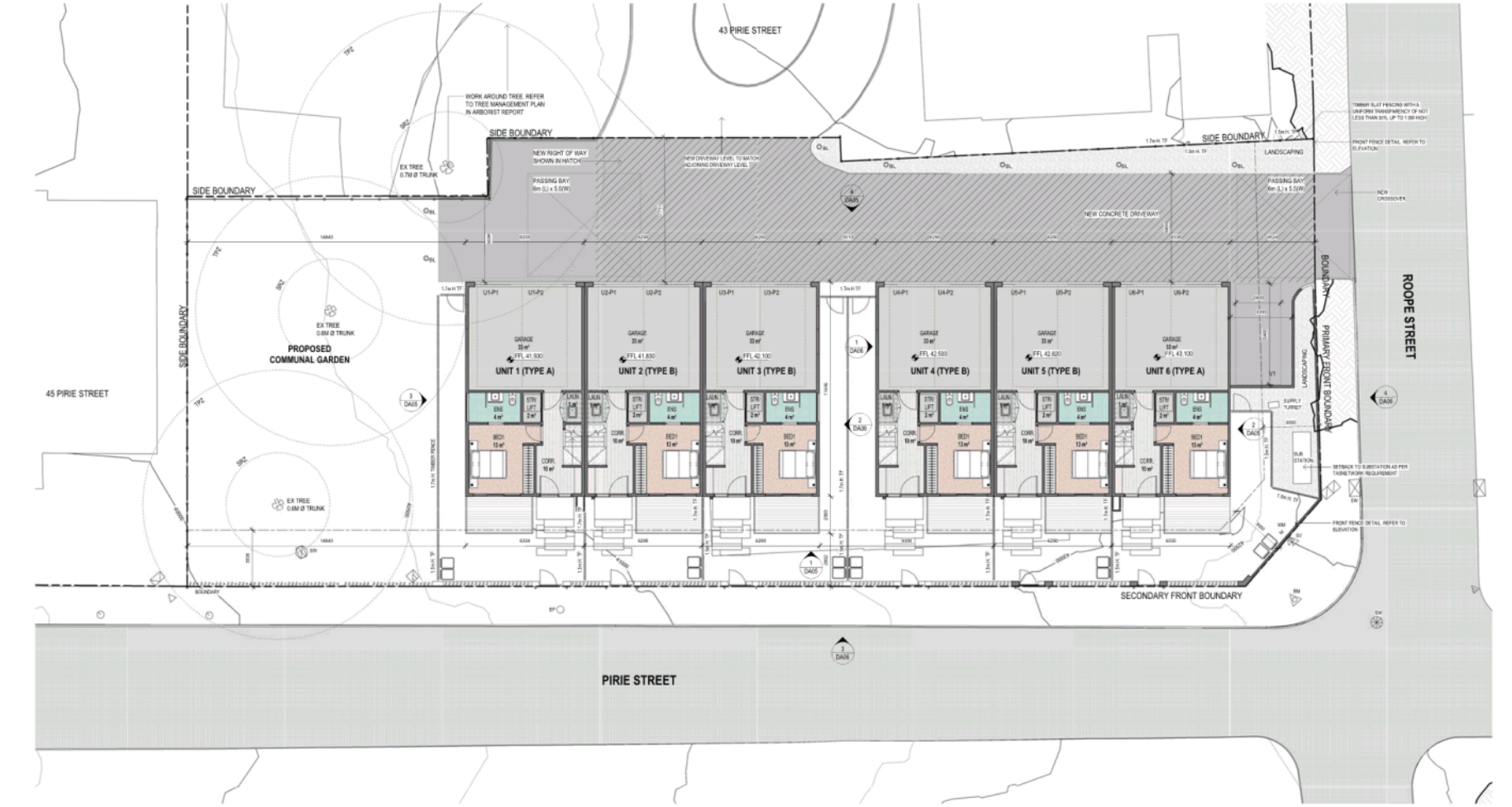
3. Pit and Pipe Design Guide. [Online] https://www.nbnco.com.au/content/dam/nbnco2/2018/documents/NewDevs/pit-and-pipe-design-guide.pdf.

4. Development Technical Standards. [Online] https://www.taswater.com.au/Development/Technical-Standards.

5. Planning Scheme (iplan). [Online] https://iplan.tas.gov.au/Pages/XC.Home/Default.aspx?hid=95613.

APPENDIX A

Survey Plan



1 DA06 LEVEL GROUND
Scale 1 : 100

UNIT 1 & 6 (TYPE A)			
LEVEL GROUND -	72.47 SQ.M.	LEVEL 1 BALCONY -	9.0 SQ.M.
LEVEL 1 -	70.84 SQ.M.	LEVEL 2 BALCONY -	6.0 SQ.M.
LEVEL 2 -	61.82 SQ.M.	TOTAL -	15.0 SQ.M.
TOTAL -	204.13 SQ.M. (INC. EXTERNAL WALL)		

UNIT 2, 3, 4 & 5 (TYPE B)			
LEVEL GROUND -	72.87 SQ.M.	LEVEL 1 BALCONY -	9.0 SQ.M.
LEVEL 1 -	70.16 SQ.M.	LEVEL 2 BALCONY -	5.0 SQ.M.
LEVEL 2 -	61.14 SQ.M.	TOTAL -	14.0 SQ.M.
TOTAL -	203.39 SQ.M. (INC. EXTERNAL WALL)		

LEGEND:
EXISTING
NEW WORK
DEMOLITION
SBL SOLAR BOLLARD LIGHT IN ACCORDANCE WITH SU 7.1-A1
POS ALL POS NOT STEEPER THAN 1:10
- ALL PARKING AREA MAX 5% FALL

ISSUE	REVISION	DRN	CHK / APP	DATE
1	DEVELOPMENT APPLICATION	DA	DA	10/05/20

MinD. ARCHITECTS
ARCHITECT: DAVID WALTER HO
PHONE: [redacted]
EMAIL: [redacted]
WEBSITE: [redacted]

REASON FOR ISSUE: DEVELOPMENT APPLICATION
PROJECT No.: 2056
NORTH:
PROJECT: PROPOSED 6 UNITS DEVELOPMENT
PROJECT ADDRESS: 43A PIRIE STREET, NEW TOWN
CLIENT: TAS DREAM
DRAWING TITLE: LEVEL GROUND
SCALE: As indicated @ A1
PROJECT DATE: SEPT 2019
DRAWING No.: DA02
REVISION: 1
PLOT DATE: 5/08/2020 9:36:08 PM

APPENDIX D

Water and Sewer Demand Calculations

J203140PH

43A Pirie Residential Development

Sewer Design Flow Calcs

	WSA CALCULATIONS	:ULATED VA	UNITS	COMMENTS
DESIGN FLOW	PDWF + GWI + RDI	0.53334652	L/s	Design flow result

PDWF	d x ADWF	0.3988503	L/s	
	PDWF			
d	0.01*(LOG(A))^4-0.19*(LOG(A))^	12.7640265		
A	Gross Area of Development	0.137	Ha	Determine area (m2) off plans
	ADWF			
ADWF	0.001736*EP (150L/d/EP - as per	0.031248	L/s	
EP	3 x ET	18		TasWater overrides WSA
ET	Total Equivalent Tenements	6		TasWater Assumption (right)

GWI	0.025 x A x Portion(wet)	0.0023975	L/s	
$Portion_{wet}$	Portion of Network where GW > F	0.7		TasWater Assumption (5.5.5.2)

RDI	0.028 x Aeff x C x I	0.13209871	L/s	
A_{eff}	A x (Density/150)^0.5 OR A	0.12821856		Density >/< 150
Density	EP/A	131.386861		
C	Saspect + Naspect	1.4		
Saspect	Soil Aspect	0.8		TasWater Assumption
Naspect	Network Defects Aspect	0.6		TasWater Assumption
I	$I_{1,2}$ x $Factor_{size}$ x $Factor_{containment}$	26.282194		
I(1,2)	1 hr duration rainfall intensity, AR	13.2		Determined from BOM
Factor(size)	(40/A)^0.12	1.97624476		
Factor(containment)	0.77 x (10^(0.43X)) / (10^(0.14X^	1.00750441		
X	log(ARI)	0.30103		
ARI	Annual Recourence Interval	2		TasWater Assumption

Total ET	6

TasWater Supplement Appendix B

>2 Storeys, High Density, Dwelling				
	1 Bedroom	2 Bedroom	3+ Bedroom	
Factor/dwelling	0.5	0.75	1	
No. of Units	0	0	6	Sum
ET	0	0	6	6

J203140PH

43A Pirie Residential Development

Water Design Flow Estimations

Option 1)			
ET's < 100			
	Quantity	Units	Comments
Number of Units/Homes/Town Houses	4.02	-	
Probable Simultaneous Demand (PSD)	1.03	L/s	(AS/NZS 3500.1:2003 Table 3.2.3)

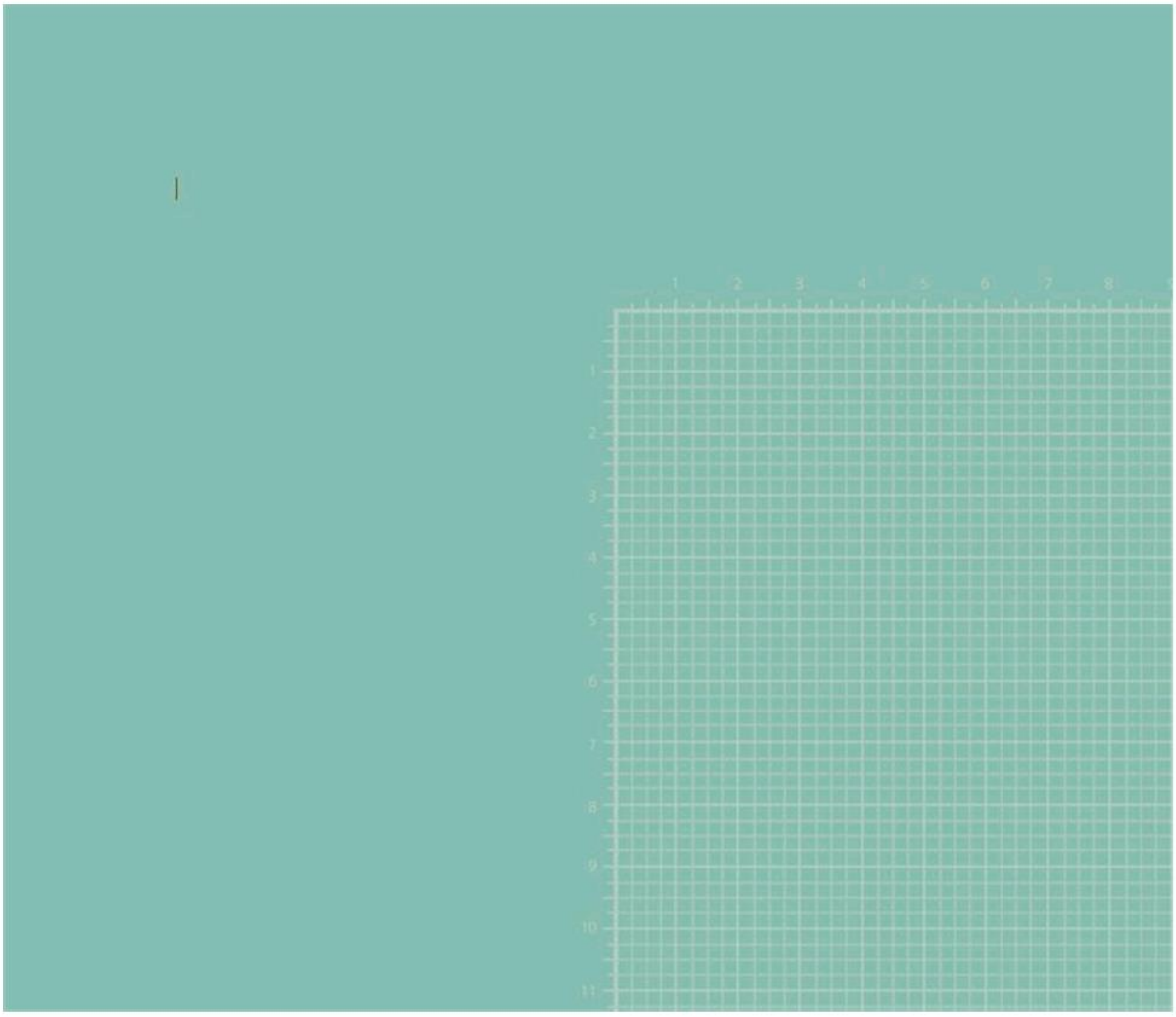
OR

Option 2)			
ET's >= 100			
	Quantity	Units	Comments
Average Day Demand (AD)	0	L/ET/day	As per 2.3.1 of TasWater Supplement
Average Water Demand (per day)	0	L/day	
Average Water Demand (per day)	0	kL/day	

Total ET	4.02

TasWater Supplement Equivalent Water Tenement Rates

>2 Storeys, High Density, Dwelling				
	1 Bedroom	2 Bedroom	3+ Bedroom	
Factor/dwelling	0.33	0.5	0.67	
No. of Units	0	0	6	Sum
ET	0	0	4.02	4.02



Johnstone McGee & Gandy Pty Ltd

ABN 76 473 834 852 ACN 009 547 139

www.jmg.net.au

HOBART OFFICE
117 Harrington Street
Hobart TAS 7000
Phone (03) 6231 2555
infohbt@jmg.net.au

LAUNCESTON OFFICE
49-51 Elizabeth Street
Launceston TAS 7250
Phone (03) 6334 5548
infoltn@jmg.net.au

JMG
Engineers & Planners

City of HOBART

Enquiries to: City Planning
Phone: (03) 6238 2715
Email: coh@hobartcity.com.au

15 April 2021

Gabrielle Priest (Johnstone, McGee & Gandy Pty Ltd) mailto: gpriest@jmg.net.au
117 Harrington St
HOBART TAS 7000

Dear Sir/Madam

43 A PIRIE STREET, NEW TOWN - WORKS IN ROAD RESERVE NOTICE OF LAND OWNER CONSENT TO LODGE A PLANNING APPLICATION - GMC-21-23

Site Address:

43A Pirie Street, New Town

Description of Proposal:

Demolition, Six Multiple Dwellings, Front Fencing and Associated works, involving the City's Road Reserve and Stormwater Network

Applicant Name:

Gabrielle Priest, JMG

PLN *(if applicable)*:

PLN-21-200

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.

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 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

(Tim Short)
ACTING GENERAL MANAGER

Relevant documents/plans:

Plans - MinD. Architects - 2056 Rev. 1

Approved - General Manager Consent Only GMC-21-23 15/04/2021

Engineers & Planners

117 Harrington Street
Hobart 7000
Phone (03) 6231 2555
Fax (03) 6231 1535
infohbt@jmg.net.au

49-51 Elizabeth Street
Launceston 7250
Phone (03) 6334 5548
Fax (03) 6331 2954
infoltn@jmg.net.au

Johnstone McGee & Gandy Pty Ltd
ABN 76 473 834 852
ACN 009 547 139
as trustee for Johnstone McGee & Gandy Unit Trust

www.jmg.net.au

JMG Ref: J203140PH

22 March 2021

City of Hobart
Via email - coh@hobartcity.com.au

To whom it may concern,

43a PIRIE STREET, HOBART - LANDOWNER CONSENT FOR MAKING APPLICATIONS UNDER THE LAND USE PLANNING AND APPROVALS ACT 1993

We advise that JMG Engineers and Planners will prepare and lodge a development application with the City of Hobart on behalf of Tas Dream Pty Ltd for development of multiple dwellings (6 three storey units) at 43a Pirie Street, Hobart (CT 107319/1).

There will be installation and upgrade of services associated with the proposed development (including power, communications, water, sewer and stormwater connections associated with the development) on two road reserves vested in the City of Hobart. Details of these are summarised as follows:

- Roope Street Road Reserve - installation of a new vehicle crossover;
- Pirie Street Road Reserve - connection of the new private water main connection (DN32) into the existing TasWater main (DN100).

Detail of the proposed works can be found in the attached drawing set and concept services report (within Attachment A and Attachment B respectively).

In accordance with s.52(1B) of the *Land Use Planning and Approvals Act 1993*, JMG Engineers and Planners seeks that the City of Hobart provides landowner consent to make the abovementioned applications.

Yours faithfully
JOHNSTONE McGEE & GANDY PTY LTD

Gabrielle Priest
TOWN PLANNER

Approved - General
Manager Consent Only
GMC-21-23 15/04/2021

ATTACHMENT A

Proposal Drawing Set

Approved - General Manager Consent Only
GMC-21-23 15/04/2021

PROPOSED 6 UNITS DEVELOPMENT

43A PIRIE STREET, NEW TOWN

ARCHITECTURAL & ENGINEERING DRAWING

DRAWINGS NO.	DRAWING NAME	REVISION
DA00	COVER	1
DA01	EXISTING & DEMOLITION PLAN	1
DA02	LEVEL GROUND	1
DA03	LEVEL1	1
DA04	LEVEL2	1
DA05	ELEVATIONS	1
DA06	ELEVATIONS	1
DA07	SHADOW DIAGRAMS	1
DA08	3D PERSPECTIVES AND MATERIALS	1

SITE INFORMATION	
TITLE REF	107319/1
PROPERTY ID	5682688
ZONING	INNER RESIDENTIAL
SITE AREA	1369 sq.m
DENSITY	6 / 1369 sq.m = 228 sq.m > 200 sq.m
SITE COVERAGE	520.621 sq.m / 1369sq.m = 38.03% <65%
LANDSCAPE AREA	334.90 sq.m / 1369sq.m

UNIT 1 & 6 (TYPE A)	
LEVEL GROUND	72.47 sq.m. (INC. EXTERNAL WALL)
LEVEL 1	70.04 sq.m. (INC. EXTERNAL WALL)
LEVEL 2	61.62 sq.m. (INC. EXTERNAL WALL)
TOTAL	**204.13 sq.m. (INC. EXTERNAL WALL)**
LEVEL 1 BALCONY	9.0 sq.m.
LEVEL 2 BALCONY	6.0 sq.m.
TOTAL	**15.0 sq.m.**
UNIT 2, 3, 4, 5 (TYPE B)	
LEVEL GROUND	72.07 sq.m. (INC. EXTERNAL WALL)
LEVEL 1	70.16 sq.m. (INC. EXTERNAL WALL)
LEVEL 2	61.14 sq.m. (INC. EXTERNAL WALL)
TOTAL	**203.30 sq.m. (INC. EXTERNAL WALL)**
LEVEL 1 BALCONY	9.0 sq.m.
LEVEL 2 BALCONY	5.0 sq.m.
TOTAL	14.0 sq.m.
GARDEN AREA UNIT 1	53.46 sq.m.
GARDEN AREA UNIT 2	30.21 sq.m.
GARDEN AREA UNIT 3	53.88 sq.m.
GARDEN AREA UNIT 4	53.46 sq.m.
GARDEN AREA UNIT 5	30.21 sq.m.
GARDEN AREA UNIT 6	54.76 sq.m.

SITE CONTEXT PLAN

VIEW FROM PIRIE STREET. ARTISTS IMPRESSION. SUBJECT TO CHANGE

ISSUE	REVISION	DRN	CHK APP	DATE
	DEVELOPMENT APPLICATION	JW	DM	15/03/21

MinD. ARCHITECTS

REASON FOR ISSUE: DEVELOPMENT APPLICATION

PROJECT No.: 2056

PROJECT: PROPOSED 6 UNITS DEVELOPMENT

PROJECT ADDRESS: 43A PIRIE STREET, NEW TOWN

CLIENT: TAS DREAM

DRAWING TITLE: COVER

SCALE: 1 : 20 @ A1

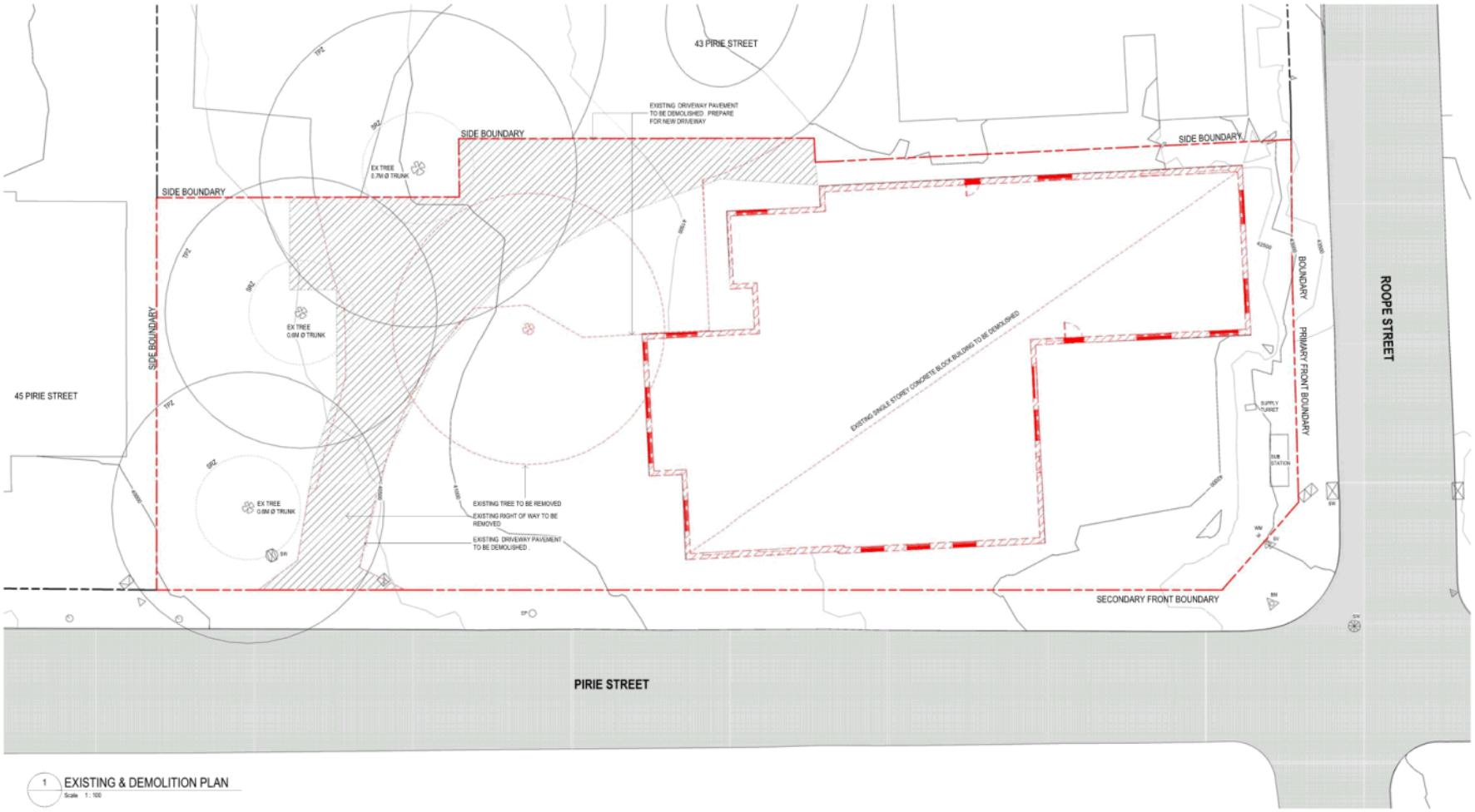
PROJECT DATE: SEPT 2019

DRAWING No.: DA00

REVISION: 1

PLOTTED: 15/03/2021

Approved - General Manager Consent Only
GMC-21-23 15/04/2021



1 EXISTING & DEMOLITION PLAN
Scale 1 : 100

ISSUE	REVISION	DRN	CHK / APP	DATE
1	DEVELOPMENT APPLICATION	JA	JA	10/05/20

MinD. ARCHITECTS

REASON FOR ISSUE: DEVELOPMENT APPLICATION
PROJECT No.: 2056
PROJECT: PROPOSED 6 UNITS DEVELOPMENT
PROJECT ADDRESS: 43A PIRIE STREET, NEW TOWN
CLIENT: TAS DREAM
DRAWING TITLE: EXISTING & DEMOLITION PLAN
SCALE: 1 : 100 @ A1
PROJECT DATE: SEPT 2019
DRAWING No.: DA01
REVISION: 1

Approved - General Manager Consent Only
GMC-21-23 15/04/2021

1 DA06 LEVEL GROUND
Scale 1 : 100

UNIT 1 & 6 (TYPE A)			
LEVEL GROUND -	72.47 SQ.M.	LEVEL 1 BALCONY -	9.0 SQ.M.
LEVEL 1 -	70.84 SQ.M.	LEVEL 2 BALCONY -	6.0 SQ.M.
LEVEL 2 -	61.82 SQ.M.	TOTAL -	15.0 SQ.M.
TOTAL -	204.13 SQ.M. (INC. EXTERNAL WALL)		

UNIT 2, 3, 4 & 5 (TYPE B)			
LEVEL GROUND -	72.87 SQ.M.	LEVEL 1 BALCONY -	9.0 SQ.M.
LEVEL 1 -	70.16 SQ.M.	LEVEL 2 BALCONY -	5.0 SQ.M.
LEVEL 2 -	61.14 SQ.M.	TOTAL -	14.0 SQ.M.
TOTAL -	203.39 SQ.M. (INC. EXTERNAL WALL)		

LEGEND:
EXISTING
NEW WORK
DEMOLITION
SBL SOLAR BOLLARD LIGHT IN ACCORDANCE WITH SU 7.1-A1
POS ALL POS NOT STEEPER THAN 1:10
- ALL PARKING AREA MAX 5% FALL

ISSUE	REVISION	DRN	CHK / APP	DATE
1	DEVELOPMENT APPLICATION	JA	JA	10/05/20

MinD. ARCHITECTS
ARCHITECT: DAVID WALTO AU
PHONE: [redacted]
EMAIL: [redacted]
WEBSITE: [redacted]

REASON FOR ISSUE: DEVELOPMENT APPLICATION
PROJECT No.: 2056
NORTH:
PROJECT: PROPOSED 6 UNITS DEVELOPMENT
PROJECT ADDRESS: 43A PIRIE STREET, NEW TOWN
CLIENT: TAS DREAM
DRAWING TITLE: LEVEL GROUND
SCALE: As indicated @ A1
PROJECT DATE: SEPT 2019
DRAWING No.: DA02
REVISION: 1
PLOT DATE: 5:38:08 PM 15/04/2021

Approved - General Manager Consent Only
GMC-21-23 15/04/2021

1 DA06 LEVEL 1
Scale 1 : 100

NOTE:

D 11.4.6

ALL PRIVACY SCREEN TO A HEIGHT OF AT LEAST 1.7M ABOVE THE FINISHED SURFACE OR FLOOR LEVEL, WITH A UNIFORM TRANSPARENCY OF NO MORE THAN 25%

UNIT 1 & 6 (TYPE A)

LEVEL GROUND -	72.47 SQ.M.	LEVEL 1 BALCONY - 9.0 SQ.M.
LEVEL 1 -	70.84 SQ.M.	LEVEL 2 BALCONY - 6.0 SQ.M.
LEVEL 2 -	61.82 SQ.M.	**TOTAL - 15.0 SQ.M.**
TOTAL -	**204.13 SQ.M. (INC. EXTERNAL WALL)**	

UNIT 2, 3, 4 & 5 (TYPE B)

LEVEL GROUND -	72.97 SQ.M.	LEVEL 1 BALCONY - 9.0 SQ.M.
LEVEL 1 -	70.16 SQ.M.	LEVEL 2 BALCONY - 5.0 SQ.M.
LEVEL 2 -	61.14 SQ.M.	**TOTAL - 14.0 SQ.M.**
TOTAL -	**203.39 SQ.M. (INC. EXTERNAL WALL)**	

LEGEND:
- EXISTING
- NEW WORK
- DEMOLITION
- SOLAR BOLLARD LIGHT IN ACCORDANCE WITH D5.7.7-A1
- POS: ALL POS NOT STEEPER THAN 1:10
- ALL PARKING AREA MAX 5% FALL

ISSUE	REVISION	DRN	CHK / APP	DATE
1	DEVELOPMENT APPLICATION	JA	JA	10/05/20

MinD. ARCHITECTS

REASON FOR ISSUE: DEVELOPMENT APPLICATION
PROJECT No.: 2056
NORTH:
PROJECT: PROPOSED 6 UNITS DEVELOPMENT
PROJECT ADDRESS: 43A PIRIE STREET, NEW TOWN
CLIENT: TAS DREAM
DRAWING TITLE: LEVEL1
SCALE: As indicated @ A1
PROJECT DATE: SEPT 2019
DRAWING No.: DA03
REVISION: 1
PM 13/5/2020 9:45:26

Approved - General Manager Consent Only
GMC-21-23 15/04/2021

UNIT 1 & 6 (TYPE A)			
LEVEL GROUND -	72.47 SQ.M.	LEVEL 1 BALCONY -	9.0 SQ.M.
LEVEL 1 -	70.84 SQ.M.	LEVEL 2 BALCONY -	6.0 SQ.M.
LEVEL 2 -	61.82 SQ.M.	TOTAL -	15.0 SQ.M.
TOTAL -	204.13 SQ.M. (INC. EXTERNAL WALL)		

UNIT 2, 3, 4 & 5 (TYPE B)			
LEVEL GROUND -	72.87 SQ.M.	LEVEL 1 BALCONY -	9.0 SQ.M.
LEVEL 1 -	70.16 SQ.M.	LEVEL 2 BALCONY -	5.0 SQ.M.
LEVEL 2 -	61.14 SQ.M.	TOTAL -	14.0 SQ.M.
TOTAL -	203.39 SQ.M. (INC. EXTERNAL WALL)		

LEGEND:
- EXISTING
- NEW WORK
- DEMOLITION
- BL SOLAR BOLLARD LIGHT IN ACCORDANCE WITH E8.7.7-A1
- POS ALL POS NOT STEEPER THAN 1:10
- ALL PARKING AREA MAX 5% FALL

ISSUE	REVISION	DRN	CHK / APP	DATE
1	DEVELOPMENT APPLICATION	JA	JA	10/05/20

MinD. ARCHITECTS

REASON FOR ISSUE: DEVELOPMENT APPLICATION
PROJECT No.: 2056
PROJECT: PROPOSED 6 UNITS DEVELOPMENT
PROJECT ADDRESS: 43A PIRIE STREET, NEW TOWN
CLIENT: TAS DREAM
DRAWING TITLE: LEVEL2
SCALE: As indicated @ A1
PROJECT DATE: SEPT 2019
DRAWING No.: DA04
REVISION: 1

Approved - General Manager Consent Only
GMC-21-23 15/04/2021

1 A13 SOUTH-WEST ELEVATION
Scale 1 : 100

2 A13 SOUTH-EAST ELEVATION 1
Scale 1 : 100

3 A13 NORTH-WEST ELEVATION 1
Scale 1 : 100

4 A13 NORTH-EAST ELEVATION
Scale 1 : 100

NOTE:

D 11.4.6

ALL PRIVACY SCREEN TO A HEIGHT OF AT LEAST 1.7M ABOVE THE FINISHED SURFACE OR FLOOR LEVEL, WITH A UNIFORM TRANSPARENCY OF NO MORE THAN 25%

MATERIAL LEGEND:

FC1 - JAMESHARDIE 400 AXON
FC2 - JAMESHARDIE EASYLAP PANEL
FC3 - JAMESHARDIE STRIA
FC1 - JAMESHARDIE 133 AXON
TM1 - TIMBER LOOKED CLADDING
MC1 - STANDING SEAM METAL CLADDING
MC2 - STANDING SEAM METAL CLADDING
MC3 - LONGLINE METAL CLADDING
BR1 - FACE BRICK TYPE 1
BR2 - FACE BRICK TYPE 1

ISSUE	REVISION	DRN	CHK / APP	DATE
1	DEVELOPMENT APPLICATION	JA	JA	10/05/20

MinD. ARCHITECTS

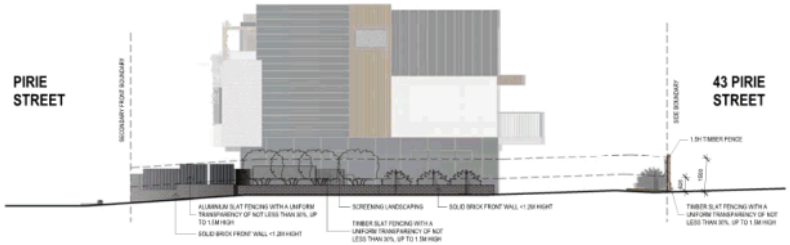
REASON FOR ISSUE: DEVELOPMENT APPLICATION
PROJECT No.: 2056
PROJECT: PROPOSED 6 UNITS DEVELOPMENT
PROJECT ADDRESS: 43A PIRIE STREET, NEW TOWN
CLIENT: TAS DREAM
DRAWING TITLE: ELEVATIONS
SCALE: 1 : 100 @ A1
PROJECT DATE: SEPT 2019
DRAWING No.: DA05
REVISION: 1

Approved - General Manager Consent Only
GMC-21-23 15/04/2021

1 A13 NORTH-WEST ELEVATION 2
Scale 1 : 100

2 A13 SOUTH-EAST ELEVATION 2
Scale 1 : 100

3 A13 FRONT FENCE ELEVATION - SOUTH-WEST
Scale 1 : 100



4 A13 FRONT FENCE ELEVATION - SOUTH-EAST
Scale 1 : 100

NOTE:

D 11.4.6

ALL PRIVACY SCREEN TO A HEIGHT OF AT LEAST 1.7M ABOVE THE FINISHED SURFACE OR FLOOR LEVEL, WITH A UNIFORM TRANSPARENCY OF NO MORE THAN 25%

MATERIAL LEGEND:

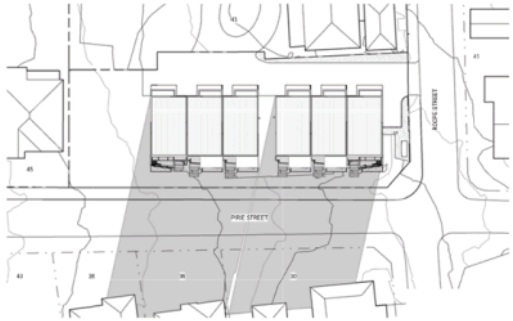
FC1 - JAMESHARDIE 400 AXON	MC1 - STANDING SEAM METAL CLADDING
FC2 - JAMESHARDIE EASYLAP PANEL	MC2 - STANDING SEAM METAL CLADDING
FC3 - JAMESHARDIE STRIA	MC3 - LONGLINE METAL CLADDING
FC1 - JAMESHARDIE 133 AXON	BR1 - FACE BRICK TYPE 1
TM1 - TIMBER LOOKED CLADDING	BR2 - FACE BRICK TYPE 1

ISSUE	REVISION	DRN	CHK / APP	DATE
1	DEVELOPMENT APPLICATION	JA	DA	10/05/20

MinD. ARCHITECTS

REASON FOR ISSUE: DEVELOPMENT APPLICATION
PROJECT No.: 2056
PROJECT: PROPOSED 6 UNITS DEVELOPMENT
PROJECT ADDRESS: 43A PIRIE STREET, NEW TOWN
CLIENT: TAS DREAM
DRAWING TITLE: ELEVATIONS
SCALE: 1 : 100 @ A1
PROJECT DATE: SEPT 2019
DRAWING No.: DA06
REVISION: 1

Approved - General Manager Consent Only
GMC-21-23 15/04/2021



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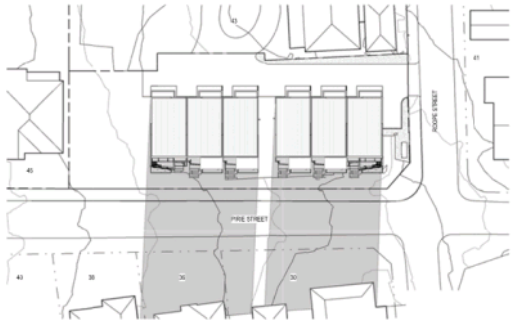

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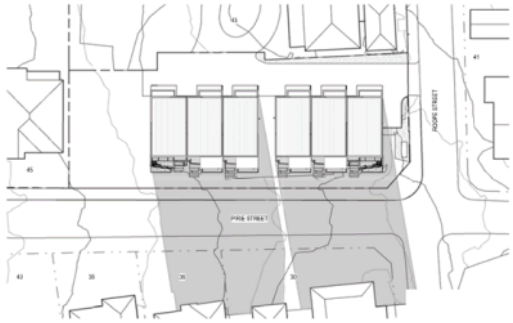

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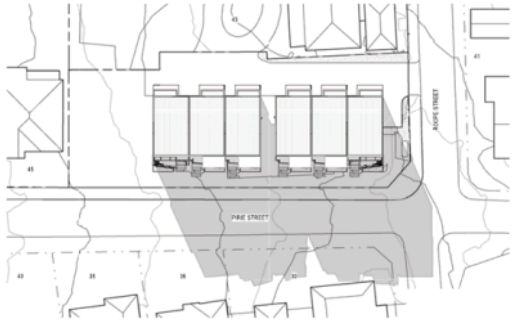

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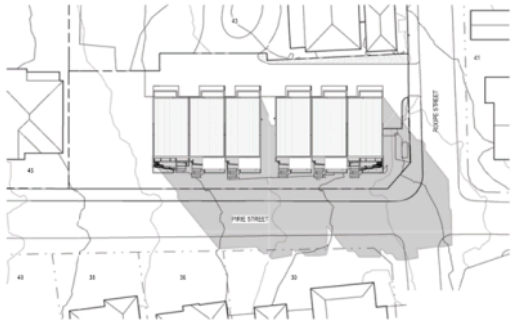

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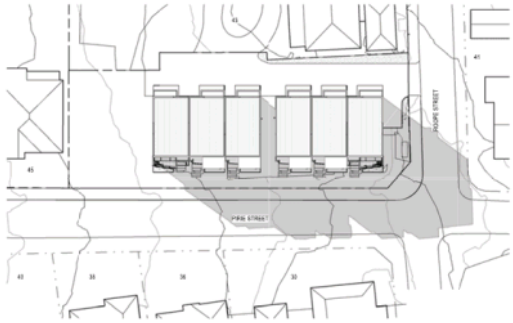

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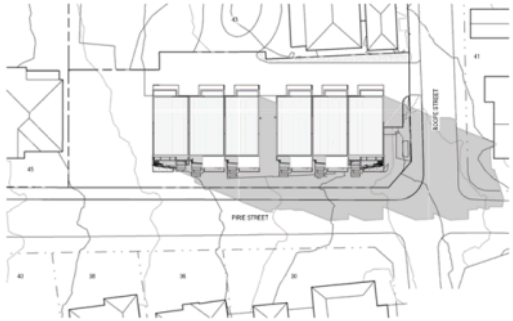

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ISSUE	REVISION	DRN	CHK / APP	DATE
1	DEVELOPMENT APPLICATION	JA	JA	10/05/20

MinD. ARCHITECTS

REASON FOR ISSUE: DEVELOPMENT APPLICATION

PROJECT No.: 2056

NORTH

PROJECT: PROPOSED 6 UNITS DEVELOPMENT

PROJECT ADDRESS: 43A PIRIE STREET, NEW TOWN

CLIENT: TAS DREAM

DRAWING TITLE: SHADOW DIAGRAMS

SCALE: 1 : 400 @ A1

PROJECT DATE: SEPT 2019

DRAWING No.: DA07

REVISION: 1

3/12/2021 8:45:45 PM

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GMC 21-23 15/04/2021

METAL CLADDING
METAL CLADDING
TIMBER LOOKED CLADDING
TIMBER LOOKED CLADDING
FACE BRICK

FEATURE TIMBER SCREENING

FIBRE CEMENT CLADDING
ALUMINIUM SLAT FENCING

VIEW FROM CORNER OF ROOPE STREET. ARTISTS IMPRESSION. MATERIAL SUBJECT TO FINAL SELECTION.

VIEW FROM CORNER OF PIRIE STREET. ARTISTS IMPRESSION. MATERIAL SUBJECT TO FINAL SELECTION.

VIEW FROM CORNER OF PIRIE STREET. ARTISTS IMPRESSION. MATERIAL SUBJECT TO FINAL SELECTION.

ISSUE	REVISION	DRN	CHK APP	DATE
	DEVELOPMENT APPLICATION			

21 JUNE

MinD. ARCHITECTS

REASON FOR ISSUE: DEVELOPMENT APPLICATION

PROJECT No.: 2056

PROJECT: PROPOSED 6 UNITS DEVELOPMENT

PROJECT ADDRESS: 43A PIRIE STREET, NEW TOWN

CLIENT: TAS DREAM

DRAWING TITLE: 3D PERSPECTIVES AND MATERIALS

SCALE: @ A1

PROJECT DATE: SEPT 2019

DRAWING No.: DA08

REVISION: 1

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Manager Consent Only
GMC-21-23 15/04/2021

ATTACHMENT B

Concept Services Information

City of HOBART
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CONCEPT SERVICES REPORT

Residential Development
43A Pirie Street, New Town

March 2021

Engineers & Planners

Approved - General Manager Consent Only
City of HOBART GMC-21-23 15/04/2021

Engineers & Planners

Johnstone McGee & Gandy Pty Ltd
ABN 76 473 834 852 ACN 009 547 139
www.jmg.net.au

HOBART OFFICE
117 Harrington Street
Hobart TAS 7000
Phone (03) 6231 2555
infohbt@jmg.net.au

LAUNCESTON OFFICE
49-51 Elizabeth Street
Launceston TAS 7250
Phone (03) 6334 5548
infoltn@jmg.net.au

Issuing Office: 117 Harrington Street, Hobart 7000
JMG Project No. J203140PH

Document Issue Status

Ver.	Issue Date	Description	Originator		Checked		Approved	
					Civil	Planning		
1		Issued for Client Review	HL		CJM			
2	19.03.2021	Issued for DA	HL		CJM		GLA	

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1 Introduction

This concept services report has been prepared in support of a development application to be lodged with Hobart City Council regarding the construction of a residential development at 43A Pirie Street, New Town, PID:5682688. The proposal involves the demolition of existing buildings and a new development comprising of 6, 5 bedroom, multi storey residential apartments.

The property has an area of 1370 m^2 and is located on the corner of Pirie and Roope Street, with a high point towards the eastern property boundary and falling towards west with grades of 3-9%. The property is covered with grasses and shrubs alongside some notably large trees towards the NW boundary. The existing building on the property has an approx. area of 460 m^2 and the existing hardstand within the boundary has an approx. area of 400 m^2. Both the building and hardstand are to be demolished as part of the proposed development.

The redevelopment is to be serviced with power, communications, water, sewer and stormwater connections all of which are to be installed as part of the development. This report addresses how each of these are to be provided to meet authority and planning scheme requirements.

Figure 1 - Site Locality Plan

2 Power, Lighting and Communications

2.1 Applicable Design Standards

- Electrical Infrastructure on the lot shall be designed in accordance with AS/NZS3000, Australian / New Zealand Wiring Rules.
- Lighting of common areas, where required, shall be provided to meet AS.NZS1158 .3.1 - 2020.
- Nation Broadband Network connections shall be provided to each unit and tenancy in accordance with the NBN standards "Residential preparation and installation: Single Dwelling Units (SDUs) and Multi Dwelling Units (MDUs)" (1).

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City of HOBART GMC-21-23 15/04/2021

2.2 *Proposed System*

Electrical supply to the lot is currently being provided by TasNetworks via an existing substation and turret that both reside within the 43A property boundary. This substation also services the adjacent property, 43 Pirie Street.

It is anticipated that TasNetworks will provide electrical supply to the lot through the reuse of the existing turret as part of the redevelopment. Internal mains will be run from this turret to switchboards to be located at each of the units.

Where required by the planning scheme lighting of common areas including the driveway and paths will be provided in accordance with the requirements of AS.NZS 1158.3.1, the electrical supply to the common area lighting shall be provided from a dedicated Common Area switchboard.

Existing NBN services are located at the back of the footpath on Pirie Street adjacent to the property boundary. A pit is located at the existing driveway crossover of the lot, servicing both 43A Pirie Street and 43 Pirie Street.

NBN connections will be provided from the property boundary to the MDU of each unit in accordance with NBN guidelines, "Residential preparation and installation: Single Dwelling Units (SDUs) and Multi Dwelling Units (MDUs)".

NBN designs shall be prepared in accordance with the NBN design standards using the NBN Assisted Drafting Tool (ADT) and be submitted to and approved by NBN prior to the commencement of installation.

3 Sanitary Drainage System

3.1 *Applicable Design Standards*

The sanitary drainage system for the site shall be designed to comply with AS 3500.2 National Plumbing and Drainage Code - Sanitary Plumbing and Sanitary Drainage and to TasWater Standards (4).

An existing TasWater DN150 sewer main runs through the neighbouring property 43 Pirie Street, with a manhole located near the centre of the property. An existing private sewer main servicing 43A Pirie Street runs along the NE property boundary and connects to the manhole aforementioned. This existing private sewer main is to be removed and reinstated with a new public sewer main to the lot boundary.

3.2 *Proposed System*

The existing private sewer main servicing the property, inside of the NE boundary, is to be removed and capped at the existing sewer branch located on 43 Pirie Street, such that the existing main servicing 43 Pirie Street is not impaired.

The property will be serviced by new internal sanitary drainage pipework to be designed following the approval of the development. This pipework will be connected to a new, public DN150 sewer connected to the existing TasWater manhole located in centre of the neighbouring property, 43 Pirie Street. This main will be located within a 2.5m wide TasWater services easement. The DN150 connection size complies with the minimum lot connection size required by TasWater and referenced on Standard Drawing MRWA-S-104A.

Proposed floor levels ensure that minimum grades of 1:60 can be achieved on all internal pipework connecting to the Lot connection point. DN100 branches are to be provided to service the plumbing for to each unit which will be designed following approval of the development.

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Refer Appendix B for concept layouts of the proposed sanitary services for the development.

The TasWater supplement to the Sewerage Code of Australia has been used to estimate the flows sewerage flows from the development as follows:

Table 1: Residential Sewer Flow Calculations

	Value	Units
Number of Units (ET code: RA03)	6	No.
Equivalent Tenements	5.3	(-)
Average Dry Weather Flow	0.031	(L/s)
Peak Dry Weather Flow	0.399	(L/s)
Total Design Flow	0.533	(L/s)

Refer Appendix D for sewer flow calculations.

4 Water

4.1 Applicable Design Standards

The water reticulation system for the site shall be designed to comply with AS3500.1 National Plumbing and Drainage Code - Water Supply.

Water metering shall be provided in accordance with TasWater's Water Metering & Guidelines.

Sub-Metering shall be provided in accordance with TasWater's Southern Region Sub-Metering Policy.

Backflow Protection of the site shall be provided in accordance with TasWater's Water Boundary Backflow Containment Selection Guidelines.

Fire hydrant coverage of the site is to be provided in accordance with AS3500.1 and Table 8.8 of TasWater's Supplement to the Water Supply Code of Australia WSA-03 2011.

4.2 Proposed System

The existing water connection to the site, located in the southernmost corner of the property, is to be made redundant and capped at the property boundary. A new DN32 private water main connection will be installed towards the NW of the property boundary, connecting into the existing DN100 TasWater main that runs along the opposite side of Pirie Street to the 43A site boundary.

A Low Hazard DN32 Master water meter is to be provided inside of the property boundary with a non-testable dual check device installed immediately after the master water meter. The size of this connection is in accordance with TasWater Water Metering Guidelines Table 1. New water supply pipework installed in accordance with AS3500.1 shall be provided from the boundary master meter to each of the new Units.

7 additional sub meters are to be installed after the dual check devices to service and monitor individual water usage for all residential units and the communal garden in accordance with TasWater's Southern Region Sub-Metering Policy.

Existing fire hydrants are located on both Pirie Street and Roope Street on the opposing sides of the street to the lot. The location and abundance of these existing hydrants satisfies coverage requirements set out by AS2419.1 Section 3.5 'External Hydrants' such that no additional internal

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hydrants are necessary as part of the development. Any additional changes to the Fire System and internal reticulation system are to be designed following development approval.

Refer Appendix B for Water Services Concept Drawings

The TasWater supplement to the MRWA Water Supply Code has been used to estimate the flows as follows:

Table 2: Residential Water Demand Calculations <100ET - AS3500.1-2003

	Value	Units
Number of Units (ET code: RA03)	6	(-)
Probable Simultaneous Demand	1.03	(L/s)

Refer Appendix D for Water Flow Calculations.

5 Stormwater

5.1 Applicable Planning Scheme Requirements

The applicable planning scheme is the *Hobart Interim Planning Scheme 2015*, with the applicable provisions provided by Code E7.0, Stormwater Management Code. The proposal has been assessed against the requirements of the scheme as detailed in section 5.3 (5).

5.2 Applicable Design Standards

The stormwater reticulation system for the site shall be designed to comply with AS3500.3 National Plumbing and Drainage Code - Stormwater Drainage.

5.3 Proposed Systems

The property currently discharges to the kerb and channel. As part of the development a new private stormwater main is to be installed with connections servicing all residential units and draining to the existing DN300 stormwater main on Pirie Street near the western corner of the lot. A new private stormwater main and grate is to be installed, connecting into the existing stormwater connection in the Northern corner of neighbouring 43 Pirie Street. A spoon drain collecting in a grated pit will run along the Northeast boundary to prevent overland flow from effecting neighbouring properties.

Refer Appendix B for Stormwater Services Concept Drawings.

5.3.1 Planning Scheme Requirements E7.7.1

A1 - Stormwater Disposal

The development meets the performance criteria P1:

The site will drain by gravity via the internal stormwater network and connect to the DN150 stormwater lot connection provided as part of the development.

A2 - Stormwater Quality and Quantity

The development meets the performance criteria P2:

Although carparking is provided for more than 6 cars, all carparks are located undercover and do not contribute to the site's stormwater runoff. Therefore stormwater treatment is not required in order to meet the stormwater quality targets as detailed in Table E7.1

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A3 - Minor Stormwater Drainage System Design

The development is compliant with acceptable solution A3:

a) The internal stormwater network and associated public stormwater branch extension will be sized to accommodate the 5% AEP runoff from the property based on it being 100% impervious. Due to a proposed reduction in impervious area and thus, a reduction in peak flows, no additional detention is required.
b) As the estimated existing peak catchment flow is 0.0248m³/s and the estimated new peak catchment flow is 0.0238m³/s

A4 - Major Stormwater Drainage System Design

The development is compliant with acceptable solution A4:

The site external pavement levels and pathway connections to the front doors ensure surface water flows on the site drain away from the proposed buildings ensuring inundation of the proposed buildings does not occur in a 1% AEP storm event.

6 Access and Parking

6.1 Planning Scheme Requirements

The applicable planning scheme is the *Hobart Interim Planning Scheme 2015*; with the applicable provisions provided by E6 Parking and Access Code.

The proposal has been assessed against the requirements of the Parking and Access code in section 6.3.

6.2 Applicable Design Standards

Carparking for the site is to be designed in accordance with the requirements of AS/NZS 2890.1:2004 Off-Street Parking and AS/NZS 2890.6:2009 Off-street parking for people with disabilities.

6.3 Proposed Layout - Planning Scheme Requirements

6.3.1 E6.6 Use Standards

E6.6.1 - Number of carparking spaces

Refer Planning Report & TIA

E6.6.2 - Number of accessible carparking spaces

Refer Planning Report.

E6.6.3 - Number of motorcycle parking spaces

Refer Planning Report.

E6.6.4 - Number of bicycle parking spaces

Refer Planning Report.

6.3.2 E6.7 Development Standards

E6.7.1 Number of Vehicular Accesses

A1 - The acceptable solution A1 is met.

The site is provided with a singular vehicular access.

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City of HOBART GMC-21-23 15/04/2021

E6.7.2 Design of Vehicular Accesses

A1 - The acceptable solution A1 is met.

The singular access complies 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 in that:

(a) It has a minimum width of 3.6m with exceeds the requirements for a Category 1 driveway of a Class 1A parking facility onto a local street.
(b) The driveway will have less than 30 vehicle movements in a peak hour.
(c) The access location is not within the prohibited area shown in Figure 3.1 of AS2890.1.
(d) Sight distance at the access driveway for vehicles and pedestrians complies with the requirements of Figure 3.2 & 3.3 of AS2890.1.
(e) The gradient of the driveway is less than 20% and 2.5% across the footpath. Transitions to comply with the IPWEA standard drawing TSD-R09-v3.

E6.7.3 Vehicular Passing Areas Along an Access

Refer TIA Report.

E6.7.4 On-Site Turning

Refer TIA Report.

E6.7.5 Layout of Parking Areas

Refer TIA Report.

E6.7.6 Surface Treatment of Parking Areas

A1 - The acceptable solution A1 is met.

The driveways and parking areas are to be constructed from reinforced concrete or asphalt. The carparks are located within the basement floor and therefore do not contribute to stormwater runoff. A stormwater pit in the lowest corner of the driveway will allow the drainage of any water to the properties stormwater connection. Refer Appendix B - concept services plan.

E6.7.7 Lighting of Parking Areas

A1 - The acceptable solution A1 is met.

Carpark lighting will be provided in accordance with 3.1 "Basis of Design" as well as 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.

E6.7.8 Landscaping of Parking Areas

P1 - The development meets the performance criteria P1:

a) The internal carpark will have minimal visual impact on the streetscape other than the entryway.
b) Enclosed parking areas has no amenity impact on neighbouring properties and the streetscape.
c) Enclosed parking areas are private, secure and can be actively protected via garage doors, etc.

E6.7.9 Design of Motorcycle Parking Areas

A1 - The acceptable solution A1 is met.

Motorcycle Carparking spaces are not required.

E6.7.10 Design of Bicycle Parking Areas

A1 - The acceptable solution A1 is met.

Bicycle Carparking spaces are not required.

E6.7.11 Bicycle End of Trip Facilities

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A1 - The acceptable solution A1 is met.

Bicycle Carparking spaces are not required.

E6.7.12 Siting of Car Parking

A1 - The acceptable solution A1 is met.

The carpark is located behind the proposed building line of the development.

E6.7.13 Facilities for Commercial Vehicles

A1 - The acceptable solution A1 is met.

As a residential development, it is anticipated that commercial off-street development is not required.

E6.7.14 Access to a Road

A1 - The acceptable solution A1 is met.

Access to Roope Street is provided by a single 5.5m dual vehicle crossover to IPWEA Standard Drawing TSD-R09-V3.

7 Conclusion

The proposed unit development can be constructed with the provision of all required services and on-site parking to comply with the requirements of Council's Planning Scheme, TasWater's Design Guidelines and the applicable Australian Standards.

The property is serviced with communications, power, water sewer and stormwater connections adequately sized to cater for the number of units.

Vehicle parking and turnings areas have been provided to comply with the minimum number required by the planning scheme and have dimensions and manoeuvring areas which comply with AS/NZS 2890.1 - Off Street Parking.

Stormwater discharge from the site will not increase from pre-development levels and can be drained to Council's existing piped stormwater infrastructure.

Overland flows on the site can be managed without impact to the proposed dwellings.

Approved - General Manager Consent Only GMC-21-23 15/04/2021

8 References

1. Preparation and Installation Guide for-SDUS and MDUS. [Online] https://www.nbnco.com.au/content/dam/nbnco2/2018/documents/NewDevs/preparation-and-installation-guide-for-sdus-and-mdus.pdf.

2. Installing Pit and Conduit Infrastructure. [Online] https://www.nbnco.com.au/content/dam/nbnco/documents/installing-pit-and-conduit-infrastructure.pdf.

3. Pit and Pipe Design Guide. [Online] https://www.nbnco.com.au/content/dam/nbnco2/2018/documents/NewDevs/pit-and-pipe-design-guide.pdf.

4. Development Technical Standards. [Online] https://www.taswater.com.au/Development/Technical-Standards.

5. Planning Scheme (iplan). [Online] https://iplan.tas.gov.au/Pages/XC.Home/Default.aspx?hid=95613.

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GMC-21-23 15/04/2021

APPENDIX A

Survey Plan

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GMC-21-23 15/04/2021

1 DA06 LEVEL GROUND
Scale 1 : 100

UNIT 1 & 6 (TYPE A)			
LEVEL GROUND -	72.47 SQ.M.	LEVEL 1 BALCONY -	9.0 SQ.M.
LEVEL 1 -	70.84 SQ.M.	LEVEL 2 BALCONY -	6.0 SQ.M.
LEVEL 2 -	61.82 SQ.M.	TOTAL -	15.0 SQ.M.
TOTAL -	204.13 SQ.M. (INC. EXTERNAL WALL)		

UNIT 2, 3, 4 & 5 (TYPE B)			
LEVEL GROUND -	72.87 SQ.M.	LEVEL 1 BALCONY -	9.0 SQ.M.
LEVEL 1 -	70.16 SQ.M.	LEVEL 2 BALCONY -	5.0 SQ.M.
LEVEL 2 -	61.14 SQ.M.	TOTAL -	14.0 SQ.M.
TOTAL -	203.39 SQ.M. (INC. EXTERNAL WALL)		

LEGEND:
EXISTING
NEW WORK
DEMOLITION
SOLAR BOLLARD LIGHT IN ACCORDANCE WITH SU 7.1-A1
POS ALL POS NOT STEEPER THAN 1:10
- ALL PARKING AREA MAX 5% FALL

ISSUE	REVISION	DRN	CHK / APP	DATE
1	DEVELOPMENT APPLICATION	DA	DA	10/05/20

MinD. ARCHITECTS
ARCHITECT: DAVID MAURO AU
PHONE: [redacted]
EMAIL: [redacted]
WEBSITE: [redacted]

REASON FOR ISSUE: DEVELOPMENT APPLICATION
PROJECT No.: 2056
NORTH:
PROJECT: PROPOSED 6 UNITS DEVELOPMENT
PROJECT ADDRESS: 43A PIRIE STREET, NEW TOWN
CLIENT: TAS DREAM
DRAWING TITLE: LEVEL GROUND
SCALE: As indicated @ A1
PROJECT DATE: SEPT 2019
DRAWING No.: DA02
REVISION: 1
PLOTTED: 5:30:08 PM 15/04/2021

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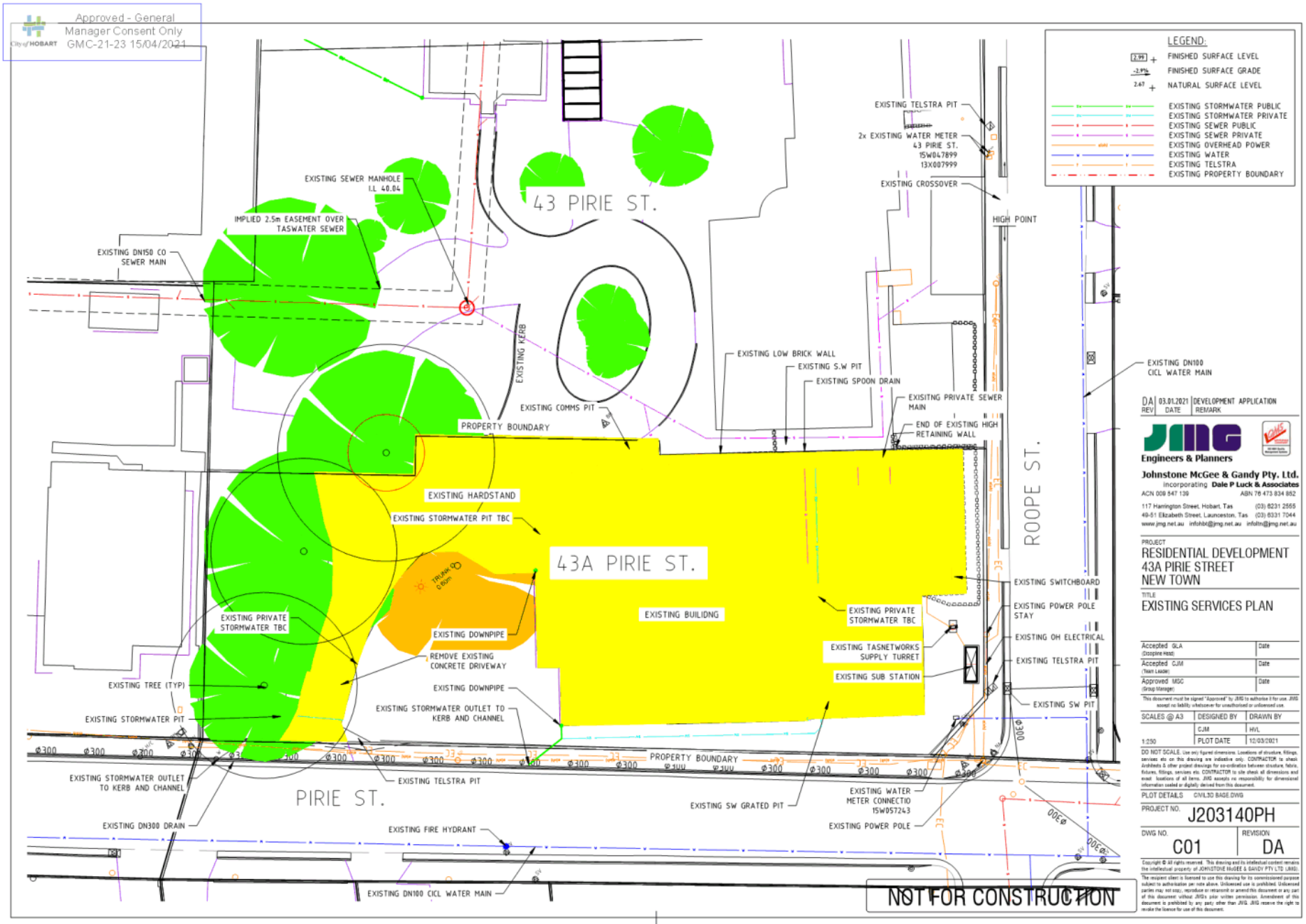
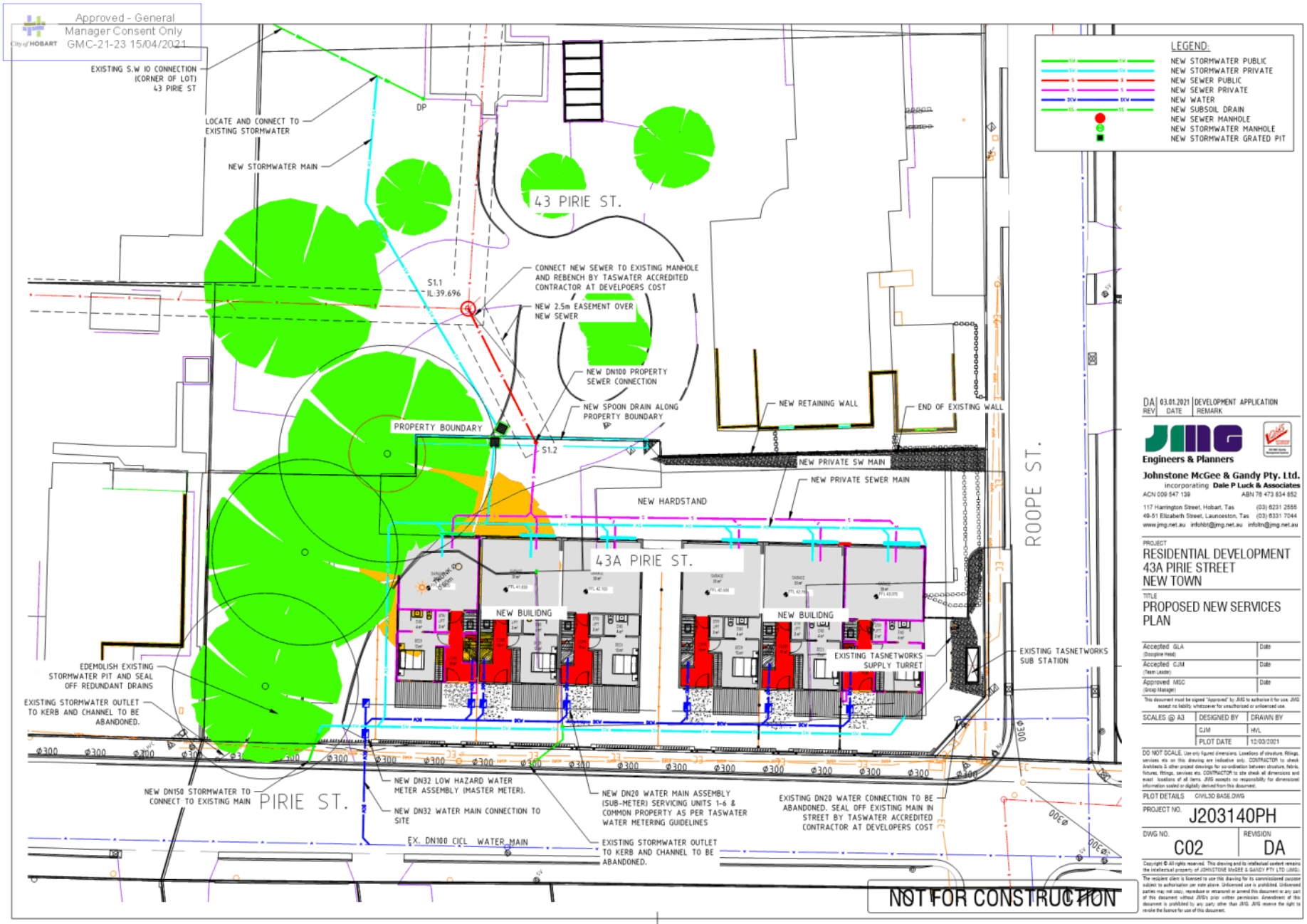
Manager Consent Only
GMC-21-23 15/04/2021

APPENDIX B

Unit Development Concept Civilworks Plans


Approved - General Manager Consent Only
GMC-21-23 15/04/2021
LEGEND:
FINISHED SURFACE LEVEL
FINISHED SURFACE GRADE
NATURAL SURFACE LEVEL
EXISTING STORMWATER PUBLIC
EXISTING STORMWATER PRIVATE
EXISTING SEWER PUBLIC
EXISTING SEWER PRIVATE
EXISTING OVERHEAD POWER
EXISTING WATER
EXISTING TELSTRA
EXISTING PROPERTY BOUNDARY
43 PIRIE ST.
43A PIRIE ST.
PIRIE ST.
ROOPE ST.
EXISTING SEWER MANHOLE
IMPLIED 2.5m EASEMENT OVER TASWATER SEWER
EXISTING DN150 CO SEWER MAIN
EXISTING KERB
EXISTING COMMS PIT
PROPERTY BOUNDARY
EXISTING HARDSTAND
EXISTING STORMWATER PIT TBC
EXISTING BUILDING
EXISTING DOWNPIPE
REMOVE EXISTING CONCRETE DRIVEWAY
EXISTING PRIVATE STORMWATER TBC
EXISTING TREE (TYP)
EXISTING STORMWATER PIT
EXISTING STORMWATER OUTLET TO KERB AND CHANNEL
EXISTING TELSTRA PIT
EXISTING DN300 DRAIN
EXISTING FIRE HYDRANT
EXISTING DN100 CICL WATER MAIN
EXISTING TELSTRA PIT
2x EXISTING WATER METER
43 PIRIE ST.
15W047899
13X007999
EXISTING CROSSOVER
HIGH POINT
EXISTING LOW BRICK WALL
EXISTING S.W PIT
EXISTING SPOON DRAIN
EXISITNG PRIVATE SEWER MAIN
END OF EXISTING HIGH RETAINING WALL
EXISTING DN100 CICL WATER MAIN
EXISTING SWITCHBOARD
EXISTING POWER POLE STAY
EXISTING OH ELECTRICAL
EXISTING TELSTRA PIT
EXISTING SW PIT
EXISTING TASNETWORKS SUPPLY TURRET
EXISTING SUB STATION
EXISTING SW GRATED PIT
EXISTING WATER METER CONNECTIO
15W057243
EXISTING POWER POLE
NOT FOR CONSTRUCTION
DA 03.01.2021 DEVELOPMENT APPLICATION
REV DATE REMARK
Engineers & Planners
Johnstone McGee & Gandy Pty. Ltd.
incorporating Dale P Luck & Associates
ACN 009 547 139 ABN 76 473 834 852
117 Harrington Street, Hobart, Tas (03) 6231 2555
49-51 Elizabeth Street, Launceston, Tas (03) 6331 7044
www.jmg.net.au infohbt@jmg.net.au infoltn@jmg.net.au
PROJECT
RESIDENTIAL DEVELOPMENT
43A PIRIE STREET
NEW TOWN
TITLE
EXISTING SERVICES PLAN
Accepted GLA (Discipline Head) Date
Accepted CJM (Team Leader) Date
Approved MGC (Group Manager) Date
SCALES @ A3 DESIGNED BY CJM DRAWN BY HVL
1:250 PLOT DATE 12/03/2021
PLOT DETAILS CIVIL3D BASE.DWG
PROJECT NO. J203140PH
DWG NO. C01 REVISION DA


Approved - General Manager Consent Only
City of HOBART GMC-21-23 15/04/2021
EXISTING S.W IO CONNECTION (CORNER OF LOT) 43 PIRIE ST
LOCATE AND CONNECT TO EXISTING STORMWATER
NEW STORMWATER MAIN
DP
43 PIRIE ST.
S1.1 IL:39.696
CONNECT NEW SEWER TO EXISTING MANHOLE AND REBENCH BY TASWATER ACCREDITED CONTRACTOR AT DEVELPOERS COST
NEW 2.5m EASEMENT OVER NEW SEWER
NEW DN100 PROPERTY SEWER CONNECTION
NEW SPOON DRAIN ALONG PROPERTY BOUNDARY
PROPERTY BOUNDARY
S1.2
NEW RETAINING WALL
END OF EXISTING WALL
NEW PRIVATE SW MAIN
NEW PRIVATE SEWER MAIN
NEW HARDSTAND
43A PIRIE ST.
NEW BUILDING
NEW BUILDING
ROOPE ST.
EXISTING TASNETWORKS SUPPLY TURRET
EXISTING TASNETWORKS SUB STATION
EDEMOLISH EXISTING STORMWATER PIT AND SEAL OFF REDUNDANT DRAINS
EXISTING STORMWATER OUTLET TO KERB AND CHANNEL TO BE ABANDONED.
NEW DN150 STORMWATER TO CONNECT TO EXISTING MAIN
PIRIE ST.
NEW DN32 LOW HAZARD WATER METER ASSEMBLY (MASTER METER).
NEW DN32 WATER MAIN CONNECTION TO SITE
EX. DN100 CICL WATER MAIN
NEW DN20 WATER MAIN ASSEMBLY (SUB-METER) SERVICING UNITS 1-6 & COMMON PROPERTY AS PER TASWATER WATER METERING GUIDELINES
EXISTING STORMWATER OUTLET TO KERB AND CHANNEL TO BE ABANDONED.
EXISTING DN20 WATER CONNECTION TO BE ABANDONED. SEAL OFF EXISTING MAIN IN STREET BY TASWATER ACCREDITED CONTRACTOR AT DEVELOPERS COST
LEGEND:
NEW STORMWATER PUBLIC
NEW STORMWATER PRIVATE
NEW SEWER PUBLIC
NEW SEWER PRIVATE
NEW WATER
NEW SUBSOIL DRAIN
NEW SEWER MANHOLE
NEW STORMWATER MANHOLE
NEW STORMWATER GRATED PIT
DA 03.01.2021 DEVELOPMENT APPLICATION
REV DATE REMARK
JMG Engineers & Planners
Johnstone McGee & Gandy Pty. Ltd.
incorporating Dale P Luck & Associates
ACN 009 547 139 ABN 76 473 834 852
117 Harrington Street, Hobart, Tas (03) 6231 2555
49-51 Elizabeth Street, Launceston, Tas (03) 6331 7044
www.jmg.net.au infohbt@jmg.net.au infoltn@jmg.net.au
PROJECT
RESIDENTIAL DEVELOPMENT
43A PIRIE STREET
NEW TOWN
TITLE
PROPOSED NEW SERVICES PLAN
Accepted GLA (Discipline Head) Date
Accepted CJM (Team Leader) Date
Approved MSC (Group Manager) Date
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CJM HVL
PLOT DATE 12/03/2021
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PLOT DETAILS CIVIL3D BASE.DWG
PROJECT NO. J203140PH
DWG NO. C02
REVISION DA
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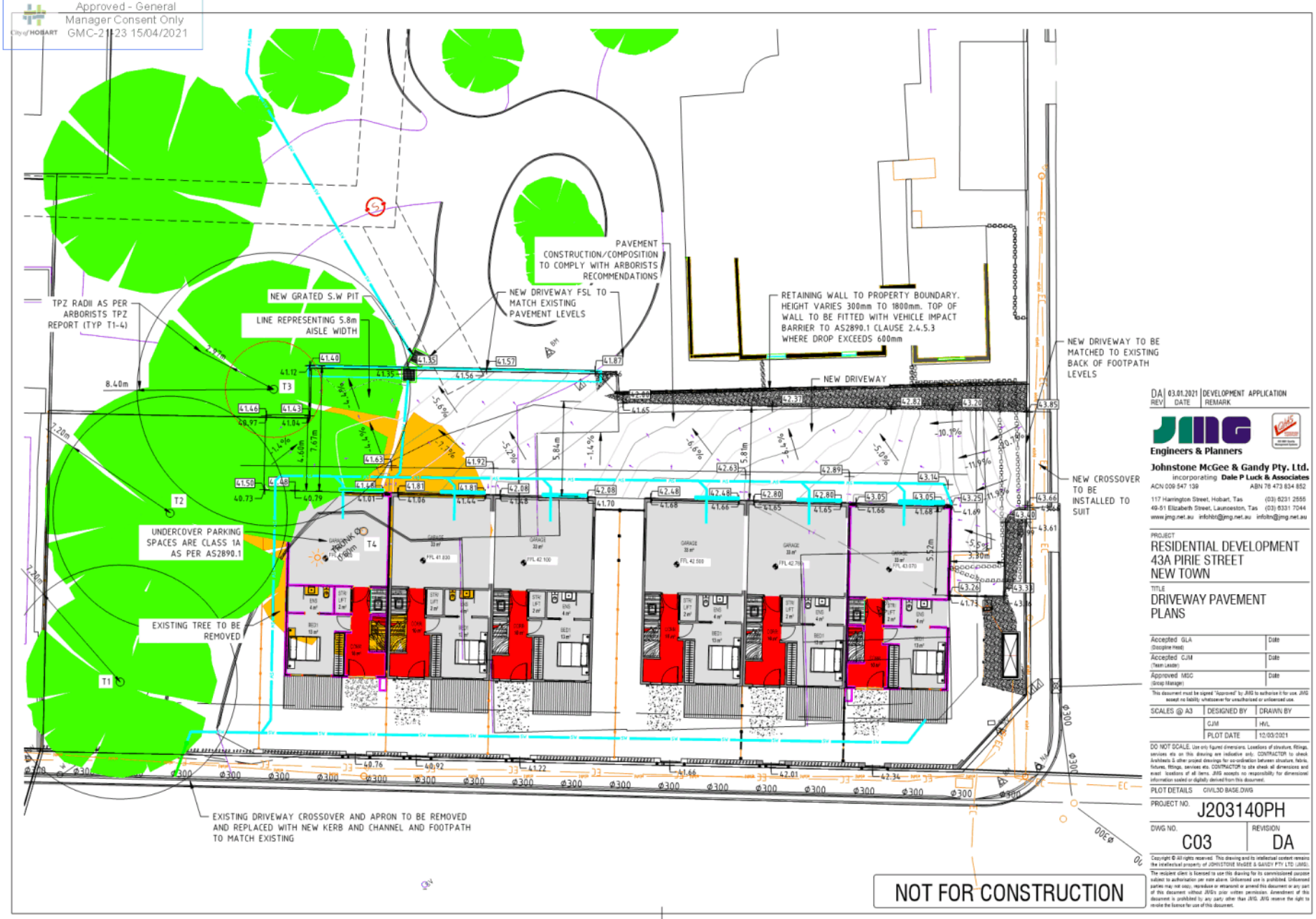

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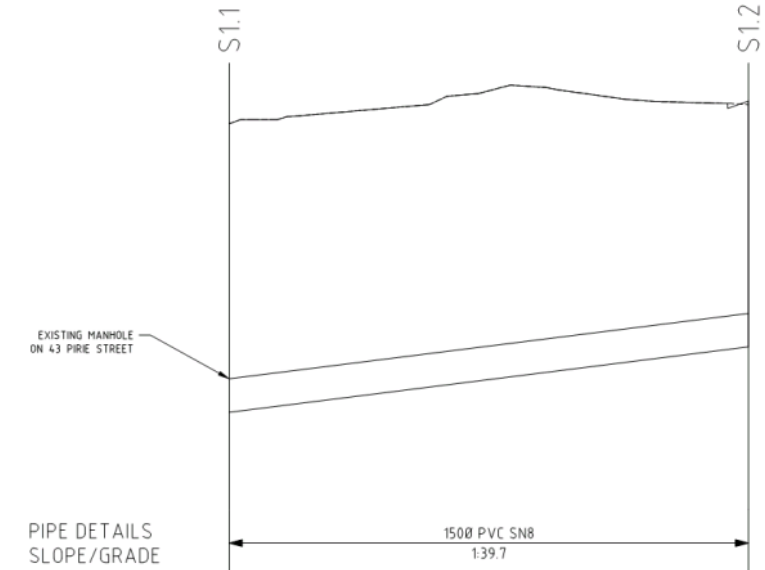

PIPE DETAILS SLOPE/GRADE DATUM RL 39.3		
DEPTH TO INVERT	1.292	1.101
INVERT LEVEL	40.126	40.419
FINISHED SURFACE	41.418	41.520
EXISTING SURFACE	41.418	41.503
CHAINAGE	0.000	11.629
	11.629	

SEWER LONGITUNDINAL SECTION FOR LINE S1
SCALES: HORIZONTAL 1:100 VERTICAL 1:20

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incorporating Dale P Luck & Associates
ACN 009 547 139 ABN 76 473 834 852
117 Harrington Street, Hobart, Tas (03) 6231 2555
49-51 Elizabeth Street, Launceston, Tas (03) 6331 7044
www.jmg.net.au infohbt@jmg.net.au infoltn@jmg.net.au

PROJECT
RESIDENTIAL DEVELOPMENT
43A PIRIE STREET
NEW TOWN

TITLE
NEW TASWATER SEWER PROFILE

Accepted GLA (Discipline Head)	Date
Accepted CJM (Team Leader)	Date
Approved MSC (Group Manager)	Date

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	CJM	HVL
	PLOT DATE	12/03/2021

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PLOT DETAILS CIVIL3D BASE.DWG

PROJECT NO. J203140PH

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117 Harrington Street, Hobart, Tas (03) 6231 2555
49-51 Elizabeth Street, Launceston, Tas (03) 6331 7044
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PROJECT
RESIDENTIAL DEVELOPMENT
43A PIRIE STREET
NEW TOWN

TITLE
DRIVEWAY TURNING PATHS

Accepted GLA (Discipline Head)	Date
Accepted CJM (Team Leader)	Date
Approved MSC (Group Manager)	Date

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	PLOT DATE	12/03/2021

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City of HOBART GMC-21-23 15/04/2021

	R.L. 32.000																							
DESIGN SURFACE	43.752	43.637	43.522	43.409	43.407	43.292	43.185	43.066	42.949	42.865	42.743	42.624	42.583	42.501	42.346	42.293	42.236	42.038	42.011	41.942	41.888	41.789	41.674	41.607	41.563	41.519	41.448	41.464	41.473
EXISTING SURFACE	43.762	42.699	41.718	41.679	41.679	41.679	41.677	41.671	41.662	41.654	41.646	41.646	41.646	41.646	41.650	41.656	41.663	41.676	41.645	41.613	41.468	41.337	41.252	41.119	41.040	40.974	40.927	40.846	40.814
CHAINAGE	0.00	1.00	2.00	2.98	3.00	4.00	4.66	6.00	8.00	10.00	12.00	14.00	16.00	18.00	20.00	22.00	24.00	26.00	28.00	30.00	32.00	34.00	36.00	38.00	40.00	42.00	44.00	46.00	46.88

Profile ALN-DWAY Profile From 0.000 To 46.883
Scales: (H) 1:200 (V) 1:200

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REV | DATE | REMARK

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PROJECT
RESIDENTIAL DEVELOPMENT
43A PIRIE STREET
NEW TOWN

TITLE
DRIVEWAY LONG SECTION
PLAN AND HEIGHT
ENVELOPES

Accepted GLA (Discipline Head)	Date
Accepted CJM (Team Leader)	Date
Approved MGC (Group Manager)	Date

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	CJM	HVL
1:200	PLOT DATE	12/03/2021

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PLOT DETAILS CIVIL3D BASE.DWG

PROJECT NO. J203140PH

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Approved - General Manager Consent Only GMC-21-23 15/04/2021

APPENDIX C

Site Catchment Flow Analysis

Approved - General Manager Consent Only
City of HOBART GMC-21-23 15/04/2021

Stormwater Calculations

IFD Table

Rainfall mm/hr							
Annual Exceedance Probability (AEP) mm/hr							
Duration (min)	63.20%	50%	20%	10%	5%	2%	1%
1	61.3	69.6	97.6	118	140	171	196
2	52.8	59.5	81.1	96.1	111	130	145
3	46.7	52.7	72.3	86.2	100	118	133
4	42.1	47.6	65.9	78.9	92.3	110	125
5	38.4	43.6	60.7	73.1	85.9	104	118
10	27.8	31.6	44.6	54.3	64.6	79.4	91.9
15	22.5	25.6	36.2	44.1	52.4	64.7	74.9
20	19.3	21.9	30.8	37.5	44.6	54.9	63.5
25	17	19.4	27.2	33	39.1	47.9	55.3
30	15.4	17.5	24.5	29.7	35.1	42.8	49.2
45	12.3	14	19.4	23.3	27.4	33	37.6
60	10.5	11.9	16.5	19.7	23	27.5	31.1
90	8.45	9.57	13.1	15.6	18.1	21.4	24
120	7.25	8.22	11.3	13.3	15.4	18.1	20.2
180	5.86	6.65	9.12	10.8	12.4	14.5	16
270	4.73	5.39	7.42	8.76	10.1	11.7	13
360	4.05	4.63	6.41	7.59	8.71	10.2	11.3
540	3.24	3.72	5.2	6.18	7.13	8.4	9.37
720	2.74	3.15	4.45	5.31	6.15	7.29	8.17
1080	2.13	2.46	3.51	4.23	4.93	5.9	6.66
1440	1.76	2.04	2.92	3.54	4.15	5	5.66
1800	1.5	1.74	2.51	3.05	3.59	4.34	4.93
2160	1.32	1.52	2.2	2.68	3.17	3.83	4.36
2880	1.06	1.22	1.77	2.16	2.55	3.09	3.53
4320	0.761	0.878	1.26	1.54	1.83	2.2	2.51
5760	0.598	0.688	0.983	1.19	1.41	1.69	1.92
7200	0.495	0.569	0.806	0.973	1.14	1.37	1.54
8640	0.425	0.487	0.685	0.823	0.96	1.14	1.29
10080	0.375	0.429	0.599	0.715	0.829	0.983	1.1

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City of HOBART GMC-21-27 15/04/2021

43A Pirie Residential Development

Stormwater Calculations

Flow Calculations Existing

Time of Concentration			
C_1,10	25	mm	10% AEP, 60min Rainfall
A=	1370	m2	Insert Catchment Area
A=	0.00137	Km^2	Calculated in Km2
S_e=	-	m/Km	Insert Catchment Grade
L=	-	Km	Insert Flow Length
t_c=	-	mins	Tc Calculated
	5	**mins**	Whole Number Tc

Impervious Area		
Existing Impervious Area=	1062.72	m2
Total Area =	1370	m2
Fraction Impervious =	78%	

Runoff Coefficient		
Fraction impervious =	78%	
C1,10 =	0.100	*Formula - Refer ARR Book VIII*
C10 =	**0.72**	**Runoff Coefficient**

Frequency Conversion Factors -Refer AR&R 1987										
ARI (years)	1	2	5	10	20	40	60	80	50	100
Factor, F_y	0.8	0.85	0.95	1	1.05	1.2	1.17	1.19	1.15	1.2

Peak Catchment Flows For Varied 5% AEP Storm Durations		
AEP	**Duration (min)**	**Flow (m^3/s)**
5%	5	0.025
5%	10	0.019
5%	15	0.015
5%	20	0.013
5%	25	0.011
5%	30	0.010
5%	45	0.008
5%	60	0.007

Peak Catchment Flows For Given AEP at T.O.C.		
AEP	**$I_{tc,Y}$ (mm/h)**	**Flow (m^3/s)**
63.20%	38.4	0.0084
50.00%	43.6	0.0102
20.00%	60.7	0.0158
10.00%	73.1	0.0201
5.00%	85.9	0.0248
2.00%	104.0	0.0328
1.00%	118.0	0.0389

Hardstand (100% Impervious)		
Roof	457.5	
Driveway	238.2	
Pavement (Paths)	162.5	
Impervious Area	**858.2**	m2

Landscaping (40% Impervious)		
Backyard	511	
Impervious Area	**204.52**	m2

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City of HOBART GMC-21-27 15/04/2021

43A Pirie Residential Development

Stormwater Calculations

Flow Calculations New

Time of Concentration			
C_1,10	25	mm	10% AEP, 60min Rainfall
A=	1370	m2	Insert Catchment Area
A=	0.00137	Km^2	Calculated in Km2
S_e=	-	m/Km	Insert Catchment Grade
L=	-	Km	Insert Flow Length
t_c=	-	mins	Tc Calculated
	5	**mins**	Whole Number Tc

Impervious Area		
New Impervious Area=	1013.16	m2
Total Area =	1370	m2
Fraction Impervious =	74%	

Runoff Coefficient		
Fraction impervious =	74%	
C1,10 =	0.100	*Formula - Refer ARR Book VIII*
C10 =	**0.69**	**Runoff Coefficient**

Frequency Conversion Factors -Refer AR&R 1987										
ARI (years)	1	2	5	10	20	40	60	80	50	100
Factor, F_y	0.8	0.85	0.95	1	1.05	1.2	1.17	1.19	1.15	1.2

Peak Catchment Flows For Varied 5% AEP Storm Durations		
AEP	**Duration (min)**	**Flow (m^3/s)**
5%	5	0.024
5%	10	0.018
5%	15	0.014
5%	20	0.012
5%	25	0.011
5%	30	0.010
5%	45	0.008
5%	60	0.006

Peak Catchment Flows For Given AEP at T.O.C.		
AEP	**$I_{tc,Y}$ (mm/h)**	**Flow (m^3/s)**
63.20%	38.4	0.0081
50.00%	43.6	0.0098
20.00%	60.7	0.0152
10.00%	73.1	0.0193
5.00%	85.9	0.0238
2.00%	104.0	0.0315
1.00%	118.0	0.0373

Hardstand (100% Impervious)		
Roof	492.8	
Driveway	282.8	
Carpark	0	
Impervious Area	**775.6**	m2

Landscaping (40% Impervious)		
Backyard	594	
Impervious Area	**237.56**	m2

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City of HOBART GMC-21-2[illegible]

43A Pirie Residential Development — Stormwater Calculations — Boyd's Formula

Catchment & Flow Details			Comments
Catchment Area =	0.14	Ha	
10 Year Runoff Coefficient =	0.72	-	
20 Year Effective Catchment Area =	0.10	Ha	
Restricted Outflow Requirement =	0.025	m3/s	Site Runoff: pre development 5% AEP, 13min (ToC) storm duration.

Detention Calculation							29% Climate Change			
Storm Duration	5% AEP	5% AEP + 29% CC	Ip	Qp	V1	Smax	Ip	Qp	V1	Smax
(min)	Intensity (mm/hr)	Intensity (mm/hr)	(m3/s)	(m3/s)	(m3)	(m3)	(m3/s)	(m3/s)	(m3)	(m3)
1	140.00	180.6	0.040	0.025	2.42	0.93	0.052	0.025	3.12	1.63
2	111.00	143.2	0.032	0.025	3.83	0.86	0.041	0.025	4.95	1.98
3	100.00	129.0	0.029	0.025	5.18	0.73	0.037	0.025	6.69	2.23
4	92.30	119.1	0.027	0.025	6.38	0.44	0.034	0.025	8.23	2.29
5	85.90	110.8	0.025	0.025	7.42	-0.01	0.032	0.025	9.57	2.15
10	64.60	83.3	0.019	0.025	11.16	-3.69	0.024	0.025	14.40	-0.46
15	52.40	67.6	0.015	0.025	13.58	-8.70	0.019	0.025	17.52	-4.76
20	44.60	57.5	0.013	0.025	15.41	-14.29	0.017	0.025	19.88	-9.82
25	39.10	50.4	0.011	0.025	16.89	-20.24	0.015	0.025	21.78	-15.34
30	35.10	45.3	0.010	0.025	18.19	-26.36	0.013	0.025	23.47	-21.09
45	27.40	35.3	0.008	0.025	21.30	-45.53	0.010	0.025	27.48	-39.35
60	23.00	29.7	0.007	0.025	23.84	-65.27	0.009	0.025	30.75	-58.35
90	18.10	23.3	0.005	0.025	28.14	-105.52	0.007	0.025	36.30	-97.36
120	15.40	19.9	0.004	0.025	31.92	-146.29	0.006	0.025	41.18	-137.03
180	12.40	16.0	0.004	0.025	38.56	-228.76	0.005	0.025	49.74	-217.58
270	10.10	13.0	0.003	0.025	47.11	-353.86	0.004	0.025	60.77	-340.20
360	8.71	11.2	0.003	0.025	54.17	-480.46	0.003	0.025	69.87	-464.76
540	7.13	9.2	0.002	0.025	66.51	-735.43	0.003	0.025	85.80	-716.15
720	6.15	7.9	0.002	0.025	76.49	-992.77	0.002	0.025	98.68	-970.59

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GMC-21-23 15/04/2021

APPENDIX D

Water and Sewer Demand Calculations

J203140PH Approved - General Manager Consent Only
City of HOBART GMC-21-23 15/04/2021

43A Pirie Residential Development

Sewer Design Flow Calcs

	WSA CALCULATIONS	:ULATED VA	UNITS	COMMENTS
DESIGN FLOW	PDWF + GWI + RDI	0.53334652	L/s	Design flow result

PDWF	d x ADWF	0.3988503	L/s	
	PDWF			
d	0.01*(LOG(A))^4-0.19*(LOG(A))^	12.7640265		
A	Gross Area of Development	0.137	Ha	Determine area (m2) off plans
	ADWF			
ADWF	0.001736*EP (150L/d/EP - as per	0.031248	L/s	
EP	3 x ET	18		TasWater overrides WSA
ET	Total Equivalent Tenements	6		TasWater Assumption (right)

GWI	0.025 x A x Portion(wet)	0.0023975	L/s	
$Portion_{wet}$	Portion of Network where GW > F	0.7		TasWater Assumption (5.5.5.2)

RDI	0.028 x Aeff x C x I	0.13209871	L/s	
A_{eff}	A x (Density/150)^0.5 OR A	0.12821856		Density >/< 150
Density	EP/A	131.386861		
C	Saspect + Naspect	1.4		
Saspect	Soil Aspect	0.8		TasWater Assumption
Naspect	Network Defects Aspect	0.6		TasWater Assumption
I	$I_{1,2}$ x $Factor_{size}$ x $Factor_{containment}$	26.282194		
I(1,2)	1 hr duration rainfall intensity, AR	13.2		Determined from BOM
Factor(size)	(40/A)^0.12	1.97624476		
Factor(containment)	0.77 x (10^(0.43X)) / (10^(0.14X^	1.00750441		
X	log(ARI)	0.30103		
ARI	Annual Recourence Interval	2		TasWater Assumption

Total ET	6

TasWater Supplement Appendix B

>2 Storeys, High Density, Dwelling				
	1 Bedroom	2 Bedroom	3+ Bedroom	
Factor/dwelling	0.5	0.75	1	
No. of Units	0	0	6	Sum
ET	0	0	6	6

J203140PH Approved - General Manager Consent Only
City of HOBART GMC-21-23 15/04/2021

43A Pirie Residential Development

Water Design Flow Estimations

Option 1)			
ET's < 100			
	Quantity	Units	Comments
Number of Units/Homes/Town Houses	4.02	-	
Probable Simultaneous Demand (PSD)	1.03	L/s	(AS/NZS 3500.1:2003 Table 3.2.3)

OR

Option 2)			
ET's >= 100			
	Quantity	Units	Comments
Average Day Demand (AD)	0	L/ET/day	As per 2.3.1 of TasWater Supplement
Average Water Demand (per day)	0	L/day	
Average Water Demand (per day)	0	kL/day	

Total ET	4.02

TasWater Supplement Equivalent Water Tenement Rates

>2 Storeys, High Density, Dwelling				
	1 Bedroom	2 Bedroom	3+ Bedroom	
Factor/dwelling	0.33	0.5	0.67	
No. of Units	0	0	6	Sum
ET	0	0	4.02	4.02

Johnstone McGee & Gandy Pty Ltd

ABN 76 473 834 852 ACN 009 547 139

www.jmg.net.au

HOBART OFFICE
117 Harrington Street
Hobart TAS 7000
Phone (03) 6231 2555
infohbt@jmg.net.au

LAUNCESTON OFFICE
49-51 Elizabeth Street
Launceston TAS 7250
Phone (03) 6334 5548
infoltn@jmg.net.au

Engineers & Planners

Submission to Planning Authority Notice

Council Planning Permit No.	PLN-21-200	**Council notice date**	1/04/2021
TasWater details			
TasWater Reference No.	TWDA 2021/00511-HCC	**Date of response**	13/04/2021
TasWater Contact	Phil Papps **Phone No.**	0474 931 272	
Response issued to			
Council name	CITY OF HOBART		
Contact details	coh@hobartcity.com.au		
Development details			
Address	43A PIRIE ST, NEW TOWN	**Property ID (PID)**	5682688
Description of development	Demolition and Multiple Dwellings x 6		

Schedule of drawings/documents

Prepared by	Drawing/document No.	Revision No.	Date of Issue
MinD Architects	Site Plan / DA02	1	12/03/2021

Conditions

Pursuant to the *Water and Sewerage Industry Act* 2008 (TAS) Section 56P(1) TasWater imposes the following conditions on the permit for this application:

CONNECTIONS, METERING & BACKFLOW

1. A suitably sized water supply with metered connections and 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 use of the development, any water connection utilised for the development must have a backflow prevention device and water meter installed, to the satisfaction of TasWater.

DEVELOPMENT ASSESSMENT FEES

4. The applicant or landowner as the case may be, must pay a development assessment fee of $351.28 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 http://www.taswater.com.au/Development/Development-Standards

For application forms please visit http://www.taswater.com.au/Development/Forms

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.

Boundary Trap Area

The proposed development is within a boundary trap area and the developer will need to provide a boundary trap to prevent noxious gases or persistent odours back venting into the property's sanitary drain. The boundary trap is to be be contained within the property boundaries and the property owner remains responsible for the ownership, operation and maintenance of the boundary trap.

Declaration

The drawings/documents and conditions stated above constitute TasWater's Submission to Planning Authority Notice.

Authorised by

Jason Taylor
Development Assessment Manager

TasWater Contact Details			
Phone	13 6992	Email	development@taswater.com.au
Mail	GPO Box 1393 Hobart TAS 7001	Web	www.taswater.com.au

PROPOSED 6 UNITS DEVELOPMENT

43A PIRIE STREET, NEW TOWN

ARCHITECTURAL & ENGINEERING DRAWING

DRAWINGS NO.	DRAWING NAME	REVISION
DA00	COVER	6
DA01	EXISTING & DEMOLITION PLAN	1
DA02	LEVEL GROUND	4
DA03	LEVEL1	5
DA04	LEVEL2	5
DA05	ELEVATIONS	5
DA06	ELEVATIONS	2
DA07	SHADOW DIAGRAMS	1
DA08	3D PERSPECTIVES AND MATERIALS	1

SITE INFORMATION	
TITLE REF	107319/1
PROPERTY ID	5682688
ZONING	INNER RESIDENTIAL
SITE AREA	1369 sq.m
DENSITY	6 / 1369 sq.m = 228 sq.m > 200 sq.m
SITE COVERAGE	581.715 sq.m / 1369sq.m = 42.49% <65%
LANDSCAPE AREA	328.656 sq.m / 1369sq.m = 24.01% >5%

UNIT 1 (TYPE A1)	
LEVEL GROUND	72.47 sq.m. (INC. EXTERNAL WALL)
LEVEL 1	70.04 sq.m. (INC. EXTERNAL WALL)
LEVEL 2	60.13sq.m. (INC. EXTERNAL WALL)
TOTAL	**202.64 sq.m. (INC. EXTERNAL WALL)**
POS ACCESSIBLE FROM LIVING :-	
LEVEL 1 BALCONY	20.0 sq.m.
LEVEL 2 BALCONY 1	8.0 sq.m.
TOTAL	**28.0 sq.m.**
LEVEL 2 BALCONY 2	6.0 sq.m.
TOTAL POS	**34.0 sq.m.**
UNIT 6 (TYPE A2)	
LEVEL GROUND	72.47 sq.m. (INC. EXTERNAL WALL)
LEVEL 1	70.04 sq.m. (INC. EXTERNAL WALL)
LEVEL 2	61.62 sq.m. (INC. EXTERNAL WALL)
TOTAL	**204.13 sq.m. (INC. EXTERNAL WALL)**
POS ACCESSIBLE FROM LIVING :-	
LEVEL 1 BALCONY	20.0 sq.m.
LEVEL 2 BALCONY 1	10.0 sq.m.
TOTAL	**30.0 sq.m.**
LEVEL 2 BALCONY 2	6.0 sq.m.
TOTAL POS	**36.0 sq.m.**
UNIT 2, 3, 4, 5 (TYPE B)	
LEVEL GROUND	72.07 sq.m. (INC. EXTERNAL WALL)
LEVEL 1	70.16 sq.m. (INC. EXTERNAL WALL)
LEVEL 2	61.14 sq.m. (INC. EXTERNAL WALL)
TOTAL	**203.30 sq.m. (INC. EXTERNAL WALL)**
POS ACCESSIBLE FROM LIVING :-	
LEVEL 1 BALCONY	20.0 sq.m.
LEVEL 2 BALCONY 1	10.0 sq.m.
TOTAL	**30.0 sq.m.**
LEVEL 2 BALCONY 2	5.0 sq.m.
TOTAL POS	**35.0 sq.m.**

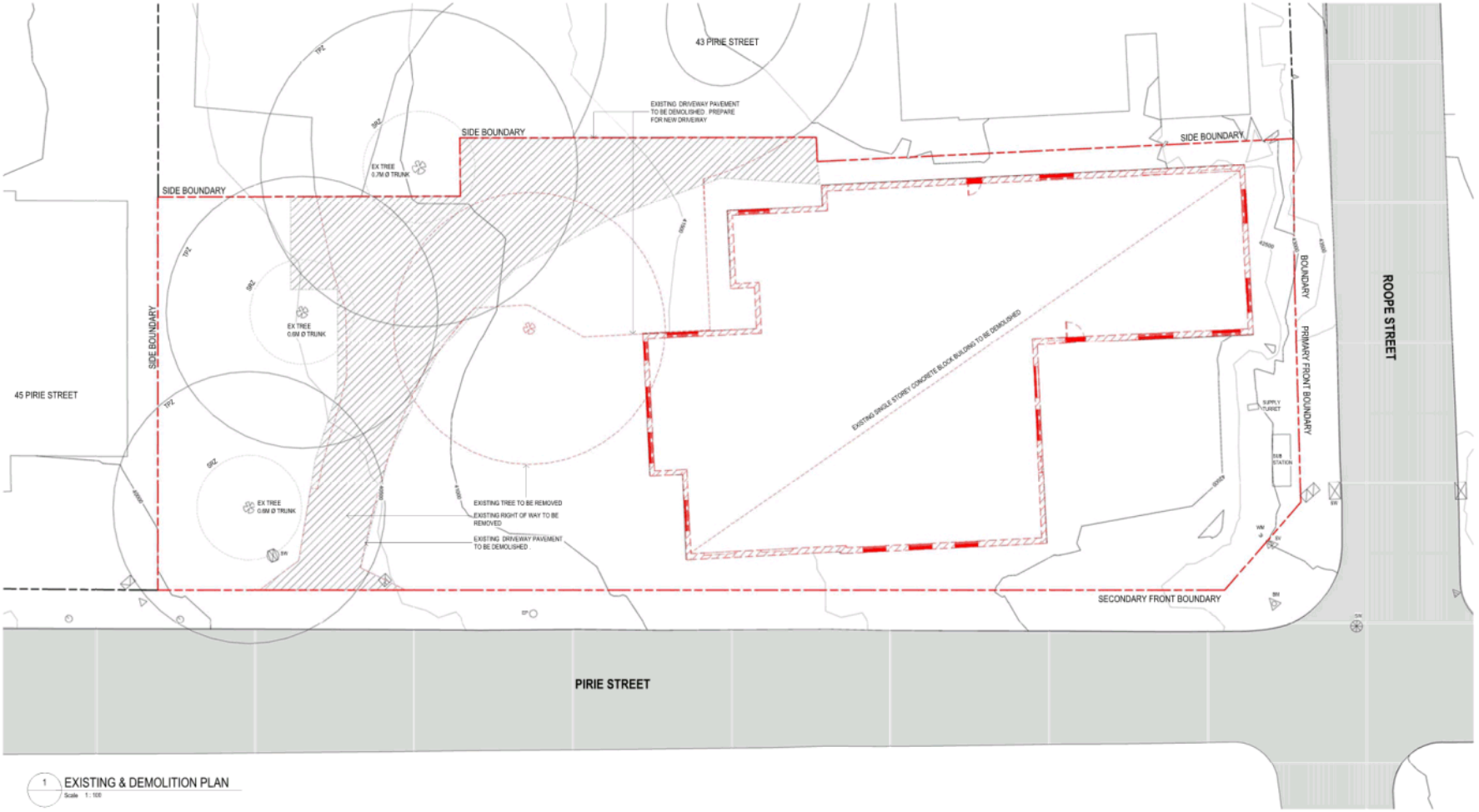
GARDEN AREA UNIT 1	53.46 sq.m.
GARDEN AREA UNIT 2	30.21 sq.m.
GARDEN AREA UNIT 3	53.88 sq.m.
GARDEN AREA UNIT 4	53.46 sq.m.
GARDEN AREA UNIT 5	30.21 sq.m.
GARDEN AREA UNIT 6	54.76 sq.m.

SITE CONTEXT PLAN

VIEW FROM PIRIE STREET. ARTISTS IMPRESSION. SUBJECT TO CHANGE

MinD. ARCHITECTS

REASON FOR ISSUE: DEVELOPMENT APPLICATION
PROJECT No.: 2056
PROJECT: PROPOSED 6 UNITS DEVELOPMENT
PROJECT ADDRESS: 43A PIRIE STREET, NEW TOWN
CLIENT: TAS DREAM
DRAWING TITLE: COVER
SCALE: 1 : 20 @ A1
PROJECT DATE: SEPT 2019
DRAWING No.: DA00
REVISION: 6



1 EXISTING & DEMOLITION PLAN
Scale 1 : 100

ISSUE	REVISION	DRN	CHK APP	DATE
	DEVELOPMENT APPLICATION			

MinD. ARCHITECTS

REASON FOR ISSUE: DEVELOPMENT APPLICATION
PROJECT No.: 2056
NORTH:
PROJECT: PROPOSED 6 UNITS DEVELOPMENT
PROJECT ADDRESS: 43A PIRIE STREET, NEW TOWN
CLIENT: TAS DREAM
DRAWING TITLE: EXISTING & DEMOLITION PLAN
SCALE: 1 : 100 @ A1
PROJECT DATE: SEPT 2019
DRAWING No.: DA01
REVISION: 1
PLOT DATE: 6/09/2021 1:37:37 PM

1 DA06 LEVEL GROUND
Scale 1 : 100

UNIT 1 & 6 (TYPE A)		
LEVEL GROUND -	72.47 SQ.M.	LEVEL 1 BALCONY - 9.0 SQ.M.
LEVEL 1 -	70.04 SQ.M.	LEVEL 2 BALCONY - 6.0 SQ.M.
LEVEL 2 -	61.62 SQ.M.	TOTAL - 15.0 SQ.M.
TOTAL -	204.13 SQ.M. (INC. EXTERNAL WALL)	

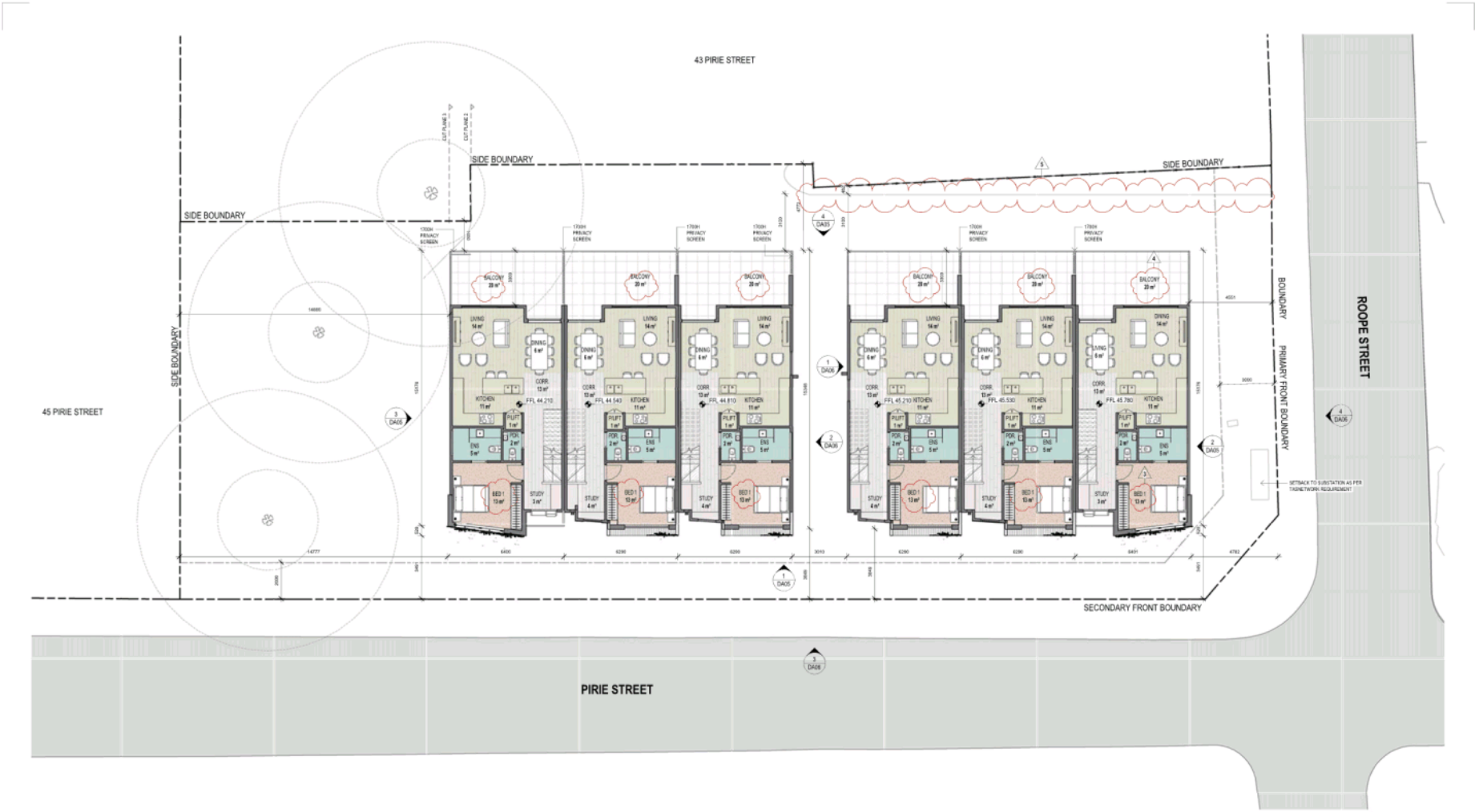
UNIT 2, 3, 4 & 5 (TYPE B)		
LEVEL GROUND -	72.97 SQ.M.	LEVEL 1 BALCONY - 9.0 SQ.M.
LEVEL 1 -	70.16 SQ.M.	LEVEL 2 BALCONY - 5.0 SQ.M.
LEVEL 2 -	61.14 SQ.M.	TOTAL - 14.0 SQ.M.
TOTAL -	203.39 SQ.M. (INC. EXTERNAL WALL)	

LEGEND:
EXISTING
NEW WORK
DEMOLITION
SBL SOLAR BOLLARD LIGHT IN ACCORDANCE WITH 6E.7.7-A1
POS ALL POS NOT STEEPER THAN 1:10
- ALL PARKING AREA MAX 5% FALL

ISSUE	REVISION	DRN	CHK	DATE
1	DEVELOPMENT APPLICATION	SA	TA	30/10/20
2	REVISED TO SW	SA	TA	04/12/20
3	PLAN UPDATE	SA	TA	15/06/21
4	PLAN UPDATE	SA	TA	24/06/21

MinD. ARCHITECTS
ARCHITECT: DAVID WALKER AO
PHONE: [redacted]
EMAIL: [redacted]
WEBSITE: [redacted]

REASON FOR ISSUE: DEVELOPMENT APPLICATION
PROJECT No.: 2056
NORTH
PROJECT: PROPOSED 6 UNITS DEVELOPMENT
PROJECT ADDRESS: 43A PIRIE STREET, NEW TOWN
CLIENT: TAS DREAM
DRAWING TITLE: LEVEL GROUND
SCALE: As indicated @ A1
PROJECT DATE: SEPT 2019
DRAWING No.: DA02
REVISION: 4
6/07/2021 1:37:28 PM



1 DA06 LEVEL 1
Scale 1 : 100

NOTE:

D 11.4.6

ALL PRIVACY SCREEN TO A HEIGHT OF AT LEAST 1.7M ABOVE THE FINISHED SURFACE OR FLOOR LEVEL, WITH A UNIFORM TRANSPARENCY OF NO MORE THAN 25%

UNIT 1 & 6 (TYPE A)

LEVEL GROUND -	72.47 SQ.M.	LEVEL 1 BALCONY -	9.0 SQ.M.
LEVEL 1 -	70.04 SQ.M.	LEVEL 2 BALCONY -	6.0 SQ.M.
LEVEL 2 -	61.62 SQ.M.	TOTAL -	15.0 SQ.M.
TOTAL -	204.13 SQ.M. (INC. EXTERNAL WALL)		

UNIT 2, 3, 4 & 5 (TYPE B)

LEVEL GROUND -	72.97 SQ.M.	LEVEL 1 BALCONY -	9.0 SQ.M.
LEVEL 1 -	70.16 SQ.M.	LEVEL 2 BALCONY -	5.0 SQ.M.
LEVEL 2 -	61.14 SQ.M.	TOTAL -	14.0 SQ.M.
TOTAL -	203.39 SQ.M. (INC. EXTERNAL WALL)		

LEGEND:
EXISTING
NEW WORK
DEMOLITION
SL SOLAR BOLLARD LIGHT IN ACCORDANCE WITH E6.7.7-A1
POS ALL POS NOT STEEPER THAN 1:10
- ALL PARKING AREA MAX 5% FALL

ISSUE	REVISION	DRN	CHK / APP	DATE
1	DEVELOPMENT APPLICATION	DA	DA	30/10/20
2	RFI 001 TO 006	DA	DA	04/12/20
3	PLAN UPDATE	DA	DA	14/04/21
4	PLAN UPDATE	DA	DA	24/04/21
5	PLAN UPDATE	DA	DA	24/05/21

MinD. ARCHITECTS

REASON FOR ISSUE: DEVELOPMENT APPLICATION
PROJECT No.: 2056
NORTH
PROJECT: PROPOSED 6 UNITS DEVELOPMENT
PROJECT ADDRESS: 43A PIRIE STREET, NEW TOWN
CLIENT: TAS DREAM
DRAWING TITLE: LEVEL1
SCALE: As indicated @ A1
PROJECT DATE: SEPT 2019
DRAWING No.: DA03
REVISION: 5
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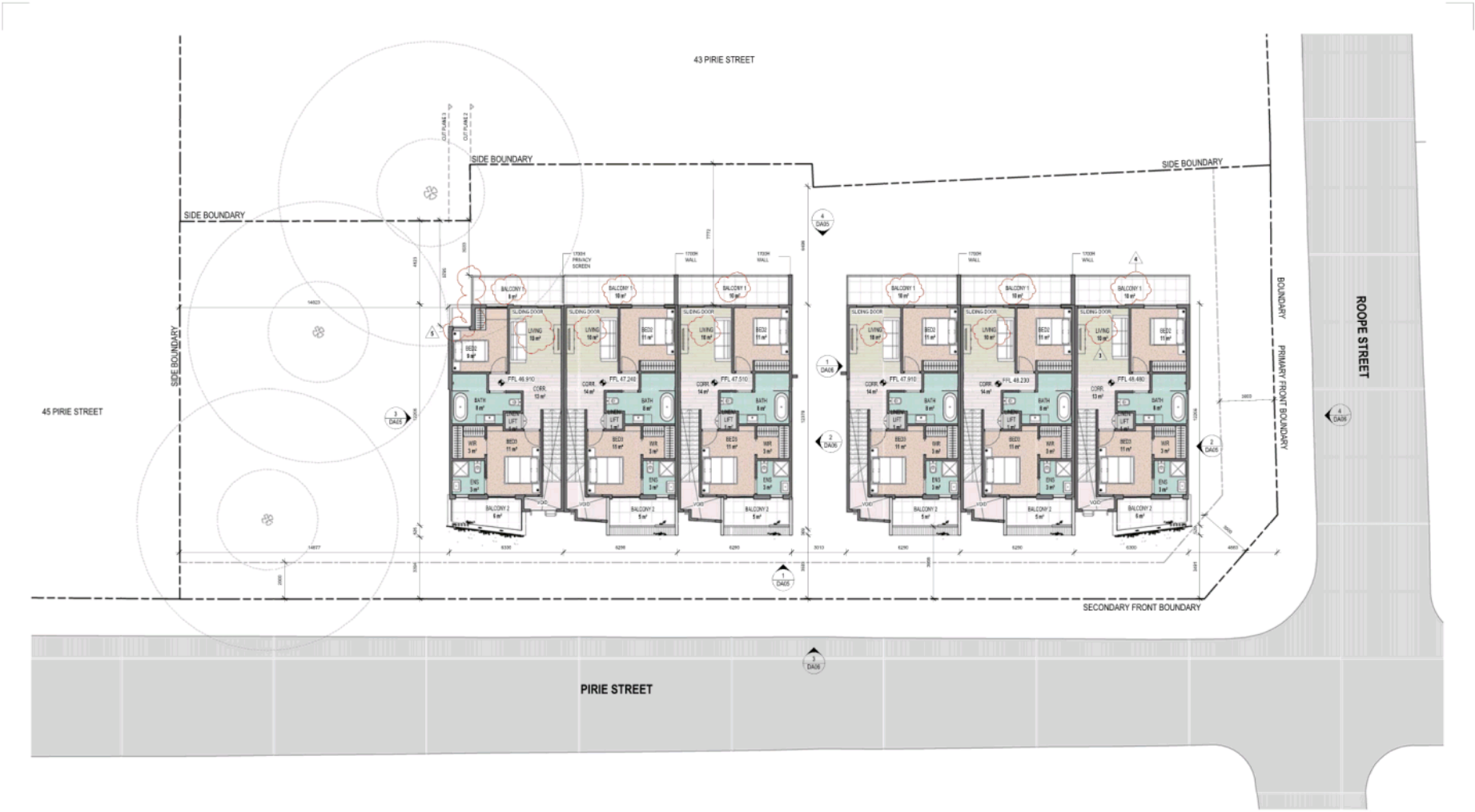


1 LEVEL 2
DA06 Scale 1 : 100

UNIT 1 & 6 (TYPE A)

LEVEL GROUND -	72.47 SQ.M.	LEVEL 1 BALCONY -	9.0 SQ.M.
LEVEL 1 -	70.04 SQ.M.	LEVEL 2 BALCONY -	6.0 SQ.M.
LEVEL 2 -	61.62 SQ.M.	**TOTAL -**	**15.0 SQ.M.**
TOTAL -	**204.13 SQ.M. (INC. EXTERNAL WALL)**		

UNIT 2, 3, 4 & 5 (TYPE B)

LEVEL GROUND -	72.97 SQ.M.	LEVEL 1 BALCONY -	9.0 SQ.M.
LEVEL 1 -	70.16 SQ.M.	LEVEL 2 BALCONY -	5.0 SQ.M.
LEVEL 2 -	61.14 SQ.M.	**TOTAL -**	**14.0 SQ.M.**
TOTAL -	**203.39 SQ.M. (INC. EXTERNAL WALL)**		

LEGEND:
- EXISTING
- NEW WORK
- DEMOLITION
- SBL SOLAR BOLLARD LIGHT IN ACCORDANCE WITH E6.7.7-A1
- POS ALL POS NOT STEEPER THAN 1:10
- ALL PARKING AREA MAX 5% FALL

ISSUE	REVISION	DRN	CHK / APP	DATE
1	DEVELOPMENT APPLICATION	SA	TA	30/10/20
2	RESPONSE TO RFI	SA	TA	04/12/20
3	PLAN UPDATE	SA	TA	15/06/21
4	PLAN UPDATE	SA	TA	23/06/21
5	PLAN UPDATE	SA	TA	25/06/21

MinD. ARCHITECTS

REASON FOR ISSUE: DEVELOPMENT APPLICATION
PROJECT No.: 2056
NORTH
PROJECT: PROPOSED 6 UNITS DEVELOPMENT
PROJECT ADDRESS: 43A PIRIE STREET, NEW TOWN
CLIENT: TAS DREAM
DRAWING TITLE: LEVEL2
SCALE: As indicated @ A1
PROJECT DATE: SEPT 2019
DRAWING No.: DA04
REVISION: 5

1 A13 SOUTH-WEST ELEVATION
Scale 1 : 100

2 A13 SOUTH-EAST ELEVATION 1
Scale 1 : 100

3 A13 NORTH-WEST ELEVATION 1
Scale 1 : 100

4 A13 NORTH-EAST ELEVATION
Scale 1 : 100

NOTE:

D 11.4.6

ALL PRIVACY SCREEN TO A HEIGHT OF AT LEAST 1.7M ABOVE THE FINISHED SURFACE OR FLOOR LEVEL, WITH A UNIFORM TRANSPARENCY OF NO MORE THAN 25%.

MATERIAL LEGEND:

FC1 - JAMESHARDIE 400 AXON
FC2 - JAMESHARDIE EASYLAP PANEL
FC3 - JAMESHARDIE STRIA
FC1 - JAMESHARDIE 133 AXON
TM1 - TIMBER LOOKED CLADDING
MC1 - STANDING SEAM METAL CLADDING
MC2 - STANDING SEAM METAL CLADDING
MC3 - LONGLINE METAL CLADDING
BR1 - FACE BRICK TYPE 1
BR2 - FACE BRICK TYPE 1

ISSUE	REVISION	DRN	CHK / APP	DATE
	DEVELOPMENT APPLICATION	SA	TA	30/10/20
2	RFI 001 TO SW	SA	TA	04/12/20
3	PLAN UPDATE	SA	TA	14/04/21
4	PLAN UPDATE	SA	TA	23/06/21
5	PLAN UPDATE	SA	TA	23/06/21

MinD. ARCHITECTS

REASON FOR ISSUE: DEVELOPMENT APPLICATION
PROJECT No.: 2056
PROJECT: PROPOSED 6 UNITS DEVELOPMENT
PROJECT ADDRESS: 43A PIRIE STREET, NEW TOWN
CLIENT: TAS DREAM
DRAWING TITLE: ELEVATIONS
SCALE: 1 : 100 @ A1
PROJECT DATE: SEPT 2019
DRAWING No.: DA05
REVISION: 5

1 A13 NORTH-WEST ELEVATION 2
Scale 1 : 100

2 A13 SOUTH-EAST ELEVATION 2
Scale 1 : 100

3 A13 FRONT FENCE ELEVATION - SOUTH-WEST
Scale 1 : 100

4 A13 FRONT FENCE ELEVATION - SOUTH-EAST
Scale 1 : 100

NOTE:

D 11.4.6

ALL PRIVACY SCREEN TO A HEIGHT OF AT LEAST 1.7M ABOVE THE FINISHED SURFACE OR FLOOR LEVEL, WITH A UNIFORM TRANSPARENCY OF NO MORE THAN 25%

MATERIAL LEGEND:

FC1 - JAMESHARDIE 400 AXON	**MC1** - STANDING SEAM METAL CLADDING
FC2 - JAMESHARDIE EASYLAP PANEL	**MC2** - STANDING SEAM METAL CLADDING
FC3 - JAMESHARDIE STRIA	**MC3** - LONGLINE METAL CLADDING
FC1 - JAMESHARDIE 133 AXON	**BR1** - FACE BRICK TYPE 1
TM1 - TIMBER LOOKED CLADDING	**BR2** - FACE BRICK TYPE 1

ISSUE	REVISION	DRN	CHK	DATE
1	DEVELOPMENT APPLICATION RESPONSE TO RFI	DA	DA	30/06/21

MinD. ARCHITECTS

REASON FOR ISSUE: DEVELOPMENT APPLICATION

PROJECT No.: 2056

PROJECT: PROPOSED 6 UNITS DEVELOPMENT

PROJECT ADDRESS: 43A PIRIE STREET, NEW TOWN

CLIENT: TAS DREAM

DRAWING TITLE: ELEVATIONS

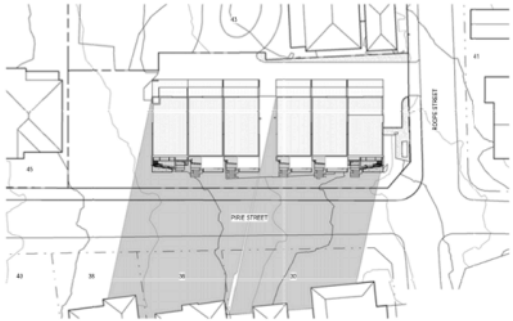
SCALE: 1 : 100 @ A1

PROJECT DATE: SEPT 2019

DRAWING No.: DA06

REVISION: 2

6/07/2021 1:39:44 PM



1 SITE_SHADOW DIAGRAM_0900AM
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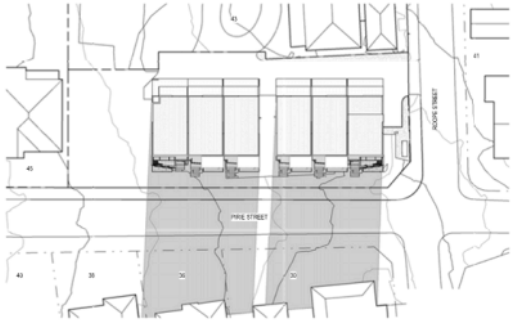

2 SITE_SHADOW DIAGRAM_1000AM
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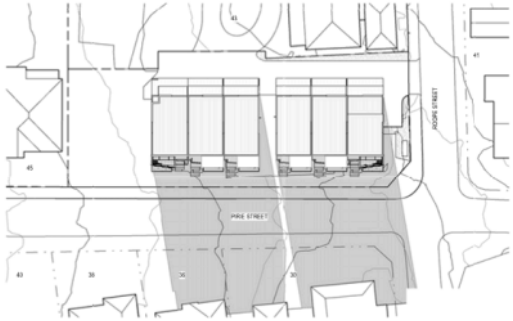
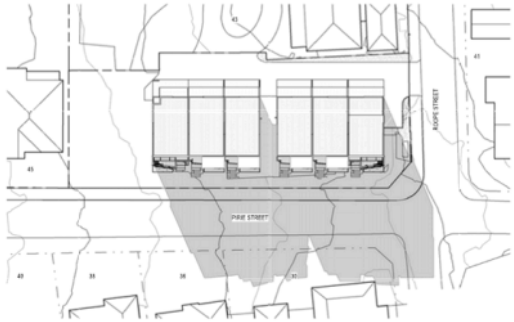
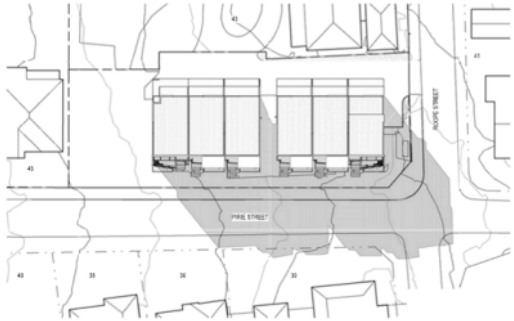


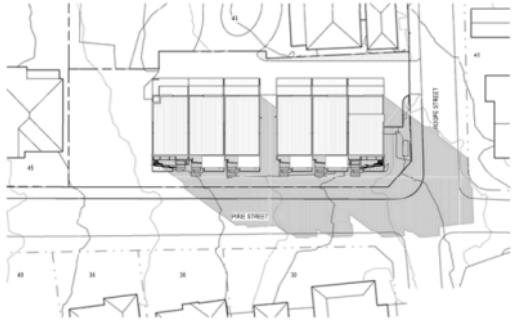
3 SITE_SHADOW DIAGRAM_1100AM
Scale 1 : 400



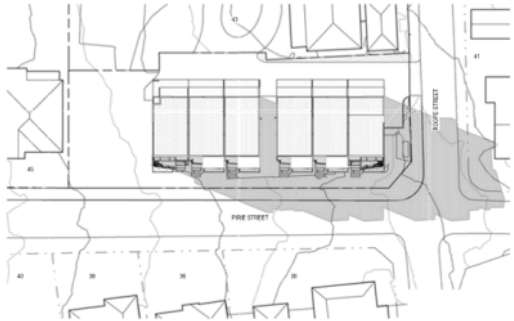
4 SITE_SHADOW DIAGRAM_1200PM
Scale 1 : 400



5 SITE_SHADOW DIAGRAM_0100PM
Scale 1 : 400



6 SITE_SHADOW DIAGRAM_0200PM
Scale 1 : 400



7 SITE_SHADOW DIAGRAM_0300PM
Scale 1 : 400

ISSUE	REVISION	DRN	CHK APP	DATE
	DEVELOPMENT APPLICATION	DK	JP	6/05/20

MinD. ARCHITECTS

REASON FOR ISSUE
DEVELOPMENT APPLICATION

PROJECT No.: 2056

NORTH

PROJECT:
PROPOSED 6 UNITS DEVELOPMENT

PROJECT ADDRESS:
43A PIRIE STREET, NEW TOWN

CLIENT:
TAS DREAM

DRAWING TITLE:
SHADOW DIAGRAMS

SCALE: 1 : 400 @ A1

PROJECT DATE: SEPT 2019

DRAWING No.: DA07

REVISION: 1

6/05/2021 1:40:45 PM

METAL CLADDING
-VARIOUS PROFILES & COLOURS

METAL CLADDING
-VARIOUS PROFILES & COLOURS

TIMBER LOOKED CLADDING
-VARIOUS SHADES

TIMBER LOOKED CLADDING
-VARIOUS SHADES

FACE BRICK
-VARIOUS TYPES

FEATURE TIMBER SCREENING

FIBRE CEMENT CLADDING
-VARIOUS PROFILES & COLOURS

ALUMINIUM SLAT FENCING

VIEW FROM CORNER OF ROOPE STREET. ARTISTS IMPRESSION. MATERIAL SUBJECT TO FINAL SELECTION.

VIEW FROM CORNER OF PIRIE STREET. ARTISTS IMPRESSION. MATERIAL SUBJECT TO FINAL SELECTION.

VIEW FROM CORNER OF PIRIE STREET. ARTISTS IMPRESSION. MATERIAL SUBJECT TO FINAL SELECTION.

REV	REVISION	DRN	CHK	DATE
	DEVELOPMENT APPLICATION			

21 JUNE

MinD. ARCHITECTS

REASON FOR ISSUE
DEVELOPMENT APPLICATION

PROJECT No.:
2056

PROJECT:
PROPOSED 6 UNITS DEVELOPMENT

PROJECT ADDRESS:
43A PIRIE STREET, NEW TOWN

CLIENT:
TAS DREAM

DRAWING TITLE:
3D PERSPECTIVES AND MATERIALS

SCALE:
@ A1

PROJECT DATE:
SEPT 2019

DRAWING No.:
DA08

REVISION
1

Application Referral Cultural Heritage - Response

From:	Allie Costin
Recommendation:	Proposal is acceptable subject to conditions.
Date Completed:	
Address:	43 A PIRIE STREET, NEW TOWN 43 PIRIE STREET, NEW TOWN ADJACENT ROAD RESERVE
Proposal:	Demolition, Six Multiple Dwellings, Front Fencing, and Associated Works
Application No:	PLN-21-200
Assessment Officer:	Victoria Maxwell,

Referral Officer comments:

Background:
Number 43 Pirie Street known as Flint House was built by Robert Nichol, cashier and teller at the Commercial Bank, in around 1850. The property is a large sandstone, Georgian house (painted) with a hipped roof, twelve pane windows and central front door with fanlight and side lights. It has later verandahs added at both levels, and glazed in. There is a semi-circular bay with full length windows on north eastern end. The brick addition at rear is not significant.

The Tasmanian Government purchased Flint House and converted it into the State's first Mothercraft Home in the 1920s. The building was subsequently extended to provide additional accommodation.

The Flint House estate is set over three lots 43A, 43 on which Flint House sits, and a smaller lot to the north east also known as 43. 43A contains established trees and plantings associated with Flint House, and an early right of way that leads to a landscaped turning circle directly centered with the front entrance to Flint House.

It must be noted that number 43 Pirie Street (title number 199999/1) is the only heritage listed land parcel, 43A is not a listed place in the Table E13.1 of The Heritage Code of HIPS 2015, and neither 43A or 43 are located within a Heritage Precinct. As such the heritage assessment under the planning scheme is limited to small portions of the proposal which fall within the boundary of 43 Pirie Street.

Assessment will include a small portion of front fencing along Roope Street, a new right of way accessed from Roope Street between 43A and 43, and an English Oak tree referred to as T4 in the provided arborists report that sits on the boundary of 43A and 43 Pirie Street.

Representation summaries:
There were 10 representations received during the advertising period – one in support of the proposal and 9 against. A number of representations cited heritage concerns these have been summarized below.

- Consideration must be taken for the fact that this site will provide vehicle access not only to the proposed multiple dwellings but also the heritage property known as "Flint House". The application it must at least be bound to consider the heritage controls that apply to Flint House.
- The illustrations of the proposal show a lack of sympathy/compatibility with the area & existing

buildings, some heritage listed. The contrast is incongruous and grating.
- I am extremely concerned with the height and size of the proposed building, it should be set back and sloped downwards to look less overpowering and more sympathetic to the historic area.
- New Town is rich in heritage. While we are in full support of appropriate development, these three story high town houses are not at all in keeping with the aesthetics of its streets and homes, many of which are federation and heritage listed. The new proposed driveway will be within meters of one of Hobarts oldest heritage listed sites and something that should be acknowledged and praised, not overshadowed by a three story development.
- New Town is a suburb of historic and cultural significance, and that Pirie Street, dating back to 1804, is recognised as the oldest street in Hobart. There is a range of dwelling types in New Town, many of which are listed on the Tasmanian Heritage Register, but they are typically colonial houses (many of which are stately homes), or single storey, stand-alone brick houses built in the 1920s and 1930s, with sizeable gardens at the front and back of the premises. There are very few, if any, terraced houses.
- With the increased appreciation of the unique historic and cultural value of our heritage, there is a corresponding realisation in the community that heritage buildings and heritage neighbourhoods should be safeguarded and managed as important heritage sites for future Tasmanians.
- The use of "standing seam and longline metal cladding, James Hardie easylap panel and timber look cladding, will give a modern appearance that will not easily fit into the heritage streetscape.

Discussion:
Representors raised valid concerns in relation to the impact the proposed development will have upon Flint House and the surrounding streetscape. It is anticipated that the proposal will impact Flint House and its surrounding heritage setting, however the heritage assessment must be undertaken in regards to the provisions of the planning scheme, which in this instance are limited.

Assessment applies to:
- The proposed new right of way accessed from Roope Street between 43A and 43 Pirie Street.
- The proposed works in close proximity to an English Oak tree referred to as T4.
- A small portion of front fencing along Roope Street frontage of 43 Pirie proposed to be 1.5m high with 30% transparency.

Assessment:

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.

Demolition includes the removal of existing paling fence where the proposed new right of way is to be located, small areas of landscaping to be removed to allow for the surfacing of the proposed new right of way. The elements proposed for demolition are not considered significant heritage fabric or items, and the demolition component of the proposal will not result in a loss of significance to 43 Pirie Street. Performance Criteria 1 of E13.7.1 is considered satisfied.

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 provided drawings specify the proposed right of way is to be of a concrete construction, a permit condition has been applied for an exposed aggregate concrete finish, with a cream / sandstone colour finish. This condition is to ensure that the new right of way will not result in detriment to Flint House, the specified finishes in the attached condition are seen as complementary and compatible with the significant heritage features and characteristics of Flint House.

The landscaped turning circle associated with the entrance to Flint House is considered significant and must be retained. Drawing number DA02 (see fig.1) shows the proposed new driveway implementing the turning circle curve into the design, this must be achieved at construction stage in order to retain the turning circle's importance to the listed site. A condition of permit has been applied in relation to this.

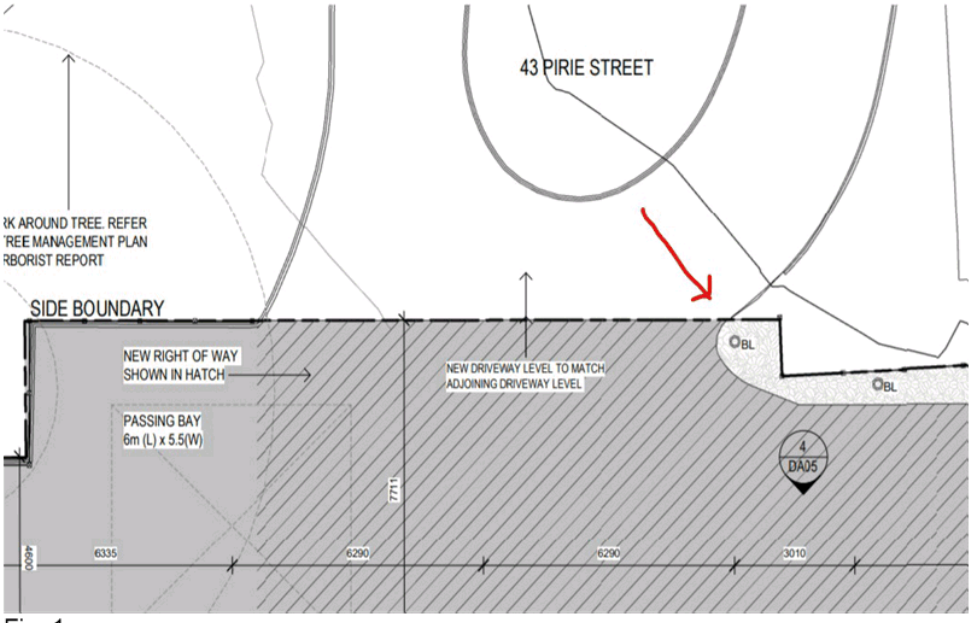


Fig. 1.

In regards to the establish English Oak (T4) that is estimated to be 60+ years in age, the arborist's tree protection plan must be implemented and adhered to during the construction of the driveway and townhouses. A condition of permit has been applied to ensure the retention of the tree.

Subject to the conditions discussed above the proposed works are considered to satisfy Performance Criteria 1 of E13.7.2.

Performance Criteria 5
New front fences and gates must be sympathetic in design, (including height, form, scale and materials), to the style, period and characteristics of the building to which they belong.

There is a small amount of front fencing proposed within the boundary of 43 Pirie Street, the fencing is considered appropriate in scale and style and will not result in detriment the listed property Flint House. Performance Criteria 5 of E13.7.2 is considered satisfied.

In conclusion the proposed works are considered acceptable when assessed against the relevant provisions of the Historic Heritage Code E.13 of HIPS 2015.

Allie Costin
11th of June 2021

7.1.2 40-50 MOLLE STREET, HOBART AND ADJACENT ROAD RESERVE - ROADWORKS INCLUDING TRAFFIC SIGNALS AND SUBDIVISION PLN-21-375 - FILE REF: F21/73299

Address:	40-50 Molle Street, Hobart and Adjacent Road Reserve
Proposal:	Roadworks including Traffic Signals and Subdivision
Expiry Date:	25 August 2021
Extension of Time:	Not Applicable
Author:	Deanne Lang

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 traffic signals and subdivision at 40-50 Molle Street, Hobart 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-21-375 - 40-50 MOLLE STREET 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 2021/00927-HCC dated 18 June 2021 as attached to the permit.

Reason for condition

To clarify the scope of the permit.

ENG sw3

The proposed traffic light footings must be designed to ensure the protection and access to the Council's stormwater main.

A detailed design must be submitted and approved as a Condition Endorsement prior to the issuing of any approval under the *Building Act 2016* or commencement of works (whichever occurs first). The detailed design must:

1. Demonstrate how the design will ensure the protection and provide access to the Council's stormwater main.

All work required by this condition must be undertaken in accordance with the approved detailed 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 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 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, along with photos of any existing drainage structures connected to or modified as part of the development, 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 post-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 post-construction condition assessment then any damage to the Hobart City Council's infrastructure identified in the postconstruction CCTV will be deemed to be the responsibility of the owner/developer.

SW 6

The new and amended stormwater infrastructure must be designed and constructed prior to completion or commencement of the approved use (whichever occurs first).

Prior to the issuing of any approval under the *Building Act 2016* or commencement of works (whichever occurs first), detailed engineering drawings must be submitted and approved as a Condition Endorsement. The detailed engineering drawings must be certified by a suitably qualified and experienced civil engineer and must:

1. be substantially in accordance with the Local Government Association of Tasmania: Tasmanian Municipal Standard Drawings (May 2020), as varied by the City of Hobart's published departures from those Drawings, and the Local Government Association of Tasmania, Tasmanian Subdivision Guidelines (October 2013);
2. clearly distinguish between public and private infrastructure;
3. show in both plan and long-section the proposed stormwater mains, including but not limited to, connections, flows, velocities, hydraulic grade lines, clearances, cover, gradients, sizing, material, pipe class, and inspection openings (lids and benching);
4. include the associated calculations and catchment area plans. The stormwater system (including defined overland flow paths) must cater for all 1% AEP event flows as at 2100 (i.e including climate change loading) from a fully developed catchment. The main itself must be sized to accommodate at least the 5% AEP event flows from a fully- developed catchment;
5. include cross-sections demonstrating structural independence of the proposed traffic signal footings from Council's stormwater infrastructure and detailing the minimum clearances.

A structural condition assessment and visual record of new or altered public infrastructure must be submitted prior to issue of practical completion.

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

SW 15

Stormwater drainage for both the Balance Lot CT 47718/1 and the future Road (Lot 1 from CT47718/1 and the dedicated land) must be designed and installed to meet the needs of current and future development, prior to the sealing of the final plan or commencement of the use (whichever occurs first).

Detailed engineering drawings 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 drawings must be certified by a suitably qualified and experienced engineer and must:

1. be generally in accordance with Local Government Association of Tasmania: Tasmanian Municipal Standard Drawings (May 2020), as varied by the City of Hobart published departures from those drawings, and Tasmanian Subdivision Guidelines (October 2013);
2. clearly distinguish between public and private infrastructure; and existing and proposed (including works installed as private to be taken over as public assets);
3. show the location of all existing connections and private services passing through the future Road;
4. show the final lot boundaries, with the Balance lot serviced separately by Council infrastructure; and all private plumbing and surface flows from the Balance Lot not intruding into the future Road;
5. show the proposed location, levels and size of each lot connection such that the majority of the lot can be adequately drained via gravity;
6. include supporting calculations for the stormwater works demonstrating flows from the 5% AEP will be adequately captured and directed to public infrastructure, and a defined 1% AEP overland flow path.
7. show in plan and long-section the proposed public stormwater

infrastructure (including existing private to be taken over), including but not limited to, delineation of public vs private, clearances from structures and other services, grate/lid details (eg class, heel-safe), cover, grade, sizing, material, pipe class, and inspection openings;

A structural condition assessment and visual record of new or altered public infrastructure must be submitted prior to issue of practical completion or sealing of the final plan (whichever occurs first).

All work required by this condition must be constructed in accordance with the approved engineering drawings. All services must be installed prior to the sealing of the final 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. Kerbing or alternate adequately sized surface runoff collection within the Balance Lot above the proposed Lot boundary, directed to a new Lot connection to the public stormwater mains via a private pit is required. A clear delineation of private vs public trench grate (should Council take over part) will also be required.

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 2

Sediment and erosion control measures, 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.

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.

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.

HER 6

Should any features or deposits of an archaeological nature be discovered on the site during excavation or disturbance:

1. All excavation and/or disturbance must stop immediately; and

2. A qualified archaeologist must be engaged to attend the site and provide advice and assessment of the features and/or deposits discovered and make recommendations on further excavation and/or disturbance; and
3. All and any recommendations made by the archaeologist engaged in accordance with (2) above must be complied with in full; and
4. All features and/or deposits discovered must be reported to the Council with 1 day of the discovery; and
5. A copy of the archaeologists advice, assessment and recommendations obtained in accordance with paragraph (2) above must be provided to Council within 60 days of receipt of the advice, assessment and recommendations.

Excavation and/or disturbance must not recommence unless and until approval is granted from the Council.

Reason for condition

To ensure that work is planned and implemented in a manner that seeks to understand, retain, protect, preserve and manage significant archaeological evidence.

ENVHE 1

Recommendations in the report *GES - Environmental Site Assessment - Intersection of Collins and Molle Streets, Hobart February 2021* must be implemented for the duration of the development.

Specifically:

- A Soil and Water Management Plan (SWMP) should be put in place to account for the management and erosion of soil with potential ecological impacts,
- Due to variable and elevated levels of heavy metals and hydrocarbons - any excavated material must be stockpiled and resampled for offsite disposal in accordance with IB105 and the controlled waste regulations,
- Material excavated from hole ‘H1’ should be segregated due to the elevated levels of benzo(a)pyrene observed in that vicinity.

Reason for condition:

To ensure that the risk to workers and the environment remains low and acceptable, and to comply with Contaminated sites requirements.

OPS s1

The Hobart Rivulet Park entrance sign is to be erected in a location that meets the satisfaction of the Director City Amenity.

Reason for condition

To ensure the Hobart Rivulet Park sign is installed in a location that satisfies design, safety and user functionality.

OPS s2

Landscaping and garden beds are to be installed to the satisfaction of the
Director City Amenity.

Reason for condition

To maintain the amenity of the City's streetscapes, parks and gardens.

SURV 1

The applicant must submit to the Council a copy of the surveyor’s survey notes at the time of lodging the final plan.

Reason for condition

To enable the Council to accurately update cadastral layers on the corporate Geographic Information System.

SURV 2

The final plan and schedule of easements must be submitted and approved in accordance with section 89 of the *Local Government (Building & Miscellaneous Provisions) Act 1993*.

Reason for condition

To ensure that the subdivision/boundary adjustment is carried out in accordance with the Council's requirements under the provisions of Part 3 of the *Local Government (Building & Miscellaneous Provisions) Act 1993*.

SURV 5

The proposed Road lot is to be transferred in fee simple to the Council at nominal consideration.

Prior to the sealing of the final plan an executed and stamp duty assessed Land Titles Office transfer instrument is to be forwarded to the Council together with a cheque made payable to the Land Titles Office for the associated Land Titles Office registration fees.

Reason for condition

To ensure that the title to the proposed road lot issues in the Council.

Advice: Lot 1 should be notated as Road on the final plan of survey and the balance of CT 47718/1 should be shown on a Plan of Title Balance Plan.

ENG 16

Prior to the sealing of the final plan, private sewer, stormwater (including surface drainage) and water services/connections are to be entirely separate to each lot and contained wholly within the lots served.

Reason for condition

To ensure that each lot is services separately.

ENG 17

Prior to the sealing of the final plan, the developer must verify compliance with condition ENG 16 by supplying the Council with an as-installed services plan clearly indicating the location and details of all relevant services (entirely contained within their respective lots or appropriate easements). The as- installed services plan must be accompanied by certification from a suitably qualified person that all engineering work required by this permit has been completed.

Advice:

Any final plan submitted for sealing will not be processed unless it is accompanied by documentation by a suitably qualified person that clearly certifies that this condition has been satisfied and that all the work required by this condition has been completed. A 'suitably qualified person' must be a professional engineer or professional surveyor or other persons acceptable to Council.

Reason for condition

To ensure that the developer provides the Council with clear written confirmation that the separation of services is complete.

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.

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.

PERMIT TO CONSTRUCT PUBLIC INFRASTRUCTURE

You may require a permit to construct public infrastructure, with a 12 month maintenance period and bond (please contact the Hobart City Council's City Amenity Division to initiate the permit process).

NEW SERVICE CONNECTION

Please contact the Hobart City Council's City Amenity 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.

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.

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-21-375 - 40-50 MOLLE STREET HOBART TAS 7000 - Planning Committee or Delegated Report ⇩
Attachment B:	PLN-21-375 - 40-50 MOLLE STREET HOBART TAS 7000 - CPC Agenda Documents ⇩

Attachment C: PLN-21-375 - 40-50 MOLLE STREET HOBART TAS 7000 -Planning Referral Officer Environment Health Report ⇩

Attachment D: PLN-21-375 - 40-50 MOLLE STREET HOBART TAS 7000 - CPC Supporting Documents ⇩

City of HOBART

APPLICATION UNDER HOBART INTERIM PLANNING SCHEME 2015

Type of Report:	Committee
Committee:	2 August 2021
Expiry Date:	25 August 2021
Application No:	PLN-21-375
Address:	40 - 50 MOLLE STREET , HOBART ADJACENT ROAD RESERVE
Applicant:	STUART BAIRD 16 ELIZABETH STREET
Proposal:	Roadworks including Traffic Signals, and Subdivision
Representations:	Nil
Performance criteria:	Urban Mixed Use Zone Subdivision Standards, Potentially Contaminated Land Code, Roads and Railway Assets Code, Parking and Access Code, Historic Heritage Code

1. Executive Summary

1.1 Planning approval is sought for Roadworks including Traffic Signals and Subdivision at 40-50 Molle Street, Hobart and Adjacent Road Reserve

1.2 More specifically the proposal includes:

- upgrading of the junction of Collins and Molle Streets including the installation of traffic signals, associated pits and conduits for electrical and communications cabling;
- demolition of existing kerb and gutter and construction of new guttering and kerb bulbing extensions to support pedestrian crosspoints;
- works within the road reservation including new stormwater pits and traffic/parking regulatory signage;
- street planting in minor garden beds;
- subdivision of 50 Molle Street to allow for the creation of the access point associated with the junction signals. The subdivision will create a lot of 136sqm in area which will be dedicated as road pursuant to *Section 6 of the Local Government (Highways) Act 1982*. A further area of 64sqm of an untitled right of way between number 40-44 and 50 Molle Street will be dedicated as road;
- the proposed subdivision will result in 40-50 Molle Street having a new title area of 2469sqm. This property will continue being used for vehicle parking.
- removal and replacement of existing traffic signage and relocation of the existing Rivulet Track sign to another location on the site.

D15.0 Urban Mixed Use Zone - Subdivision standards

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

1.3.1
1.3.2 E2.0 Potentially Contaminated Land Code - Excavation and Subdivision
1.3.3 E5.0 Roads and Railway Assets Code - Sight distances
1.3.4 E6.0 Parking and Access Code - Design of vehicular accesses
1.3.5 E13.0 Historic Heritage Code - Heritage Precinct and Place of Archaeological Potential

1.4 No representations were received during the statutory advertising period between 23 June - 7 July 2021.

1.5 The proposal is recommended for approval subject to conditions.

1.6 The final decision is delegated to the City Planning Committee, because Council is the applicant and some of the works are within the Council's road reservation.

2. Site Detail

2.1 The subject site includes 40-50 Molle Street, which contains a private carpark. The remaining works are located in Council's Road Reservation adjacent to the junction of Molle and Collins Street.

The site is located on the cusp of Hobart's Central Business District and includes residential, commercial and educational establishments in close proximity.

Council's Rivulet Park is located directly behind 40-50 Molle Street.

Fig. 1 - the area of Council's road reservation affected by the proposed road/traffic works is bordered in red. The property at 40-50 Molle Street is bordered in blue.

Fig. 2 - the subdivision and works, including the traffic lights are proposed to be located adjacent to the entrance to Hobart's Rivulet Park and the adjoining carpark - image obtained via Google streetview

3. Proposal

3.1 Planning approval is sought for Traffic Signals and Subdivision at 40-50 Molle Street, Hobart and Adjacent Road Reserve.

3.2 More specifically the proposal is for:

- upgrading of the junction of Collins and Molle Streets including the installation of traffic signals, associated pits and conduits for electrical and communications cabling;
- demolition of existing kerb and gutter and construction of new guttering and kerb bulbing extensions to support pedestrian crosspoints;
- works within the road reservation including new stormwater pits and traffic/parking regulatory signage;
- street planting in minor garden beds;
- subdivision of 50 Molle Street to allow for the creation of the access point associated with the junction signals. The subdivision will create a lot of 136sqm in area which will be will be dedicated as road pursuant to Section 6 of the Local Government (Highways) Act 1982. A further area of 64sqm of an untitled right of way between number 40-44 and 50 Molle Street will be dedicated as road; and
- the proposed subdivision will result in 40-50 Molle Street having a new title area of 2469sqm. This property will continue being used for vehicle parking; and
- removal and replacement of existing traffic signage and relocation of the existing Rivulet Track sign upon the site.

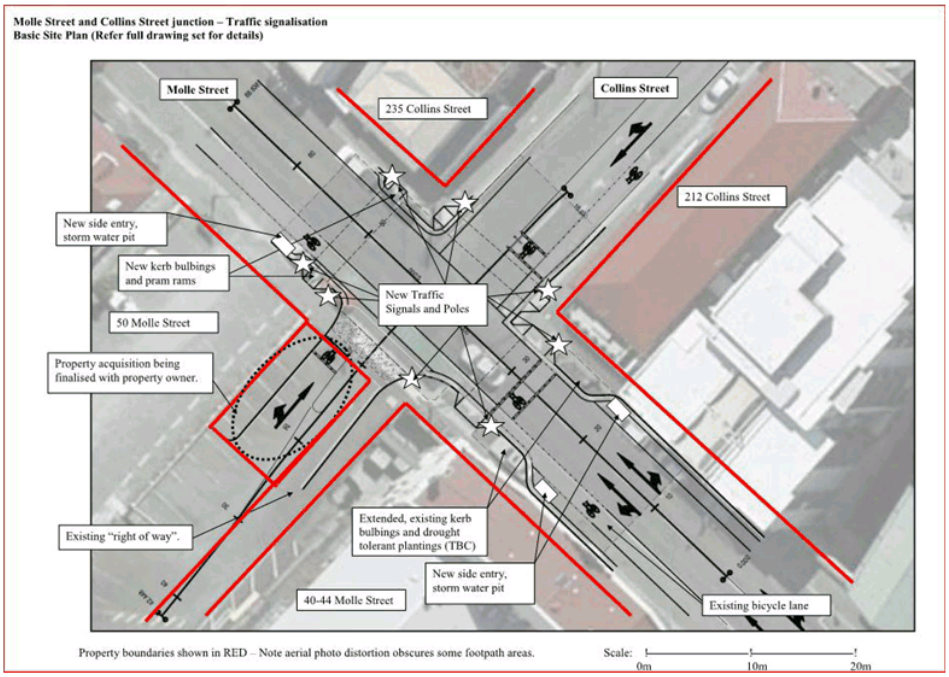


Fig. 3- proposed traffic works

Signs

The signs and linemarking plan calls up new signage for the intersection.

- No Right turn signs: R2—6-AS

- Size: 450 x 450 mm

- One Way signs: R2-2

- Size 450 x 600

- Parking control signage (Time restrictions Eg. (R5-2) and No Parking (R5-41))

- Size 225 x 450

3. Signage provided will be static regulatory signage.

   Traffic signals will be lit (illuminated) in the standard sequence of Green, Amber, and Red. Pedestrian signals will be in the standard Red and Green.

Fig. 4- proposed signage

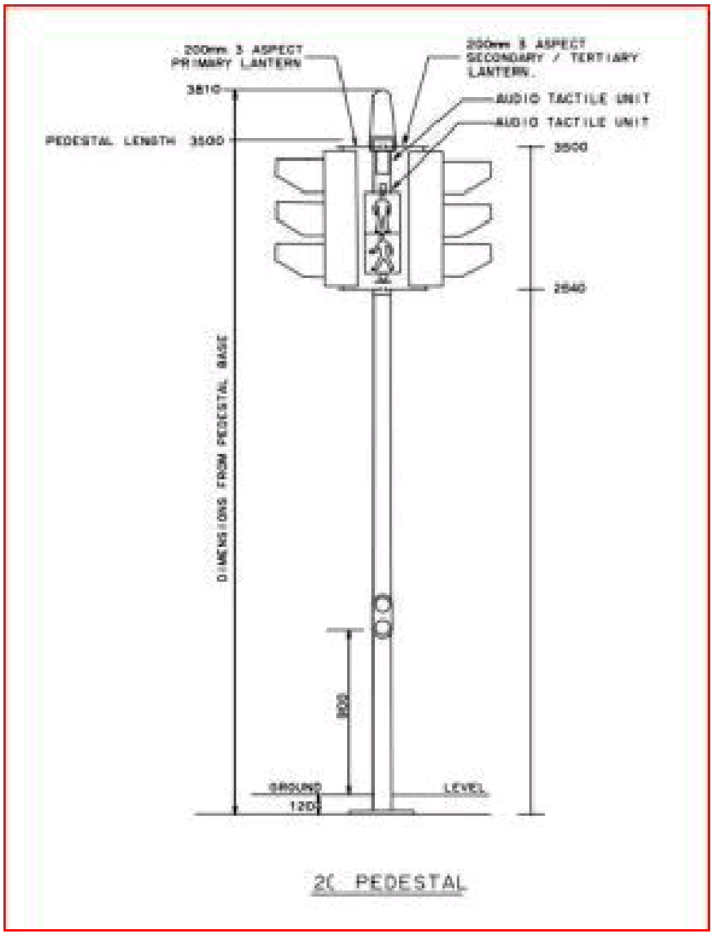


Fig. 5- proposed traffic light

Harrington Street and Patrick Street, Hobart
A similar traffic signal installation with kerb bulbings and a one way street.

Fig. 6- example of a similar traffic installation at Harrington and Patrick Streets Hobart

Fig.7 - an example of a similar planting adjacent to traffic signals at Macquarie Street, South Hobart

Fig. 8- proposed land acquisition plan

Fig. 9- proposed road dedication plan

4. Background

4.1 An identical proposal was submitted under PLN-21-192. The application was required to be withdrawn as the proposal was incorrectly advertised and applications can no longer be readvertised.

5. Concerns raised by representors

5.1 No representations were received during the statutory advertising period between 23 June - 7 July 2021.

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 Urban Mixed Use Zone of the *Hobart Interim Planning Scheme 2015*.

6.3 The existing use a road and infrastructure within the road reservation and vehicle parking. The proposed use is road and infrastructure within the road reservation and vehicle parking. The existing and proposed use (vehicle parking) is a discretionary use in the zone.

6.4 The proposal has been assessed against:

6.4.1 Part D - 15 Urban Mixed Use Zone

6.4.2 E2.0 Potentially Contaminated Land Code

6.4.3 E5.0 Roads and Railway Assets Code

6.4.4 E7.0 Parking and Access Code

6.4.5 E7.0 Stormwater Management Code

6.4.6 E13.0 Historic Heritage Code

6.4.7 E17.0 Signs Code

6.5 The proposal relies on the following performance criteria to comply with the applicable standards:

6.5.1 Urban Mixed Use Zone - Subdivision Standards

Part D 15.5.1P2 - lot design
Part D 15.5.1P3 - frontage
Part D 15.5.1P6 - public open space

6.5.2 Potentially Contaminated Land Code

E.2.6.1P1 - Subdivision
E.2.6.2P1 - Excavation

6.5.3 Roads and Railway Assets Code

E5.6.4 P1 - Sight distances at accesses, junctions and level crossings

6.5.4 Parking and Access Code

E6.7.2P1 - Design of Vehicular Accesses

6.5.5 Historic Heritage Code:

E13.8.3P1 - Subdivision within a Heritage Precinct
E13.10.P1, E13.10.2P1 - Works in a Place of Archaeological Potential;

6.6 Each performance criterion is assessed below.

6.7 Urban Mixed Use Zone - Subdivision Standards Part D 15.5.1P2, P3, P6

6.7.1 The proposal includes the creation of a 136sqm lot, which will be acquired and dedicated as a road pursuant to Section 6 the Local Government (Highways) Act 1982, leaving a balance lot of 2469sqm. The balance lot, currently used for vehicle parking, will remain in private ownership.

The acceptable solution at clause 15.5.1A2 requires a lot to be designed in order to provide a minimum building area which is clear of frontage, side and rear boundary setbacks and clear of easements. In addition, the building area must not contain title restrictions which would limit or restrict the development of a commercial building and is a minimum of 10m x 15m in size.

The acceptable solution at clause 15.5.1A3 requires a lot to have a frontage of 15m.

6.7.2 There is no acceptable solution under Clause 15.5.1A6 which requires public open space, either in land or cash in lieu to be provided as part of a proposed subdivision in accordance with Council's policy. No area of public open space is proposed to be provided, either as land or cash in lieu.

6.7.3 The proposal does not comply with the acceptable solutions, therefore assessment against the performance criteria is relied upon.

6.7.4 The performance criterion at clause E15.5.1P2, P3 and P6 provides as follows:

P2 (design of each lot)

The design of each lot must contain a building area able to satisfy all of the following:

(a) be reasonably capable of accommodating use and development consistent with Zone Purpose, having regard to any Local Area Objectives or Desired Future Character Statements;

(b) provides for sufficient useable area on the lot for on-site parking and maneuvering, unless adequate arrangements are made for suitable alternative solutions to future likely demand generated by the development potential of the lot;

(c) minimises the need for earth works, retaining walls, and cut & fill associated with future development.

P3 (frontage of each lot)

The frontage of each lot must be sufficient to accommodate development consistent with the Zone Purpose, having regard to any Local Area Objectives or Desired Future Character Statements.

P6 (public open space)

Public Open Space must be provided as land or cash in lieu, in accordance with the relevant Council policy.

6.7.5 The objective of subdivision provisions within the Urban Mixed Use Zone is to provide for lots with appropriate area, dimensions, services, roads and access to public open space to accommodate development consistent with the Zone Purpose and any relevant Local Area Objectives or Desired Future Character Statements.

There are no Local Area Objectives or Desired Future Character Statements within the Urban Mixed Use Zone.

It is considered that the Zone Purpose Statements which are relevant to the assessment of this proposal, relate to development, which includes subdivision and the carrying out of works, which aim to promote pedestrian and vehicles safety through the introduction of traffic lights, kerb bulbing and pram ramps on the junction of Molle and Collins Streets. This has required the acquisition of land adjacent to the entrance to Council's Rivulet Park, the intent of which is to increase the amenity and encouraging use and pedestrian movement through the park and area

The subdivision will result in one (balance) lot of 2469 sqm remaining in private ownership. The lot has been levelled and is currently used as a private car park and due to the of the lot having a frontage of 16m and a depth between 60m- 100m, the lot is clearly capable of being developed for multiple uses, including sufficient area for onsite parking and maneuvering, under the Urban Mixed Zone.

The lot created by the subdivision is to be dedicated as road pursuant to Section 6 of the *Local Government (Highways) Act 1982*.

The application was referred to Council's Senior Parks Planner to gain advice as to the acquisition of public open space or cash in lieu to be provided. Council's Parks Planner advised that the owner has agreed to Council's acquisition of the lot which is being subdivided and therefore no public open space contribution in terms of cash in lieu is therefore required.

6.7.6 The proposal complies with the performance criterion.

6.8 E2.0 Potentially Contaminated Land Code Part E2.6.1P1 and 2.6.2P1

6.8.1 The acceptable solution for subdivision (E2.6.1A1) requires the Director of the EPA to certify that the land is suitable for the intended use. There is no acceptable solution for excavation undertaken on potentially contaminated land (E2.6.2A1).

6.8.2 The proposal includes subdivision of and excavation on potentially contaminated land.

6.8.3 The proposal does not meet, or there is no, acceptable solution; therefore assessment against the performance criterion is relied on.

6.8.4 The performance criteria at clauses E2.6.1 P1 and E2.6.2P1 provide as follows:

E2.6.1 P1

Subdivision does not adversely impact on health and the environment and is suitable for its 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 and the environment that includes:

(i) an environmental site assessment;
(ii) any specific remediation and protection measures required to be implemented before any use or development commences; and
(iii) a statement that the land is suitable for the intended use or development.

E2.6.2P1
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.

6.8.5 The objective of the excavation and subdivision provisions within the Potentially Contaminated Land Code is to ensure that the works/subdivision do not adversely impact on human health or the environment, and that the land is suitable for its intended use.

The application was accompanied by a Site Contamination Report. The application was referred to Council's Senior Environmental Health Officer, who assessed the report and advised that they endorse the findings of the report and its recommendations.

6.8.6 The proposal complies with the performance criteria.

6.9 E5.0 Roads and Railway Assets Code Part E5.6.4P1

6.9.1 The acceptable solution at clause 5.6.4A1 requires an access or junction to comply with the Safe Intersection Sight Distance as per Table E5.1 of the Code.

6.9.2 The proposal includes works to a junction which does not comply with the acceptable solution.

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 clauseE5.6.4P1 provides as follows:

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:

(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.

6.9.5 The objective of the provisions relating to sight distance at accesses and junctions aims to ensure that accesses and junctions provide sufficient sight distance between vehicles to enable safe movement of traffic.

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

Planning approval is sought for Roadworks including Traffic Signals and Subdivision at 40-50 Molle Street, Hobart and Adjacent Road Reserve.

More specifically the proposal includes:

• upgrading of the junction of Collins and Molle Streets including the installation of traffic signals, associated pits and conduits for electrical and communications cabling;
• demolition on existing kerb and gutter and construction of new guttering and kerb bulbing extensions to support pedestrian crosspoints;
• works within the road reservation including new stormwater pits and traffic/parking regulatory signage;
• street planting in minor garden beds where appropriate;
• subdivision of 50 Molle Street to allow for the creation of the access point associated with the junction signals. The subdivision will create a lot of 136sqm in area which will be dedicated as road pursuant to Section 6 of the Local Government (Highways) Act 1982. A further area of 64sqm of an untitled right of way between number 40-44 and 50 Molle Street will be dedicated as road; and
• The proposed subdivision will result in 40-50 Molle Street having a new title area of 2469sqm. This property will continue being used for vehicle parking.

The Development Engineer also referred the proposal to Council's Traffic Engineer who provided the following advice:

The performance criteria states that the design, layout and location of an access must provide adequate sight distance to ensure safe movement of vehicles. Given that the access will be controlled by traffic signals, and that in its existing form there are no sight distance issues, the proposal meets the Performance Criteria for E5.6.4.

6.9.6 The proposal complies with the performance criterion.

Fig. 10 - existing entrance to Hobart Rivulet Park

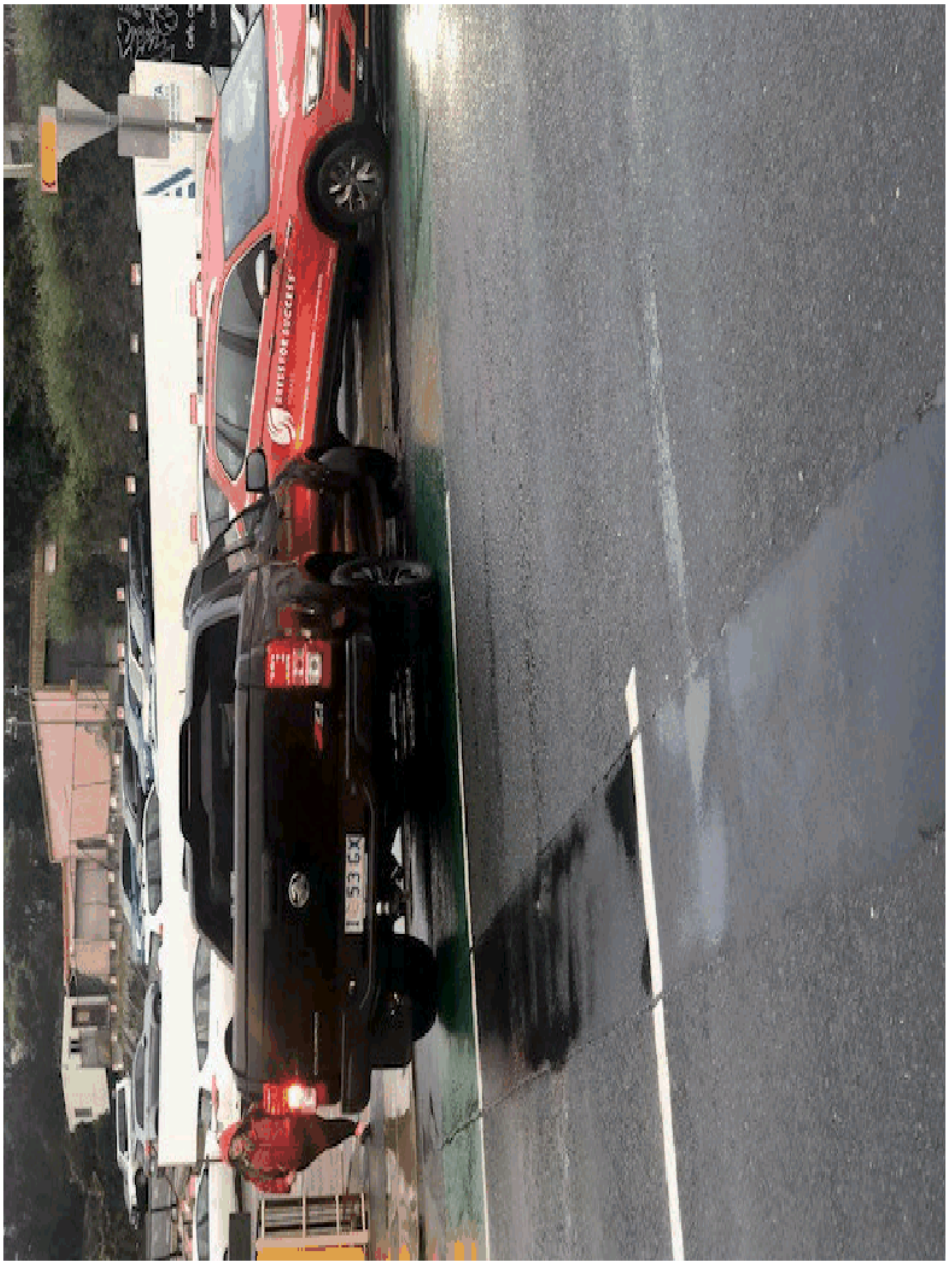


Fig. 11 - existing entrance to the Hobart Rivulet Park taken at 8.15am Tuesday 6 July 2021 (during school holidays)

Fig. 12 -photo taken at Molle Street looking towards the entrance to the Hobart Rivulet Park taken at 8.15am Tuesday 6 July 2021 (during school holidays)

6.10 E6.0 Parking and Access Code Part E6.7.2P1

6.10.1 The acceptable solution at clause E6.7.2A1 requires the design of vehicle access points to comply with the 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;

6.10.2 The proposal includes an access that does not comply with the above standards.

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 E6.7.2P1 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.

6.10.5 The objective of the provisions relating to the design of vehicular accesses is 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.

The Development Engineer referred the proposal to Council's Traffic Engineer who provided the following advice:

"The design and sight distance of the vehicular access will be assessed against the Performance Criteria, as the proposed access will be controlled by traffic signals (not covered in the planning scheme).

The performance criteria states that the access must be safe, efficient and convenient having regard to avoidance of conflicts between road users, avoidance of interference with traffic flow, suitability to traffic volume and ease of accessibility and recognition for users.

As this access will be controlled by traffic signals, interference with traffic flow will be minimised and the access will be suited to the traffic volumes on Molle Street. In addition, the provision of separated footpaths and a median island at the access ensures minimised conflict between road

users (pedestrians / cyclists vs. vehicles).

Finally, with the provision of a raised threshold and appropriate Car Park signage, the access is clear to road users.

The Development Engineer concluded that the design of vehicle access points in relation to the:

- avoidance of conflicts between users, including vehicles, cyclists and pedestrians
- the avoidance of unreasonable interference with the flow of traffic on adjoining roads,
- suitability for the type and volume of traffic likely to be generated by the use or development; and
- the ease of accessibility and recognition for users

is acceptable, as the submitted documentation appears to satisfy this requirement given the statements provided by the Council's traffic engineer contained within the City Mobility Unit's referral report.

6.10.6 The proposal complies with the performance criterion.

6.11 E13.0 Historic Heritage Code Part E13.10.1P1

6.11.1 There is no acceptable solution for subdivision or building and works in a Place of Archaeological Potential.

There is no acceptable solution for subdivision in a heritage precinct.

6.11.2 The proposal includes subdivision and building and works in a Place of Archaeological Potential. The subject site is within a heritage precinct HR1.

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

6.11.4 The performance criterion at clauses E13.8.3.P1, E13.10.1P1 and E13.10.2P1 provides as follows:

E13.8.3P1 (Subdivision in Heritage Precincts)

Subdivision must not result in any of the following:

(a) detriment to the historic cultural heritage significance of the precinct, as listed in Table E13.2;

(b) a pattern of subdivision unsympathetic to the historic cultural heritage significance of the precinct;

(c) potential for a confused understanding of the development of the precinct;

(d) an increased likelihood of future development that is incompatible with the historic cultural heritage significance of the precinct.

E13.10.1P1 (Building, Works and Demolition to Places of Archaeological Potential)

Buildings, works and demolition must not unnecessarily impact on archaeological resources at places of archaeological potential, having regard to:

(a) the nature of the archaeological evidence, either known or predicted;

(b) measures proposed to investigate the archaeological evidence to confirm predictive statements of potential;

(c) strategies to avoid, minimise and/or control impacts arising from building, works and demolition;

(d) where it is demonstrated there is no prudent and feasible alternative to impacts arising from building, works and demolition, measures proposed to realise both the research potential in the archaeological evidence and a meaningful public benefit from any archaeological investigation;

(e) measures proposed to preserve significant archaeological evidence 'in situ'.

E13.10.2 (Subdivision to Places of Archaeological Potential)

Subdivision must not impact on archaeological resources at Places of Archaeological Potential through demonstrating either of the following:

(a) that no archaeological evidence exists on the land;
(b) that there is no significant impact upon archaeological potential.

6.11.5 The objective of the provisions relating to building works and demolition in Places of Archaeological Potential are to ensure that building, works and demolition at a place of archaeological potential is planned and implemented in a manner that seeks to understand, retain, protect, preserve and otherwise appropriately manage significant archaeological evidence.

The objective of the provisions relating to subdivision at places of archaeological potential is to ensure that subdivision does not increase the likelihood of adverse impact on a place of archaeological potential.

The application was referred to Council's Senior Cultural Heritage Officer, who provided the following assessment:

This application is for traffic control devices, street works and subdivision in a Place of Archaeological Potential. The works and subdivision are also located within the Heritage Precinct Hobart Rivulet 1.

The precinct has the following statements of significance from table E13.2 in the Historic Heritage Code of the Scheme:

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.

The application is supported by a Statement of Archaeological Potential by Stuart Huys, Cultural Heritage Management Australia, dated 14 March 2021.

The above report identifies that any heritage structures or features present within the road easements are likely to have been completely destroyed or at least heavily impacted and that the archaeological potential of the proposed traffic installation works area is assessed as being low to very

low.

The following comment is made in the heritage report stating:
"It is assessed that the proposed installation of the traffic signals at the junction of Collins Street and Molle Street has a very low potential for impacting on any historic heritage feature. On this basis it is recommended that there should be no heritage constraints to these works proceeding. However, as per the Practice Note No 2 by the Tasmanian Heritage Council, processes must be followed should any unexpected archaeological features and/or deposits be revealed during works."

When the proposal is assessed against E13.10.1 Development Standards for Places of Archaeological Potential cl E13.10.1 P1, it is considered that the proposal satisfies the performance criteria. A general condition regarding unanticipated archaeological finds should be included in any permit issued.

The works within the heritage precinct are exempt from requiring a planning permit under clause E13.4.1 (l).

The proposal for subdivision creates a small separate title which will be a dedicated road reservation. This must be assessed against E. 13.8.3 P1 (a) to (d) and E13.10.2 P1. The proposed subdivision area is currently a carpark and immediately adjacent to a right of way that leads into the Collins - Molle St junction from the Hobart Rivulet linear park path. The subdivision will alter the area from a carpark use to road reservation with minor works. It is concluded that the proposed subdivision will not result in detriment to the heritage significance of the precinct, unsympathetic or confused subdivision pattern or lead to future development incompatible with the significance of the precinct and will not impact on the archaeological resources of the Place of Archaeological Potential.

The proposal satisfies E13.10.1 P1, E13.10.2 P1, E13.8.3 P1 (a) to (d) of the Historic Heritage Code of the Scheme.

6.8.6 The proposal complies with the performance criterion.

7. Discussion

7.1 Planning approval is sought for Traffic Signals and Subdivision at 40-50 Molle Street, Hobart 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 perform well.

7.4 The proposal has been assessed by other Council officers, including the Council's Development, Traffic, Roads and Stormwater Services Engineers, Cultural Heritage Officer, Senior Parks Planner, Manager Surveying Services and Environmental Development Planner 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 Traffic Signals and Subdivision at 40-50 Molle Street, Hobart and Adjacent Road Reserve 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 Traffic Signals and Subdivision at 40-50 Molle Street, Hobart 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-21-375 - 40-50 MOLLE STREET 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 2021/00927-HCC dated 18 June 2021 as attached to the permit.

Reason for condition

To clarify the scope of the permit.

ENG sw3

The proposed traffic light footings must be designed to ensure the protection and access to the Council's stormwater main.

A detailed design must be submitted and approved as a Condition Endorsement prior to the issuing of any approval under the *Building Act 2016* or commencement of works (which ever occurs first). The detailed design must:

1. **Demonstrate how the design will ensure the protection and provide access to the Council's stormwater main.**

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

approved detailed 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 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 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 preconstruction 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 postconstruction 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, along with photos

of any existing drainage structures connected to or modified as part of the development, 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 postconstruction 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 post-construction condition assessment then any damage to the Hobart City Council's infrastructure identified in the postconstruction CCTV will be deemed to be the responsibility of the owner/developer.

SW 6

The new and amended stormwater infrastructure must be designed and constructed prior to completion or commencement of the approved use (whichever occurs first).

Prior to the issuing of any approval under the Building Act 2016 or commencement of works (whichever occurs first), detailed engineering drawings must be submitted and approved as a Condition Endorsement. The detailed engineering drawings must be certified by a suitably qualified and experienced civil engineer and must:

1. **be substantially in accordance with the Local Government Association of Tasmania: Tasmanian Municipal Standard Drawings (May 2020), as varied by the City of Hobart's published departures from those Drawings, and the Local Government Association of Tasmania, Tasmanian Subdivision Guidelines (October 2013);**
2. **clearly distinguish between public and private infrastructure;**
3. **show in both plan and long-section the proposed stormwater mains, including but not limited to, connections, flows, velocities, hydraulic**

grade lines, clearances, cover, gradients, sizing, material, pipe class, and inspection openings (lids and benching);

4. **include the associated calculations and catchment area plans. The stormwater system (including defined overland flow paths) must cater for all 1% AEP event flows as at 2100 (i.e including climate change loading) from a fully developed catchment. The main itself must be sized to accommodate at least the 5% AEP event flows from a fully-developed catchment;**
5. **include cross-sections demonstrating structural independence of the proposed traffic signal footings from Council's stormwater infrastructure and detailing the minimum clearances.**

A structural condition assessment and visual record of new or altered public infrastructure must be submitted prior to issue of practical completion.

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

SW 15

Stormwater drainage for both the Balance Lot CT 47718/1 and the future Road (Lot 1 from CT47718/1 and the dedicated land) must be designed and installed to meet the needs of current and future development, prior to the sealing of the final plan or commencement of the use (whichever occurs first).

Detailed engineering drawings 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 drawings must be certified by a suitably qualified and experienced engineer and must:

1. **be generally in accordance with Local Government Association of Tasmania: Tasmanian Municipal Standard Drawings (May 2020), as varied by the City of Hobart published departures from those drawings, and Tasmanian Subdivision Guidelines (October 2013);**
2. **clearly distinguish between public and private infrastructure; and existing and proposed (including works installed as private to be taken over as public assets);**
3. **show the location of all existing connections and private services**

passing through the future Road;

4. **show the final lot boundaries, with the Balance lot serviced separately by Council infrastructure; and all private plumbing and surface flows from the Balance Lot not intruding into the future Road;**
5. **show the proposed location, levels and size of each lot connection such that the majority of the lot can be adequately drained via gravity;**
6. **include supporting calculations for the stormwater works demonstrating flows from the 5% AEP will be adequately captured and directed to public infrastructure, and a defined 1% AEP overland flow path.**
7. **show in plan and long-section the proposed public stormwater infrastructure (including existing private to be taken over), including but not limited to, delineation of public vs private, clearances from structures and other services, grate/lid details (eg class, heel-safe), cover, grade, sizing, material, pipe class, and inspection openings;**

A structural condition assessment and visual record of new or altered public infrastructure must be submitted prior to issue of practical completion or sealing of the final plan (whichever occurs first).

All work required by this condition must be constructed in accordance with the approved engineering drawings. All services must be installed prior to the sealing of the final 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. Kerbing or alternate adequately sized surface runoff collection within the Balance Lot above the proposed Lot boundary, directed to a new Lot connection to the public stormwater mains via a private pit is required. A clear delineation of private vs public trench grate (should Council take over part) will also be required.

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 2

Sediment and erosion control measures, 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.

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.

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.

HER 6

Should any features or deposits of an archaeological nature be discovered on

the site during excavation or disturbance:

1. **All excavation and/or disturbance must stop immediately; and**
2. **A qualified archaeologist must be engaged to attend the site and provide advice and assessment of the features and/or deposits discovered and make recommendations on further excavation and/or disturbance; and**
3. **All and any recommendations made by the archaeologist engaged in accordance with (2) above must be complied with in full; and**
4. **All features and/or deposits discovered must be reported to the Council with 1 day of the discovery; and**
5. **A copy of the archaeologists advice, assessment and recommendations obtained in accordance with paragraph (2) above must be provided to Council within 60 days of receipt of the advice, assessment and recommendations.**

Excavation and/or disturbance must not recommence unless and until approval is granted from the Council.

Reason for condition

To ensure that work is planned and implemented in a manner that seeks to understand, retain, protect, preserve and manage significant archaeological evidence.

ENVHE 1

Recommendations in the report *GES - Environmental Site Assessment - Intersection of Collins and Molle Streets, Hobart February 2021* must be implemented for the duration of the development.

Specifically:

- **A Soil and Water Management Plan (SWMP) should be put in place to account for the management and erosion of soil with potential ecological impacts,**
- **Due to variable and elevated levels of heavy metals and hydrocarbons - any excavated material must be stockpiled and resampled for offsite disposal in accordance with IB105 and the controlled waste regulations,**
- **Material excavated from hole 'H1' should be segregated due to the elevated levels of benzo(a)pyrene observed in that vicinity.**

Reason for condition:

To ensure that the risk to workers and the environment remains low and acceptable, and to comply with Contaminated sites requirements.

OPS s1

The Hobart Rivulet Park entrance sign is to be erected in a location that meets the satisfaction of the Director City Amenity.

Reason for condition

To ensure the Hobart Rivulet Park sign is installed in a location that satisfies design, safety and user functionality.

OPS s2

Landscaping and garden beds are to be installed to the satisfaction of the Director City Amenity.

Reason for condition

To maintain the amenity of the City's streetscapes, parks and gardens.

SURV 1

The applicant must submit to the Council a copy of the surveyor's survey notes at the time of lodging the final plan.

Reason for Condition

To enable the Council to accurately update cadastral layers on the corporate Geographic Information System.

SURV 2

The final plan and schedule of easements must be submitted and approved in accordance with section 89 of the *Local Government (Building & Miscellaneous Provisions) Act 1993*.

Reason for Condition

To ensure that the subdivision/boundary adjustment is carried out in accordance with the Council's requirements under the provisions of Part 3 of the *Local Government (Building & Miscellaneous Provisions) Act 1993*.

SURV 5

The proposed Road lot is to be transferred in fee simple to the Council at nominal consideration.

Prior to the sealing of the final plan an executed and stamp duty assessed Land Titles Office transfer instrument is to be forwarded to the Council together with a cheque made payable to the Land Titles Office for the associated Land Titles Office registration fees.

Reason for Condition

To ensure that the title to the proposed road lot issues in the Council.

Advice: Lot 1 should be notated as Road on the final plan of survey and the balance of CT 47718/1 should be shown on a Plan of Title Balance Plan.

ENG 16

Prior to the sealing of the final plan, private sewer, stormwater (including surface drainage) and water services/connections are to be entirely separate to each lot and contained wholly within the lots served.

Reason for condition

To ensure that each lot is services separately.

ENG 17

Prior to the sealing of the final plan, the developer must verify compliance with condition ENG 16 by supplying the Council with an as-installed services plan clearly indicating the location and details of all relevant services (entirely contained within their respective lots or appropriate easements). The as-installed services plan must be accompanied by certification from a suitably qualified person that all engineering work required by this permit has been completed.

Advice: Any final plan submitted for sealing will not be processed unless it is accompanied by documentation by a suitably qualified person that clearly certifies that this condition has been satisfied and that all the work required by this condition has been completed. A 'suitably qualified person' must be a Professional Engineer or Professional Surveyor or other persons acceptable to Council.

Reason for condition

To ensure that the Developer provides the Council with clear written confirmation that the separation of services is complete.

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.

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.

PERMIT TO CONSTRUCT PUBLIC INFRASTRUCTURE

You may require a permit to construct public infrastructure, with a 12 month maintenance period and bond (please contact the Hobart City Council's City Amenity Division to initiate the permit process).

NEW SERVICE CONNECTION

Please contact the Hobart City Council's City Amenity Division to initiate the application process for your new stormwater connection.

STORM WATER

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.

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: 20 July 2021

Attachment(s):

Attachment B - CPC Agenda Documents

Attachment C - Planning Referral Officer Environment Health Report

Attachment D - CPC Supporting Documents

Enquiries to: Stuart Baird
☎: 2955
✉: bairds@hobartcity.com.au
Our Ref: 36-20-3; R0680: R0404
SB:SB

Your Ref:

17 May 2021

Development Appraisal Unit
City of Hobart
GPO Box 503
HOBART TAS 7001

Dear Sir/Madam

COLLINS STREET AND MOLLE STREET, HOBART, JUNCTION TRAFFIC SIGNALS DEVELOPMENT APPLICATION –

The purpose of this letter is to support the development application for the installation of traffic signals at the junction of Collins Street and Molle Street, Hobart.

Background

The City of Hobart has secured funding for the upgrading of the junction of Collins Street and Molle Street, Hobart with traffic signals. The key purpose of the traffic signals project is to improve the safety of vulnerable road users who cross the streets at this location.

Collins Street is a key pedestrian and bicycle link connecting the city centre to the Hobart Rivulet linear park path. The path extends through the suburb of South Hobart and connects the City of Hobart to kunanyi/Mt Wellington along with associated parks and reserves.

Investment in the Hobart Rivulet path over many years by the City of Hobart has resulted in a high quality, predominantly off road path which supports commuting and recreation trips for vulnerable road user's between South Hobart, kunanyi/Mt Wellington and the CBD.

Molle Street carries consistent peak hour traffic and vulnerable road users have (generally) very short gaps in traffic to undertake the crossing. The use of traffic signals at this location to improve road safety has been assessed and recommended by City of Hobart officers. Key stakeholder engagement for the proposed works has occurred in 2019 and the matter has been considered by the Hobart City Council's – City Infrastructure Committee and the Council.

Approval to proceed with the project has been granted by the Council. A Tasmanian Transport Commission Direction to install the traffic signals has been received by the City of Hobart.

Concept design has been completed and test pit investigations and sampling for potentially contaminated soil has been undertaken. A Statement of Archaeological Potential has also been prepared.

Documentation associated with this proposal is attached.

Proposed works

The proposed upgrade works are described in the drawing set.

Demolition

Minor demolition works to modify existing kerb and gutter to create new kerb bulbings. Associated minor works to remove or alter redundant civil infrastructure.

New Works

New kerb bulbing extensions to support the pedestrian crossing points.

Traffic signals, associated pits and conduits for electrical and communications cabling.

Minor alterations to storm water pits and connections to drain the proposed arrangement

Asphalt paving to make good around works.

Street plantings of minor garden beds containing drought tolerant plantings to be negotiated with City Amenity (Parks and Reserves) and where appropriate.

Property acquisition

Property subdivision associated with property at 50 Molle Street to create the access point associated with junction signalisation.

Supporting documentation

Specialist reporting has been undertaken for the potential adjacent contaminated sites.

The Hobart City Council has considered the proposal and approved the project subject to the necessary statutory approvals being obtained. The committee report is attached and the Council resolution is linked here (item 17):
http://hobart.infocouncil.biz/Open/2019/09/CO_09092019_AGN_1117_AT_WEB.htm

Searching has taken place for land title records for the project area, what has been found to exist, is attached.

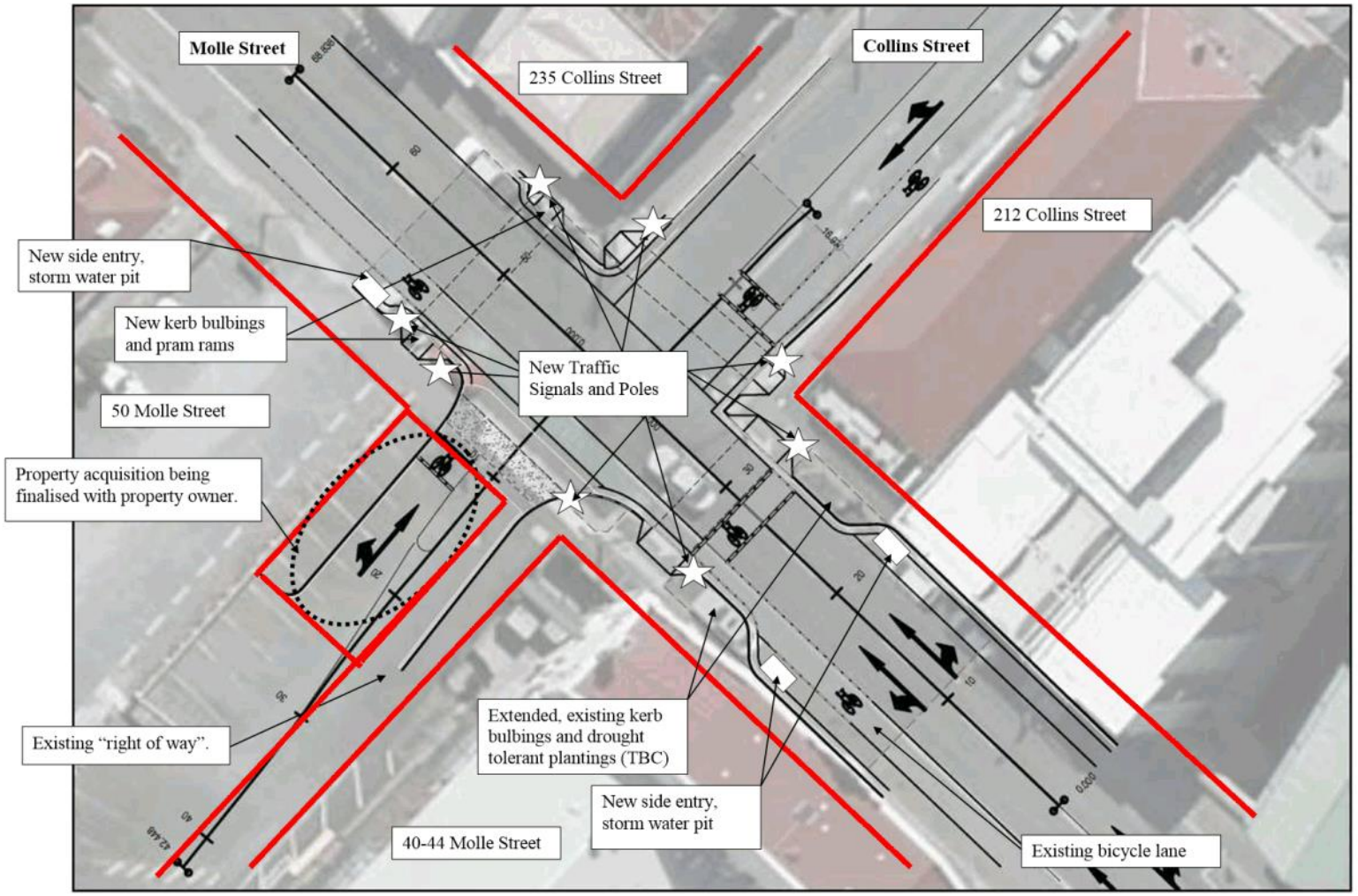
Yours sincerely

(Stuart Baird)
SENIOR TRANSPORT ENGINEER

Attachment(s)

- 1. Landowner (General Manager) Consent
- 2. City Infrastructure Committee report
- 3. Land title – List Screen Shot and titles where available
- 4. DA Concept Design Drawing Set
- 5. Environmental Site Assessment
  (Potentially contamination land statement and test results)
- 6. Statement of Archaeological Potential

Molle Street and Collins Street junction – Traffic signalisation
Basic Site Plan (Refer full drawing set for details)



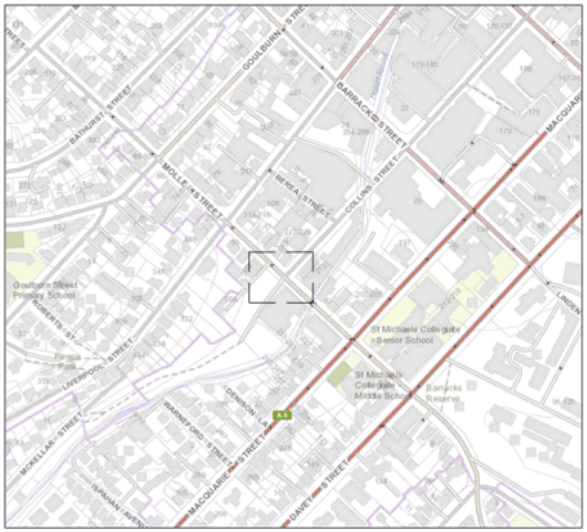
Property boundaries shown in RED – Note aerial photo distortion obscures some footpath areas.

Scale: 0m 10m 20m

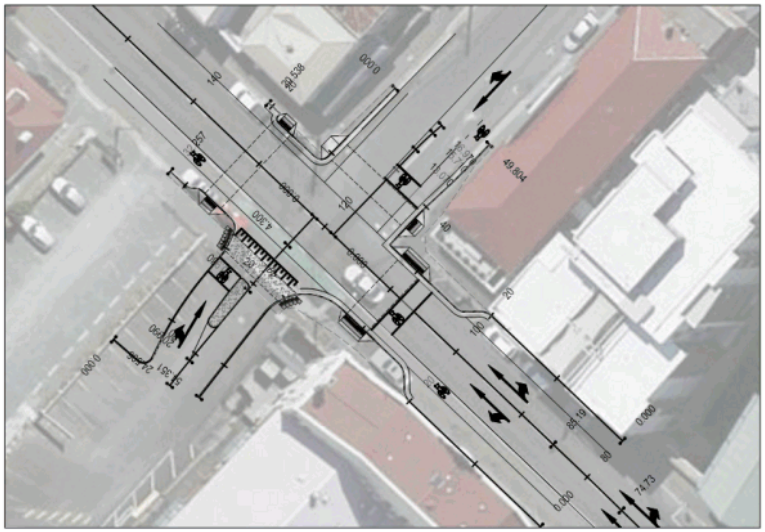
Molle Street and Collins Street junction – Traffic signalisation
Basic Site Plan (Refer full drawing set for details)

City of HOBART

HOBART CITY COUNCIL
COLLINS STREET AND MOLLE STREET
SIGNALISATION SITE 9487



LOCALITY PLAN



Sheet List Table	
Sheet Number	Sheet Title
C1000	HCC-MSIG-C1000 - COVER PAGE
C1005	HCC-MSIG-C1005 - GENERAL NOTES
C1010	HCC-MSIG-C1010 - ALIGNMENT AND SURVEY CONTROL
C1020	HCC-MSIG-C1020 - TYPICAL SECTIONS
C1100	HCC-MSIG-C1100 - GENERAL ARRANGEMENT
C1101	HCC-MSIG-C1101 - PEDESTRIAN RAMP
C1102	HCC-MSIG-C1102 - PEDESTRIAN RAMP
C1200	HCC-MSIG-C1200 - DRAINAGE
C1250	HCC-MSIG-C1250 - SERVICES
C1300	HCC-MSIG-C1300 - SIGNALS DWG 1 OF 2
C1301	HCC-MSIG-C1301 - SIGNALS DWG 2 OF 2
C1302	HCC-MSIG-C1302 - SIGNALS DETAIL
C1350	HCC-MSIG-C1350 - SIGNALS FOUNDATIONS DWG 1 OF 4
C1351	HCC-MSIG-C1351 - SIGNALS FOUNDATIONS DWG 2 OF 4
C1352	HCC-MSIG-C1352 - SIGNALS FOUNDATIONS DWG 3 OF 4
C1353	HCC-MSIG-C1353 - SIGNALS FOUNDATIONS DWG 4 OF 4
C1400	HCC-MSIG-C1400 - SIGNS
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C1701	HCC-MSIG-C1701 - LONG SECTIONS DWG 1 OF 3
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C1751	HCC-MSIG-C1751 - SW LONG SECTIONS DWG 1 OF 2
C1752	HCC-MSIG-C1752 - SW LONG SECTIONS DWG 2 OF 2
C1801	HCC-MSIG-C1801 - CROSS SECTIONS DWG 1 OF 2
C1803	HCC-MSIG-C1803 - CROSS SECTIONS DWG 2 OF 2

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No	Revision	Drawn	Authorised	Date
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B	DETAILED DESIGN	AG	BD	04 MAR
A	CONCEPT DESIGN	AG	BD	20 OCT

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Small team, big outcomes

Client	HOBART CITY COUNCIL
Project	COLLINS STREET AND MOLLE STREET SIGNALISATION SITE 9487
Title	COVER PAGE
Drawing Number	HCC-MSIG-C1000
Revision	B ISSUED 04/03/2021

SAFETY IN DESIGN

1. THE DESIGN OF WORKS SHOWN ON THESE DRAWINGS ACCOUNTS FOR THE SAFETY OF USERS BY COMPLIANCE WITH DESIGN CODES INCLUDING:
   - Austroads Guides to Road Design
   - IPWEA Standard Drawings as issued by LGAT 03/12/2020
2. THE SAFETY OF THE DESIGN IS CONDITIONAL UPON THE WORKS BEING COMPLETED IN THEIR ENTIRETY BY COMPETENT CONTRACTORS AND DOES NOT NECESSARILY ACCOUNT FOR RISKS THAT MAY OCCUR DURING THE CONSTRUCTION, COMMISSIONING, OPERATION, MAINTENANCE OR DEMOLITION PHASES OF THE WORKS.
3. DURING THE CONSTRUCTION, COMMISSIONING, OPERATION, MAINTENANCE AND DEMOLITION PHASES OF THE WORKS THE CONTRATORS AND OWNERS ARE RESPONSIBLE FOR IMPLEMENTING A SAFE WORKPLACE IN ACCORDANCE WITH THE (TAS) WORK HEALTH AND SAFETY ACT 2012 AND THE REGULATIONS THERETO (THE ACT) AND SHALL HAVE IN PLACE A WORKPLACE HEALTH & SAFETY POLICY AND SHALL UNDERTAKE A CONTRACT RISK REVIEW PRIOR TO UNDERTAKING THE CONTRACT.
4. THE INCLUSION OR OMISSION OF ANY ITEM FROM THE DESIGN OR DRAWINGS OR SPECIFICATION OR SCHEDULE OR CONTRACT DOES NOT DIMINISH THE RESPONSIBILITY OF CONTRACTORS, OWNERS, USERS, OPERATORS, MAINTAINANCE AND DEMOLITION CONTRACTORS TO ENSURE SAFE WORK PRACTICES ARE EMPLOYED IN ACCORDANCE WITH THE ACT DURING ANY PHASE OF THE LIFE OF THE WORKS.
5. THE FOLLOWING ITEMS ARE LISTED AS RELEVANT TO ENSURING THAT SAFE WORK PRACTICES ARE EMPLOYED ON SITE DURING THE CONSTRUCTION PHASE, BUT IS NOT INTENDED TO BE A COMPREHENSIVE LIST OR TO REPLACE THE CONTRACTOR'S OWN PROJECT SPECIFIC ASSESSMENT AND CONTROL OF SITE RISKS AS REQUIRED BY THE ACT:
   - Prepare Workplace Health & Safety Plan for the site
   - Undertake site service locations and identify O/H electricity
   - Provide separation of work site and access, storage and stockpiles
   - Provide barriers, warning notifications to prevent the unauthorized access to the site by the public
   - Prevent the impact of any work procedures including the use of directional lasers on workers or the public
   - Provide traffic control in compliance with Austroads Guide to Temporary Traffic Management.
   - Provide safety barriers at excavations and trenches per the Act
   - Assess the requirement for confined space procedures
6. PRIOR TO HANDOVER ENSURE THAT SAFETY SIGNAGE IS IN PLACE ON ANY ROAD TERMINATIONS AND ON ANY UNCOMPLETED TRENCHING WORKS
7. ATTEND TO ANY EMERGENCY WORKS THAT MAY BE REQUIRED DURING THE DEFECTS LAIBILITY (MAINTENANCE) PERIOD TO ENSURE THE CONTINUING SAFETY OF THE USERS OF THE WORKS AND ATTEND TO THE RECTIFICATION OF ANY DEFECTS
8. AFTER THE END OF THE DEFECTS LIABILITY PERIOD THE LOCAL GOVERNMENT AREA COUNCIL , TASWATER, TASNETWORKS, TELSTRA/NBN, NBNCO TO MAINTAIN THE WORKS IN ACCORDANCE WITH THE LOCAL GOVERNMENT ACT, THE STATE TRAFFIC ACT AND ACTS AND SAFETY PROCEDURES RELATING TO TASWATER, TASNETWORKS, TELSTRA/NBN & NBNCO.
9. DEMOLITION, IF REQUIRED, TO BE UNDERTAKEN IN ACCORDANCE WITH LOCAL GOVERNMENT PERMITS AND SERVICE AUTHORITY CODES OF PRACTICE.

GENERAL NOTES

1. READ THESE NOTES IN CONJUNCTION WITH OTHER ENGINEERING DRAWINGS AND SPECIFICATIONS, AND WITH SUCH OTHER WRITTEN INSTRUCTIONS ISSUED. REFER TO CONCRETE DRAWINGS FOR SETTING OUT AND DETAIL DIMENSIONS. IN CASE OF DISCREPANCY, PRECEDENCE IS GIVEN TO DRAWINGS, THEN NOTES, THEN SPECIFICATION.
2. CARRY OUT WORK IN A SAFE MANNER IN ACCORDANCE WITH APPLICABLE LEGISLATION, STATUTORY REGULATIONS, BY-LAWS OR RULES. CONTRACTOR IS RESPONSIBLE FOR OCCUPATIONAL HEALTH AND SAFETY OF SITE PERSONNEL AND GENERAL PUBLIC IN ACCORDANCE WITH ALL CURRENT WORK HEALTH AND SAFETY ACTS, LEGISLATIVE REQUIREMENTS, ASSOCIATED REGULATIONS AND CODES OF PRACTICE, INDUSTRIAL AGREEMENTS AND ACCEPTED INDUSTRY PRACTICE.
3. REFER DISCREPANCIES TO SUPERINTENDENT BEFORE PROCEEDING WITH WORK.
4. SUBMIT DETAILS OF PROPOSED CHANGES TO SCOPE, WORK METHODS OR MATERIALS etc. FOR APPROVAL BEFORE PROCEEDING. APPROVAL DOES NOT AUTHORISE A VARIATION TO THE CONTRACT.
5. NOMINATION OF PROPRIETARY ITEMS DOES NOT INDICATE EXCLUSIVE PREFERENCE, BUT INDICATES REQUIRED PROPERTIES OF ITEM. SIMILAR ALTERNATIVES HAVING REQUIRED PROPERTIES MAY BE OFFERED FOR APPROVAL. APPROVAL DOES NOT AUTHORISE A VARIATION TO THE CONTRACT. INSTALL PROPRIETARY ITEMS IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS AND RECOMMENDATIONS.
6. OBTAIN NECESSARY PERMITS AND APPROVALS FROM RELEVANT AUTHORITIES BEFORE COMMENCING WORK ON SITE. NOTIFY RELEVANT SERVICE AUTHORITIES BEFORE COMMENCING WORK ON SITE.
7. GIVE TWO WORKING DAYS' (48 HOURS) NOTICE SO THAT INSPECTION MAY BE MADE OF CRITICAL STAGES OF WORK.
8. INSPECTIONS AND REVIEWS UNDERTAKEN BY SUPERINTENDENT OR OTHERS DO NOT RELIEVE CONTRACTOR OF RESPONSIBILITY FOR COMPLIANCE WITH DRAWINGS AND SPECIFICATIONS.
9. DO NOT OBTAIN DIMENSIONS BY SCALING FROM DRAWINGS.
10. DIMENSIONS ARE IN MILLIMETRES, LEVELS ARE IN METRES UNO, CHAINAGES ARE IN METRES UNO.
11. DATUM FOR LEVELS IS AHD (AUSTRALIAN HEIGHT DATUM).
12. HAVE SURVEY AND SETTING OUT UNDERTAKEN BY A REGISTERED SURVEYOR.
13. VERIFY ON SITE SETTING OUT DIMENSIONS AND EXISTING MEMBER SIZES SHOWN ON CONCRETE DRAWINGS BEFORE SHOP DRAWINGS, CONSTRUCTION AND FABRICATION IS COMMENCED. EXISTING STRUCTURES SHOWN ON DRAWINGS ARE IN APPROXIMATE LOCATIONS ONLY.
14. USE STANDARD BOLT PATTERNS etc. THROUGHOUT THE WORKS TO AVOID CONFUSION OR AMBIGUITY.
15. TAKE CARE OF HAZARDS ASSOCIATED WITH BURIED, CONCEALED OR OVERHEAD SERVICES. TAKE PRECAUTIONS AND WORKMANSHIP UNDERTAKE EXPLORATION TO ESTABLISH LOCATION OF AND PROTECT EXISTING SERVICES AT SITE. SERVICES SHOWN ON DRAWINGS ARE IN APPROXIMATE LOCATIONS ONLY. SERVICES OTHER THAN THOSE SHOWN MAY EXIST ON SITE. MARK LOCATIONS OF SERVICES CLEARLY ON SITE, AND ON AS-BUILT DRAWINGS. HAND EXCAVATE WITHIN ONE METRE OF INGROUND SERVICES.
16. DISPOSE OF SURPLUS MATERIAL OFF SITE IN ACCORDANCE WITH LOCAL AUTHORITY WASTE REGULATIONS.
17. IMPLEMENT SOIL AND WATER MANAGEMENT PROCEDURES TO AVOID EROSION, CONTAMINATION AND SEDIMENTATION OF SITE, SURROUNDING AREAS AND DRAINAGE SYSTEMS.
18. WORKMANSHIP AND MATERIALS TO COMPLY WITH REQUIREMENTS OF AUSTRALIAN STANDARDS, NATIONAL CONSTRUCTION CODE (NCC) AND BY-LAWS AND ORDINANCES OF RELEVANT BUILDING AUTHORITIES. ALL STANDARDS REFERRED TO ARE THOSE CURRENT (AS AMENDED) AT COMMENCEMENT OF CONTRACT.
19. OBTAIN REQUIREMENTS FOR SERVICES, ADJOINING ELEMENTS etc TO BE EMBEDDED IN, FIXED TO OR SUPPORTED ON WORK AND PROVIDE FOR REQUIRED FIXINGS. PROVIDE FOR TEMPORARY SUPPORT OF ADJOINING ELEMENTS DURING CONSTRUCTION. DRAWINGS DO NOT SHOW DETAILS OF ALL FIXTURES, INSERTS, SLEEVES, RECESSES OR OPENINGS etc REQUIRED.
20. PROTECT EXISTING STRUCTURES FROM DAMAGE OR CRACKING. MAKE GOOD ANY DAMAGE TO EXISTING ELEMENTS AT COMPLETION OF WORKS.
21. WHERE NEW WORK ABUTS EXISTING, PROVIDE SMOOTH TRANSITION FREE OF ABRUPT CHANGES.
22. NEATLY CUT BACK CONCRETE TO BE REMOVED TO A CLEAN TRUE FACE USING A DIAMOND SAW.
23. HAVE TESTING PERFORMED BY AN INDEPENDENT NATA (NATIONAL ASSOCIATION OF TESTING AUTHORITIES) ACCREDITED AUTHORITY, AND PROVIDE TEST REPORTS TO SUPERINTENDENT.
24. SUPPLY RELEVANT NOTES, DRAWINGS AND SPECIFICATIONS etc TO SUB-CONTRACTORS.
25. BUILD, FABRICATE AND PROCURE ONLY FROM DRAWINGS 'ISSUED FOR CONSTRUCTION'.
26. KEEP ON SITE A COMPLETE SET OF CONTRACT DOCUMENTS (INCLUDING DRAWINGS AND SPECIFICATIONS) AND SITE INSTRUCTIONS. TEMPORARY WORKS
27. THESE DRAWINGS DO NOT DETAIL TEMPORARY WORKS. CONSTRUCTION METHODS AND TEMPORARY WORKS ARE RESPONSIBILITY OF THE CONTRACTOR.
28. PROVIDE SCAFFOLDING, BARRIERS, FALL RESTRAINT, HAND-MID RAILS AND TOE BOARDS FOR WORK AT HEIGHT. ERECT ACCESS STAIRS AT EARLIEST OPPORTUNITY TO REDUCE OPEN SHAFT HAZARDS AND FACILITATE ACCESS. MAINTAIN SAFETY MESH AND BARRIERS TO ALL OPENINGS AND ELEVATED EDGES.
29. MAINTAIN STRUCTURES IN A STABLE CONDITION DURING CONSTRUCTION AND PROVIDE TEMPORARY BRACING AND/OR SUPPORT AS REQUIRED.
30. DO NOT PLACE OR STORE BUILDING MATERIALS ON, SUPPORT FORMWORK OR PROP FROM STRUCTURAL MEMBERS WITHOUT SUPERINTENDENT'S APPROVAL. PROVIDE CALCULATIONS BY SUITABLY QUALIFIED STRUCTURAL ENGINEER TO PROVE ADEQUACY OF STRUCTURE FOR PROPOSED CONSTRUCTION SEQUENCE, METHODS AND LOADS INCLUDING PROPPING, CRANE LIFTS etc.

COMPACTION OF FILL

1. FILL TO COMPRISE OF GRANULAR MATERIAL COMPACTED IN 300MM MAXIMUM LAYERS WITH COMPACTION EQUIPMENT TO ACHIEVE A FINAL COMPACTION OF 98% MODIFIED MAXIMUM COMPACTION. TOPSOIL TO BE STRIPPED AND SURFACE BENCHED IF CROSS SLOPE IS 10% OR MORE PRIOR TO PLACING FILL.

SOIL AND WATER MANAGEMENT

1. SOIL & WATER MANAGEMENT IS TO COMPLY WITH DERWENT ESTUARY PROGRAM SOIL AND WATER MANAGEMENT OF BUILDING AND CONSTRUCTION SITES FACT SHEETS TO PREVENT ANY TRANSFER OF SOIL MATERIAL OUTSIDE OF THE AREA SPECIFICALLY NECESSARILY DISTURBED FOR CONSTRUCTION OF THE WORKS.
2. PARTICULAR ATTENTION SHALL BE PAID TO ENSURE THAT NO SOIL MATERIAL IS TRACKED ONTO ROADS & FOOTPATHS OR TO ENTER COUNCILS STORMWATER SYSTEM.
3. ALL PROTECTION MEASURES ARE TO COMPLY WITH THE REQUIREMENTS OF THE SUPERINTENDENTS REPRESENTATIVE. THE CONTRACTOR SHALL SUBMIT A SOIL & WATER MANAGEMENT PLAN PRIOR TO STARTING WORK ON SITE (REFER SOIL AND WATER MANAGEMENT DERWENT ESTUARY PROGRAM FACT SHEET 3).

SECURING EXCAVATION

1. ALL TRENCHING AND SHORING SYSTEMS PROPOSED FOR USE SHALL BE SUITABLY DESIGNED AND CERTIFIED BY A COMPETENT ENGINEER.
2. TRENCH SUPPORT, CONSTRUCTION METHODS AND REMOVAL OF TRENCH SUPPORT SHALL:
   - 2.1. PREVENT ANY BUILDING, OTHER STRUCTURES, ROAD OR ROAD SURFACES OVER AND ADJACENT TO THE WORKS FROM SETTLING, CRACKING, BEING SHAKEN OR BEING DISPLACED.
   - 2.2. PREVENT ANY PORTION OF THE FLOOR, WALLS, ROOF OR END FACES OF EXCAVATIONS FROM SLIPPING OR FALLING, OR BEING FORCED THROUGH JOINTS AND OPEN SPACES IN THE GROUND SUPPORT SYSTEM.
   - 2.3. MAINTAIN THE GROUND SUPPORT SYSTEM IN A SATISFACTORY CONDITION UNTIL THE COMPLETION OF THE SECTION OF THE WORK IN WHICH IT IS LOCATED.
   - 2.4. PROVIDE A SUFFICIENT QUANTITY OF MATERIALS ON HAND FOR BRACING, SHEETING AND SHORING THE EXCAVATIONS, INCLUDING A RESERVE WHICH IS AVAILABLE FOR IMMEDIATE USE IN CASE OF ACCIDENT OR EMERGENCY.
3. ANY TIMBER USED AS GROUND SUPPORT SHALL BE HARDWOOD OF MINIMUM STRESS GRADE F8 IN ACCORDANCE WITH AS2082 'VISUALLY STRESS GRADED HARDWOOD FOR STRUCTURAL PURPOSES'. TIMBER USED FOR LAGGING AND SOLDIER SETS SHALL HAVE DIMENSIONS NOT LESS THAN 150mm BY 75mm IN CROSS SECTION.
4. IN ALL OPEN EXCAVATIONS, ALL GROUND SUPPORT SHALL BE WITHDRAWN AS THE WORK OF BACKFILLING THE TRENCH PROCEEDS EXCEPT:
   - 4.1. WHERE THE GROUND SUPPORT SHALL REMAIN IN POSITION BECAUSE THE WITHDRAWAL IS IMPRACTICABLE OR WOULD ENDANGER THE SAFETY OF THE WORKS, BUILDINGS, STRUCTURES, STREET AND OTHER SURFACES OVER AND ADJACENT TO THE LINE OF THE WORKS. WHERE THIS IS PROPOSED IT SHALL ONLY BE ADOPTED FOLLOWING FORMER PRIOR APPROVAL BY THE SUPERINTENDENT.
   - 4.2. WHERE IT IS SHOWN ON THE DRAWINGS, OR IN THE CONTRACT DOCUMENTS THAT THE GROUND SUPPORT SHALL REMAIN IN POSITION.
5. ENSURE THAT THE PIPE BEDDING, PIPES AND FITTINGS AND OTHER APPURTANCES SUCH AS PITS, CATHODIC PROTECTION AND MARKER POSTS ARE NOT DISTURBED OR DAMAGED BY WITHDRAWAL OF GROUND SUPPORT.
6. VOIDS LEFT BY THE WITHDRAWAL OF GROUND SUPPORT SHALL BE FILLED WITH BEDDING MATERIAL OR OTHER APPROVED MATERIAL.
7. WHERE GROUND SUPPORT IS APPROVED TO BE LEFT IN POSITION IN OPEN EXCAVATIONS, SUCH GROUND SUPPORT SHALL BE CUT OFF AT A DEPTH OF AT LEAST 600mm BELOW THE ORIGINAL SURFACE.

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No	Revision	Drawn	Authorised	Date
B	DETAILED DESIGN	AG	BD	04 MAR
A	CONCEPT DESIGN	AG	BD	20 OCT

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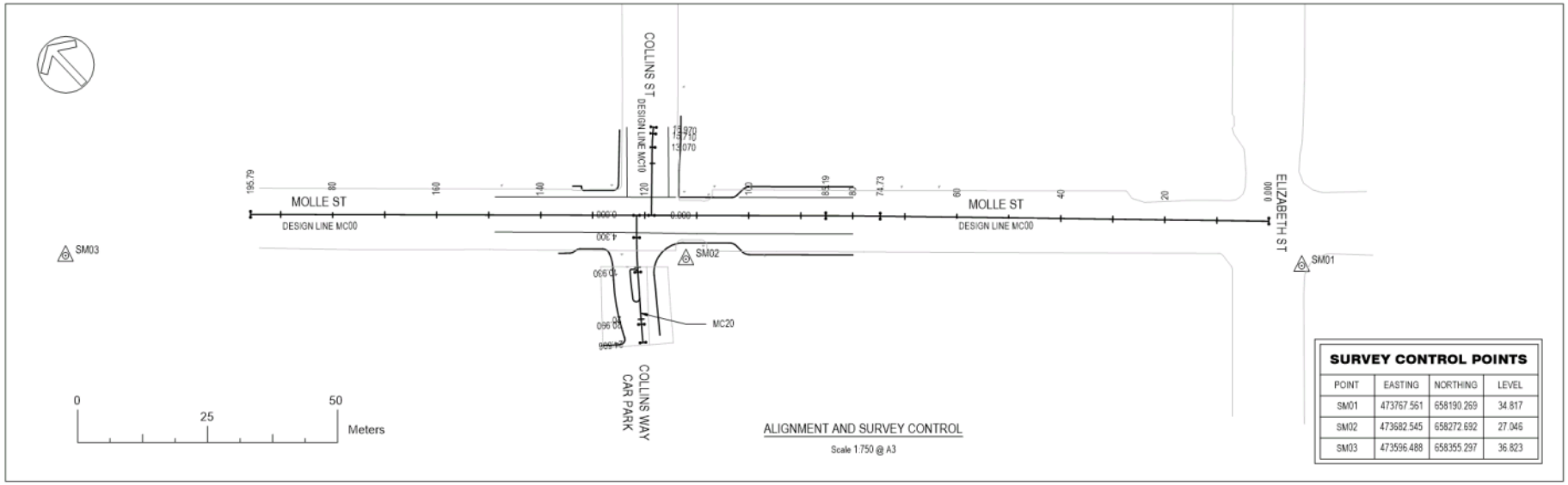
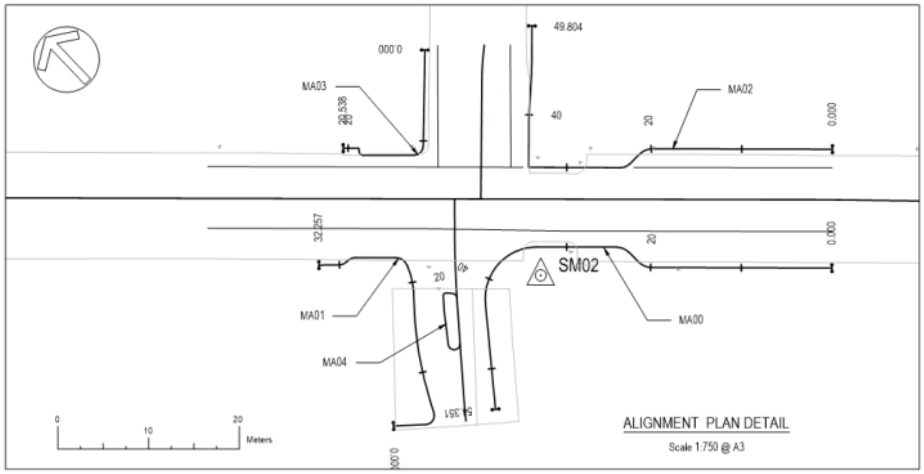
Client	HOBART CITY COUNCIL
Project	COLLINS STREET AND MOLLE STREET SIGNALISATION SITE 9487
Title	GENERAL NOTES
Drawing Number	HCC-MSIG-C1005
Revision	B ISSUED 04/03/2021



SURVEY CONTROL POINTS

POINT	EASTING	NORTHING	LEVEL
SM01	473767.561	658190.269	34.817
SM02	473682.545	658272.692	27.046
SM03	473596.488	658355.297	36.823



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No	Revision	Drawn	Authorised	Date
B	DETAILED DESIGN	AG	BD	04 MAR
A	CONCEPT DESIGN	AG	BD	20 OCT

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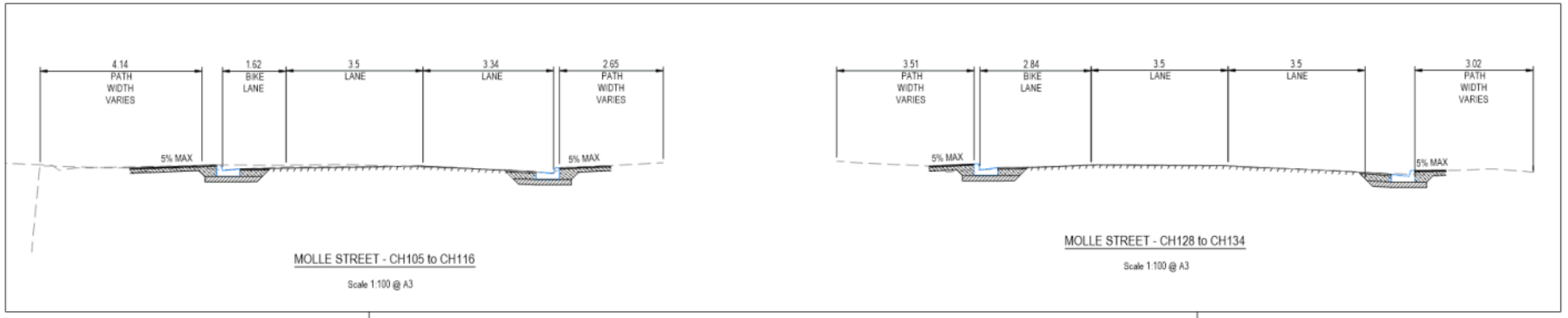
Client	HOBART CITY COUNCIL
Project	COLLINS STREET AND MOLLE STREET SIGNALISATION SITE 9487
Title	TYPICAL SECTIONS
Drawing Number	HCC-MSIG-C1010
Revision	B ISSUED 04/03/2021

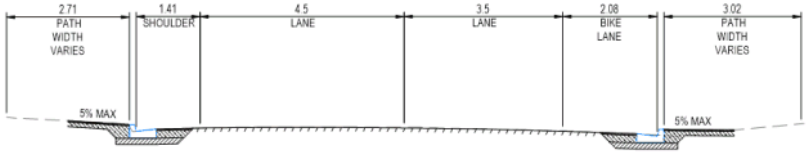


MOLLE STREET - CH105 to CH116

Scale 1:100 @ A3

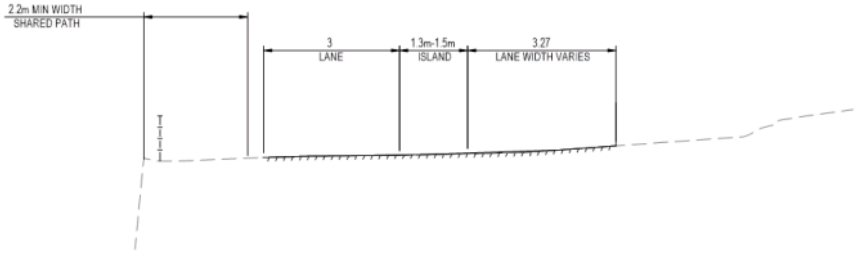
MOLLE STREET - CH128 to CH134

Scale 1:100 @ A3



COLLINS STREET

Scale 1:100 @ A3



COLLINS WAY CARPARK

Scale 1:100 @ A3

NOTE

1. ASPHALT THICKNESS MATCH TO EXISTING - MIN 35mm

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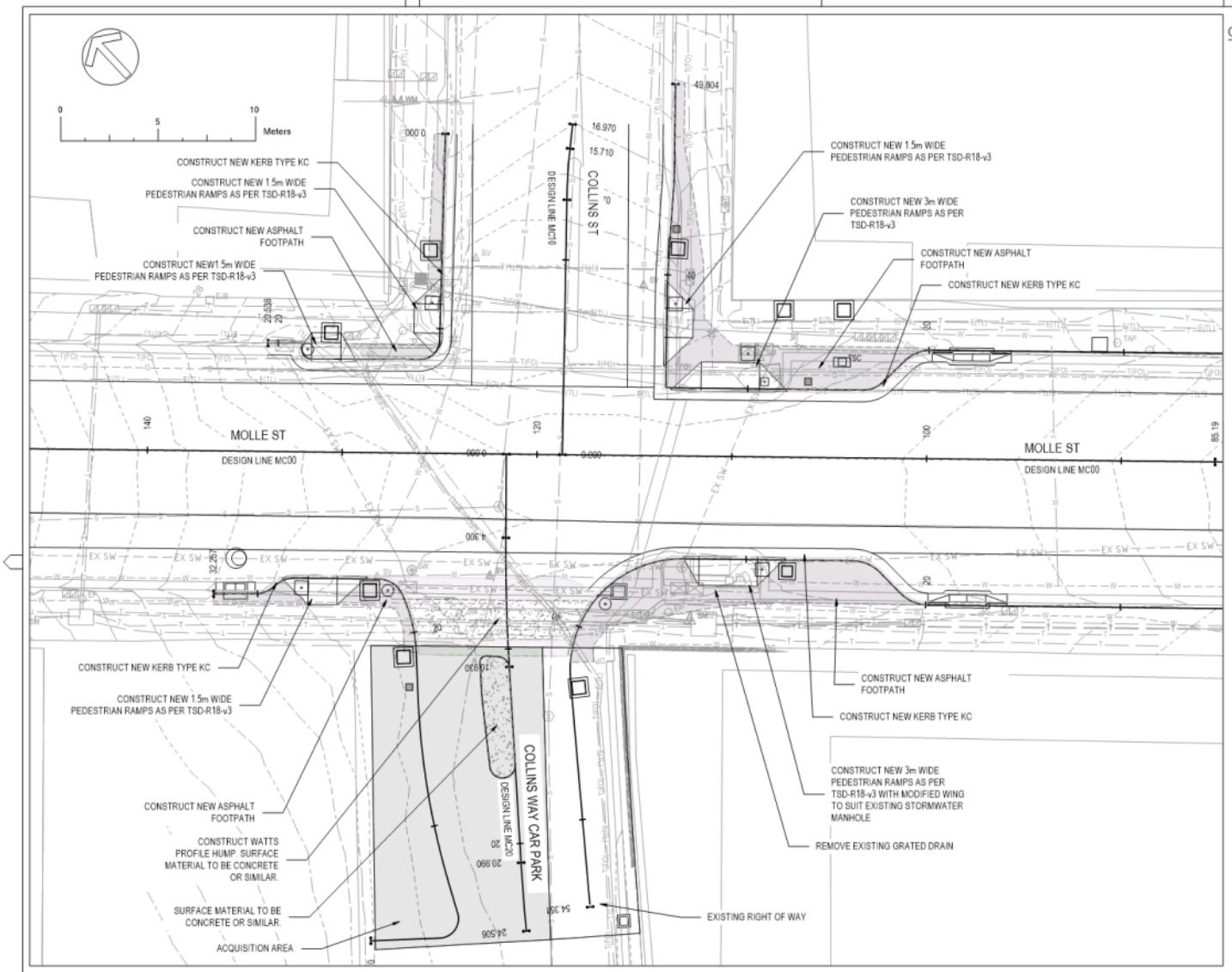
Client	HOBART CITY COUNCIL
Project	COLLINS STREET AND MOLLE STREET SIGNALISATION SITE 9487
Title	TYPICAL SECTIONS
Drawing Number	HCC-MSIG-C1020
Revision	B ISSUED 04/03/2021



GENERAL ARRANGEMENT

Scale 1:200 @ A3

GENERAL NOTES

1. ALL WORKS TO BE IN ACCORDANCE WITH THESE DRAWINGS & THE PROJECT SPECIFICATION UNLESS NOTED ELSEWHERE OR DIRECTED IN WRITING BY THE SUPERINTENDENT.
2. BASE SURVEY INFORMATION INCLUDING EXISTING SERVICES INFORMATION PROVIDED BY ANDY HAMILTON SURVEYORS
3. NEW WORKS TO BE SETOUT BY A LICENSED SURVEYOR.
4. CONFIRM THE LOCATION, EXTENT AND DEPTH OF ALL ABOVE AND BELOW GROUND SERVICES PRIOR TO COMMENCEMENT OF WORKS. ALL SERVICES MAY NOT BE SHOWN ON THE DESIGN DRAWINGS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND LOCATE ALL SERVICES. EXISTING SERVICES TO REMAIN IN SERVICE AND TO BE PROTECTED FROM DAMAGE FOR DURATION OF WORKS.
5. ALL COSTS FOR DAMAGE TO EXISTING SERVICES SHALL BE BORNE BY THE CONTRACTOR. REFER ANY CONFLICT BETWEEN NEW WORKS AND EXISTING SERVICES TO THE SUPERINTENDENT.
6. STRIP TOPSOIL FROM ENTIRE WORKS AREA. TOPSOIL IS TO BE STOCKPILED ON SITE WHERE DIRECTED BY SUPERINTENDENT. CLEARING TO BE CONFINED TO THE AREA REQUIRED TO EXECUTE THE WORKS UNDER THE CONTRACT ONLY.
7. TOPS OF MANHOLES, PITS & SERVICE UTILITY COVERS ARE TO BE ADJUSTED TO MATCH ADJACENT FINISHED SURFACE LEVELS AND GRADES.
8. DO NOT OBTAIN DIMENSIONS BY SCALING FROM THE DRAWINGS. UNLESS OTHERWISE NOTED. ALL DETAIL DIMENSIONS ARE IN MILLIMETRES, ALL CHAINAGES ARE IN METRES.
9. VERIFY SETTING OUT DIMENSIONS SHOWN ON THE DRAWINGS BEFORE CONSTRUCTION AND FABRICATION IS COMMENCED.
10. KERB RAMPS TO BE DETAILED TO COUNCIL SATISFACTION

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A	CONCEPT DESIGN	AG	BD	20 OCT

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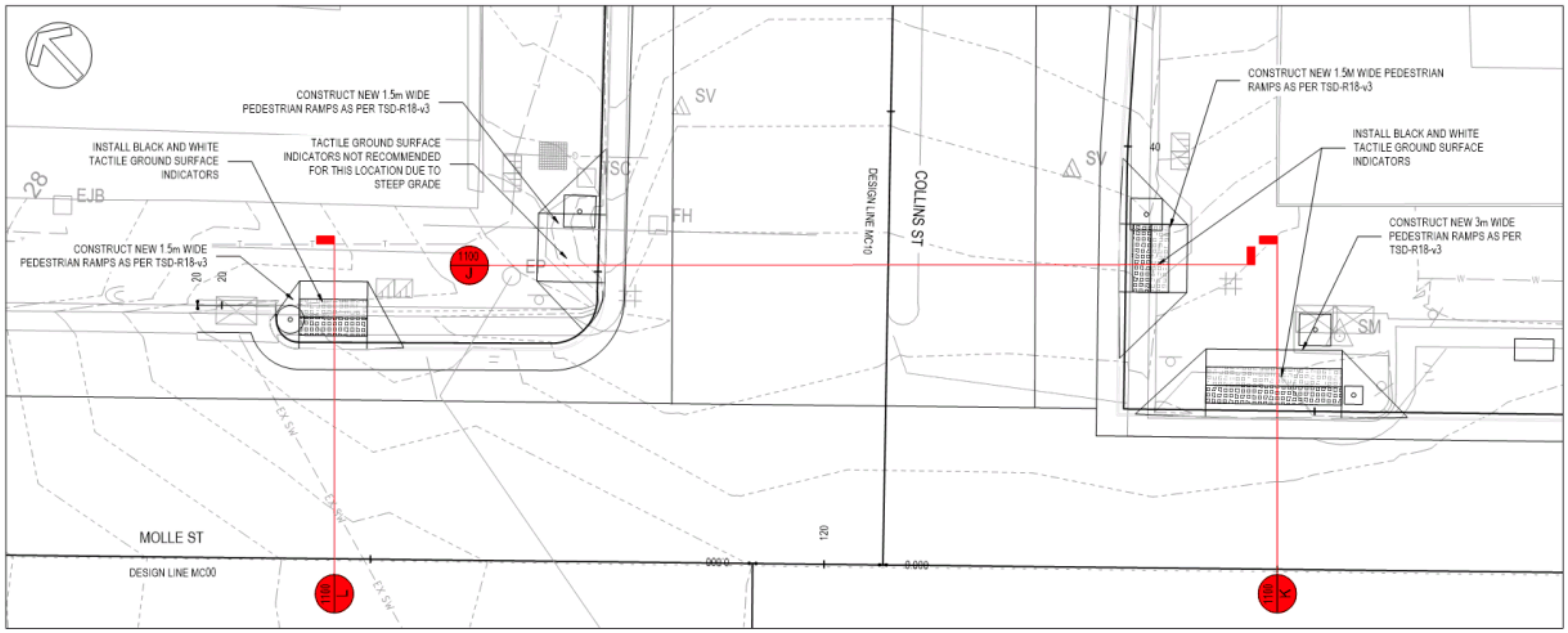
Client	HOBART CITY COUNCIL
Project	COLLINS STREET AND MOLLE STREET SIGNALISATION SITE 9487
Title	GENERAL ARRANGEMENT
Drawing Number	HCC-MSIG-C1100
Revision	B ISSUED 04/03/2021



PEDESTRIAN RAMP DETAIL
Scale 1:100 @ A3

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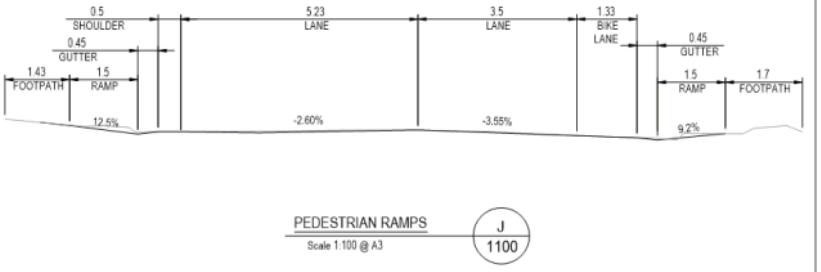
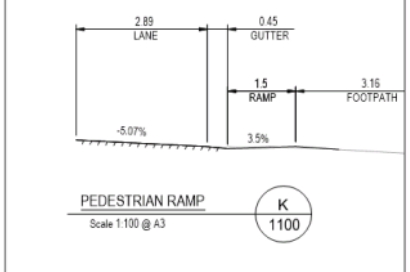
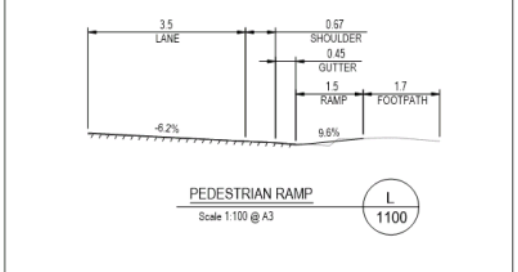


PEDESTRIAN RAMPS
Scale 1:100 @ A3
J
1100



PEDESTRIAN RAMP
Scale 1:100 @ A3
K
1100



PEDESTRIAN RAMP
Scale 1:100 @ A3
L
1100

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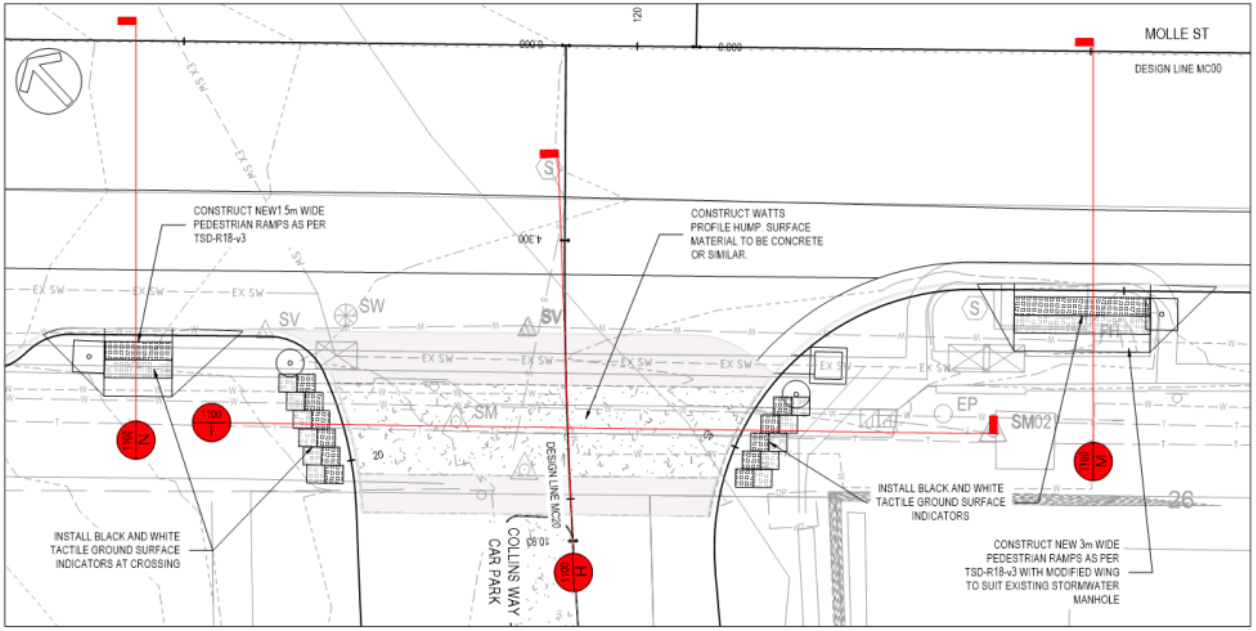
Client	HOBART CITY COUNCIL
Project	COLLINS STREET AND MOLLE STREET SIGNALISATION SITE 9487
Title	PEDESTRIAN RAMP DETAIL DWG 1 OF 2
Drawing Number	HCC-MSIG-C1101
Revision	B ISSUED 04/03/2021



0 5 10 Meters

PEDESTRIAN RAMP DETAIL
Scale 1:100 @ A3

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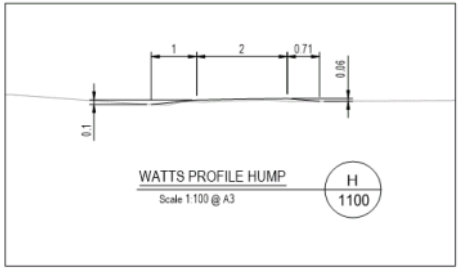
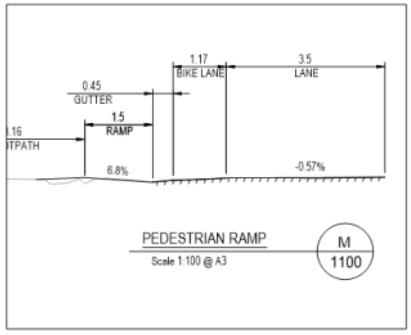
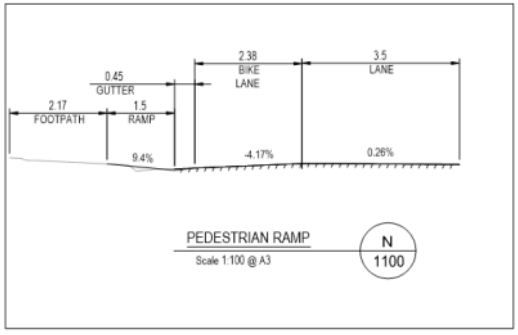


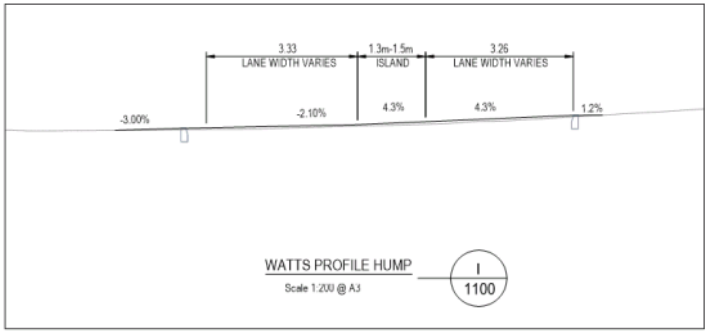
WATTS PROFILE HUMP
Scale 1:100 @ A3
H 1100



PEDESTRIAN RAMP
Scale 1:100 @ A3
M 1100



PEDESTRIAN RAMP
Scale 1:100 @ A3
N 1100



WATTS PROFILE HUMP
Scale 1:200 @ A3
I 1100

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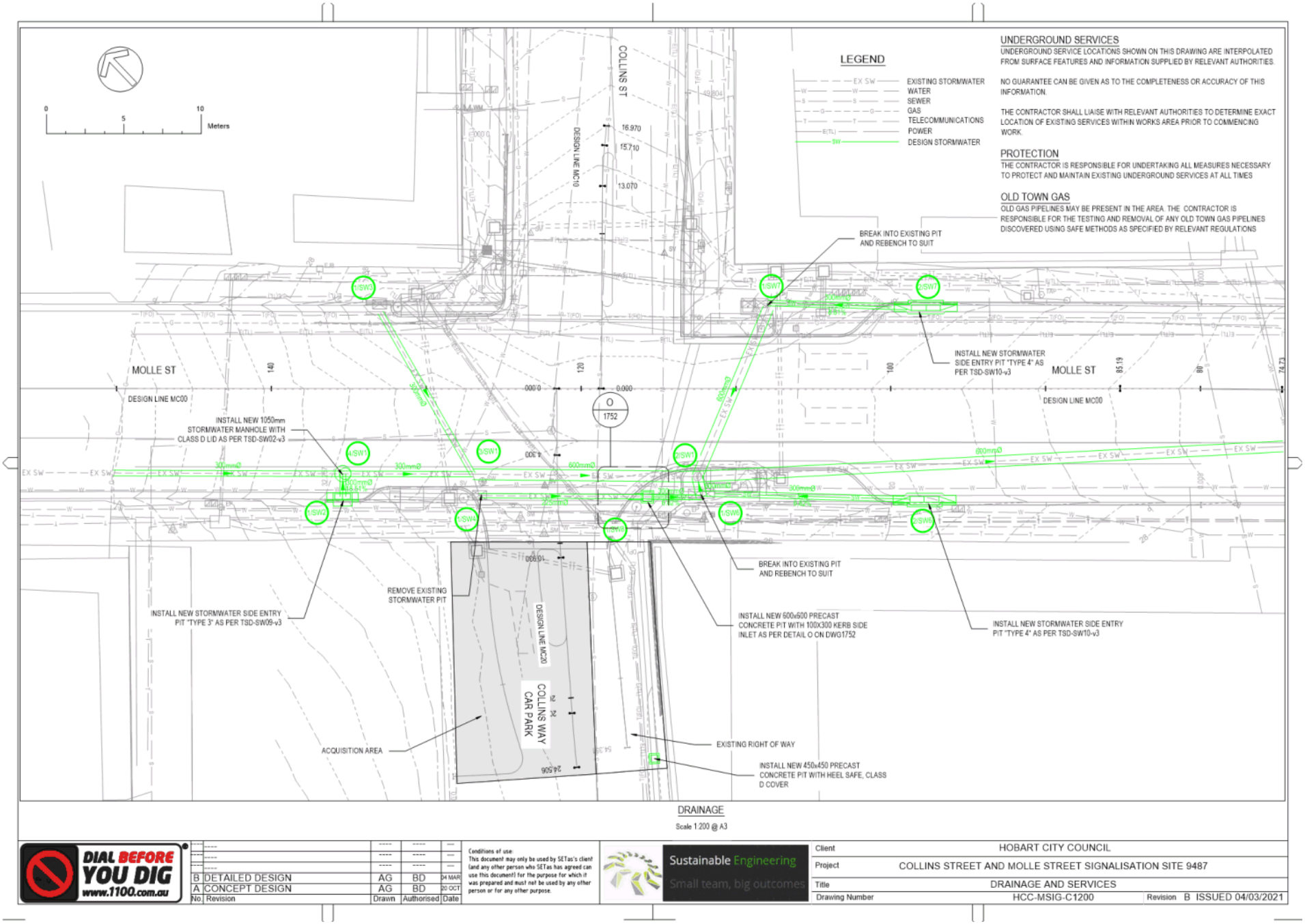
Client	HOBART CITY COUNCIL
Project	COLLINS STREET AND MOLLE STREET SIGNALISATION SITE 9487
Title	PEDESTRIAN RAMP DETAIL DWG 2 OF 2
Drawing Number	HCC-MSIG-C1102
Revision	B ISSUED 04/03/2021


LEGEND
EX SW EXISTING STORMWATER
W WATER
S SEWER
G GAS
T TELECOMMUNICATIONS
E(TL) POWER
SW DESIGN STORMWATER
UNDERGROUND SERVICES
UNDERGROUND SERVICE LOCATIONS SHOWN ON THIS DRAWING ARE INTERPOLATED FROM SURFACE FEATURES AND INFORMATION SUPPLIED BY RELEVANT AUTHORITIES.
NO GUARANTEE CAN BE GIVEN AS TO THE COMPLETENESS OR ACCURACY OF THIS INFORMATION.
THE CONTRACTOR SHALL LIAISE WITH RELEVANT AUTHORITIES TO DETERMINE EXACT LOCATION OF EXISTING SERVICES WITHIN WORKS AREA PRIOR TO COMMENCING WORK.
PROTECTION
THE CONTRACTOR IS RESPONSIBLE FOR UNDERTAKING ALL MEASURES NECESSARY TO PROTECT AND MAINTAIN EXISTING UNDERGROUND SERVICES AT ALL TIMES
OLD TOWN GAS
OLD GAS PIPELINES MAY BE PRESENT IN THE AREA. THE CONTRACTOR IS RESPONSIBLE FOR THE TESTING AND REMOVAL OF ANY OLD TOWN GAS PIPELINES DISCOVERED USING SAFE METHODS AS SPECIFIED BY RELEVANT REGULATIONS
0 5 10 Meters
COLLINS ST
DESIGN LINE MC10
16.970
15.710
13.070
MOLLE ST
DESIGN LINE MC00
BREAK INTO EXISTING PIT AND REBENCH TO SUIT
INSTALL NEW STORMWATER SIDE ENTRY PIT "TYPE 4" AS PER TSD-SW10-v3
INSTALL NEW 1050mm STORMWATER MANHOLE WITH CLASS D LID AS PER TSD-SW02-v3
REMOVE EXISTING STORMWATER PIT
INSTALL NEW STORMWATER SIDE ENTRY PIT "TYPE 3" AS PER TSD-SW09-v3
INSTALL NEW 600x600 PRECAST CONCRETE PIT WITH 100X300 KERB SIDE INLET AS PER DETAIL O ON DWG1752
DESIGN LINE MC20
COLLINS WAY CAR PARK
ACQUISITION AREA
EXISTING RIGHT OF WAY
INSTALL NEW 450x450 PRECAST CONCRETE PIT WITH HEEL SAFE, CLASS D COVER
DRAINAGE
Scale 1:200 @ A3
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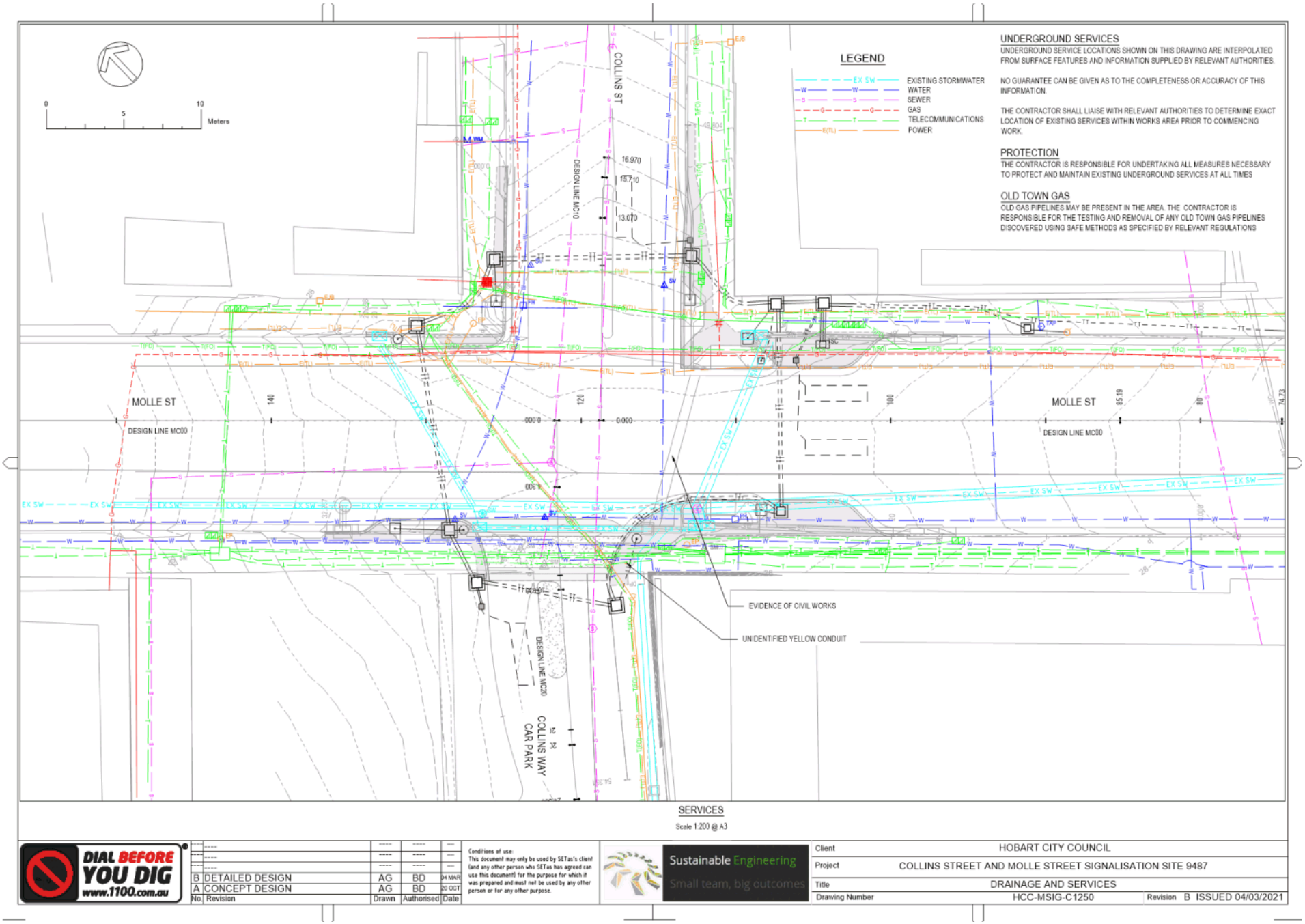
Client HOBART CITY COUNCIL
Project COLLINS STREET AND MOLLE STREET SIGNALISATION SITE 9487
Title DRAINAGE AND SERVICES
Drawing Number HCC-MSIG-C1200
Revision B ISSUED 04/03/2021


LEGEND
EX SW EXISTING STORMWATER
W WATER
S SEWER
G GAS
T TELECOMMUNICATIONS
E(TL) POWER
UNDERGROUND SERVICES
UNDERGROUND SERVICE LOCATIONS SHOWN ON THIS DRAWING ARE INTERPOLATED FROM SURFACE FEATURES AND INFORMATION SUPPLIED BY RELEVANT AUTHORITIES.
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0
5
10
Meters
COLLINS ST
DESIGN LINE MC10
MOLLE ST
DESIGN LINE MC00
MOLLE ST
DESIGN LINE MC00
EVIDENCE OF CIVIL WORKS
UNIDENTIFIED YELLOW CONDUIT
DESIGN LINE MC20
COLLINS WAY CAR PARK
SERVICES
Scale 1:200 @ A3
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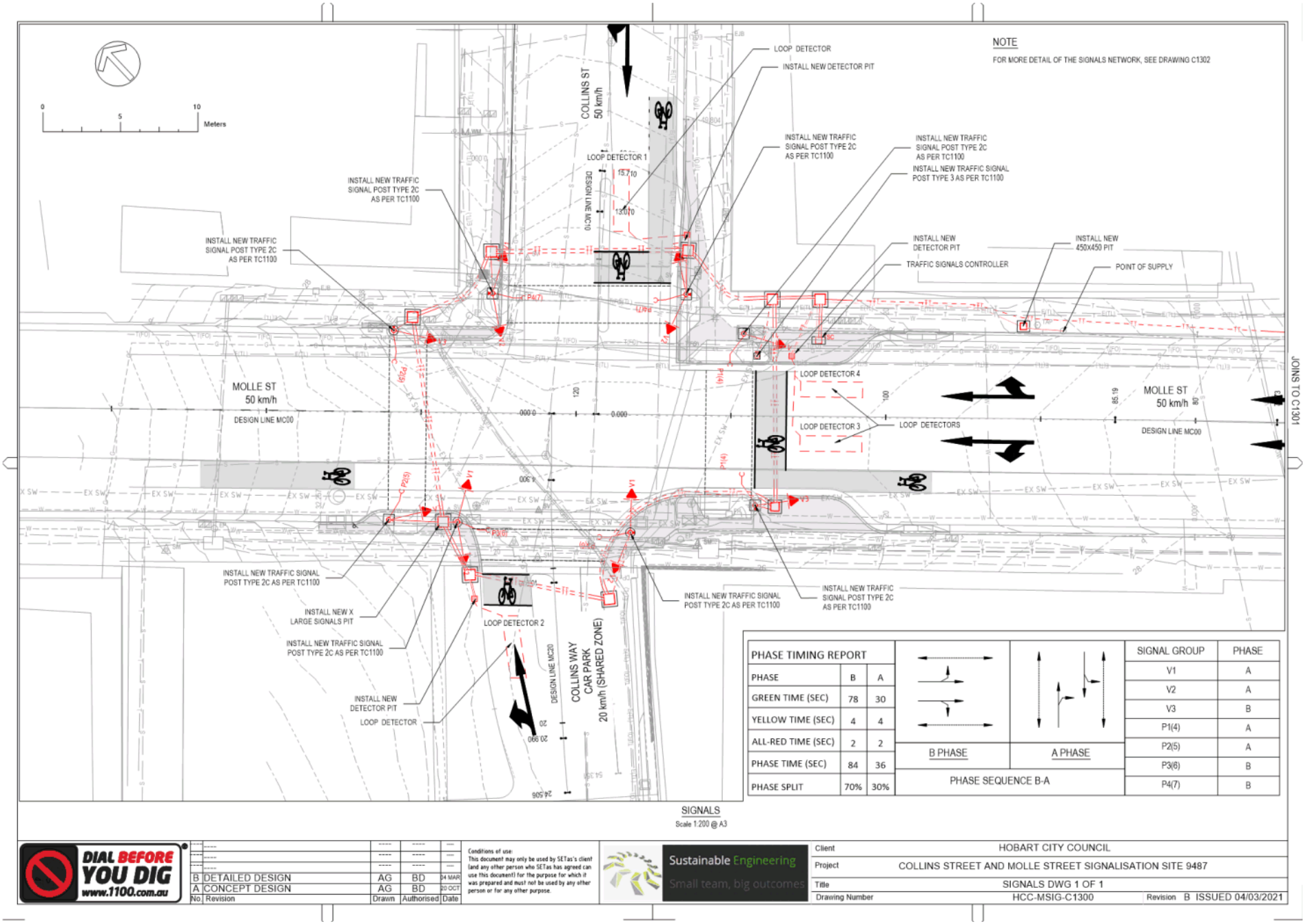
Client HOBART CITY COUNCIL
Project COLLINS STREET AND MOLLE STREET SIGNALISATION SITE 9487
Title DRAINAGE AND SERVICES
Drawing Number HCC-MSIG-C1250
Revision B ISSUED 04/03/2021



PHASE TIMING REPORT		
PHASE	B	A
GREEN TIME (SEC)	78	30
YELLOW TIME (SEC)	4	4
ALL-RED TIME (SEC)	2	2
PHASE TIME (SEC)	84	36
PHASE SPLIT	70%	30%

B PHASE | A PHASE

PHASE SEQUENCE B-A

SIGNAL GROUP	PHASE
V1	A
V2	A
V3	B
P1(4)	A
P2(5)	A
P3(6)	B
P4(7)	B

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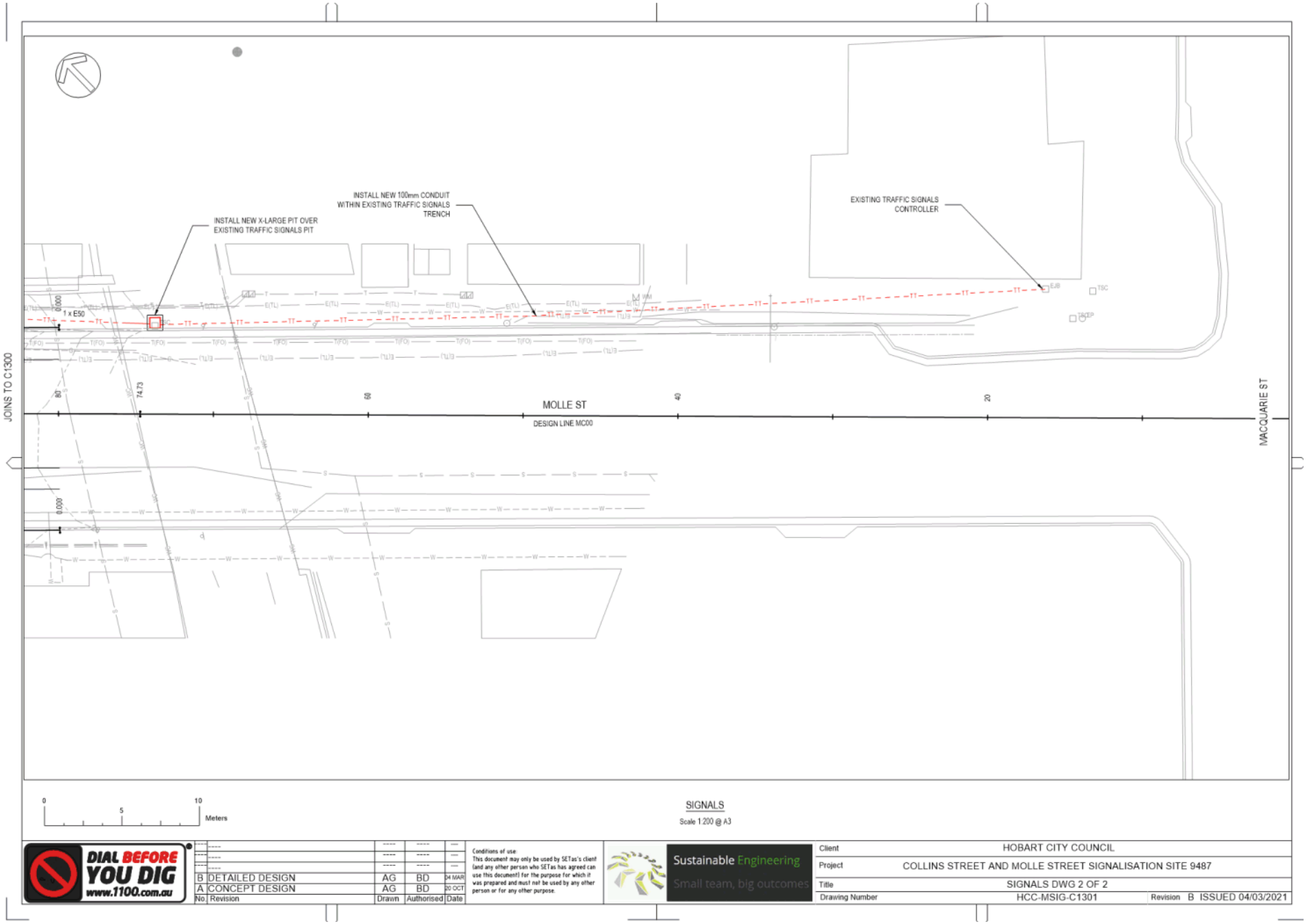
Client	HOBART CITY COUNCIL
Project	COLLINS STREET AND MOLLE STREET SIGNALISATION SITE 9487
Title	SIGNALS DWG 1 OF 1
Drawing Number	HCC-MSIG-C1300
Revision	B ISSUED 04/03/2021


INSTALL NEW 100mm CONDUIT WITHIN EXISTING TRAFFIC SIGNALS TRENCH
INSTALL NEW X-LARGE PIT OVER EXISTING TRAFFIC SIGNALS PIT
EXISTING TRAFFIC SIGNALS CONTROLLER
1 x E50
JOINS TO C1300
MOLLE ST
DESIGN LINE MC00
MACQUARIE ST
80
74.73
60
40
20
0.000
0
5
10
Meters
SIGNALS
Scale 1:200 @ A3
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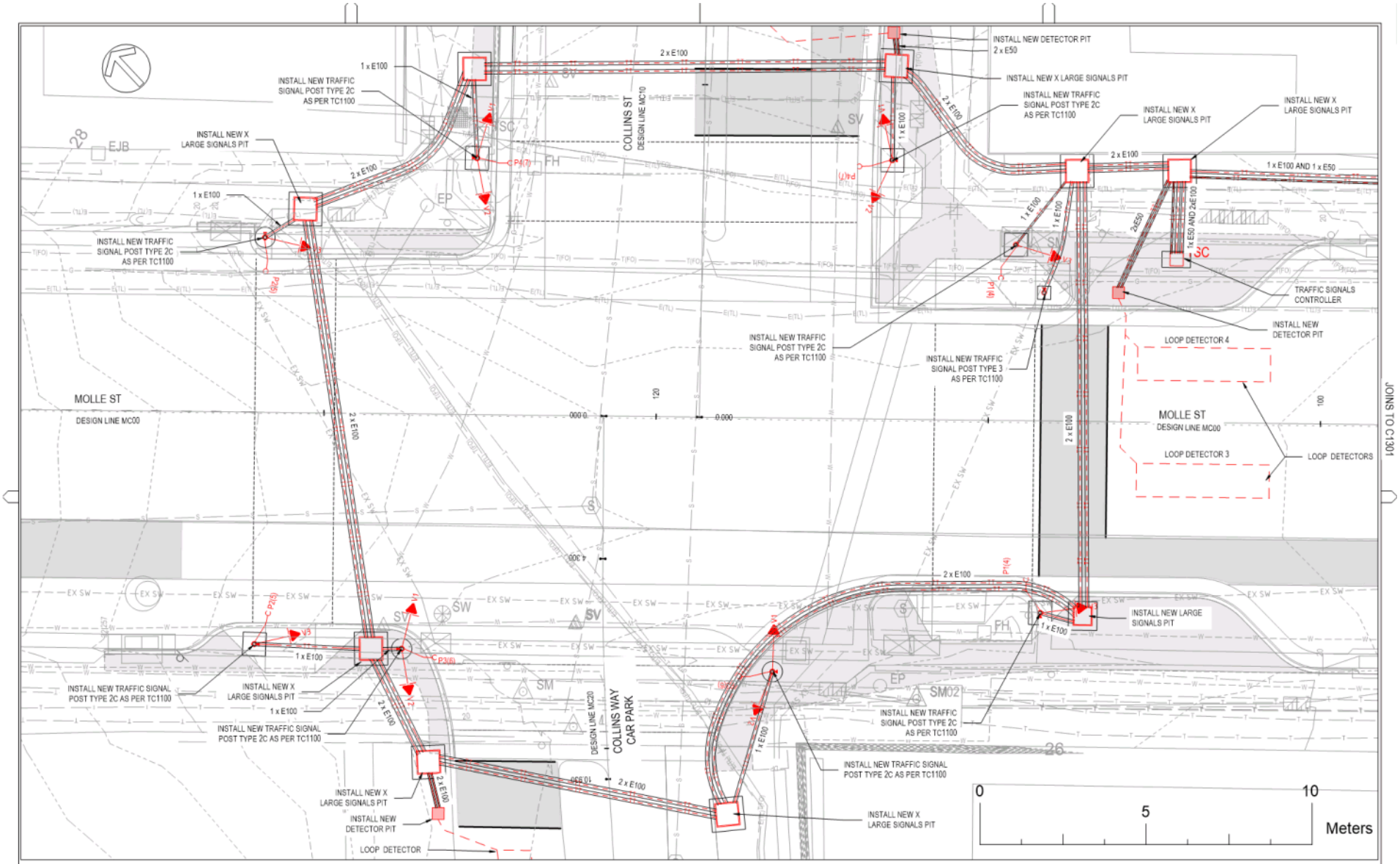
Client HOBART CITY COUNCIL
Project COLLINS STREET AND MOLLE STREET SIGNALISATION SITE 9487
Title SIGNALS DWG 2 OF 2
Drawing Number HCC-MSIG-C1301
Revision B ISSUED 04/03/2021



SIGNALS
Scale 1:100 @ A3

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B	DETAILED DESIGN	AG	BD	04 MAR
A	CONCEPT DESIGN	AG	BD	20 OCT

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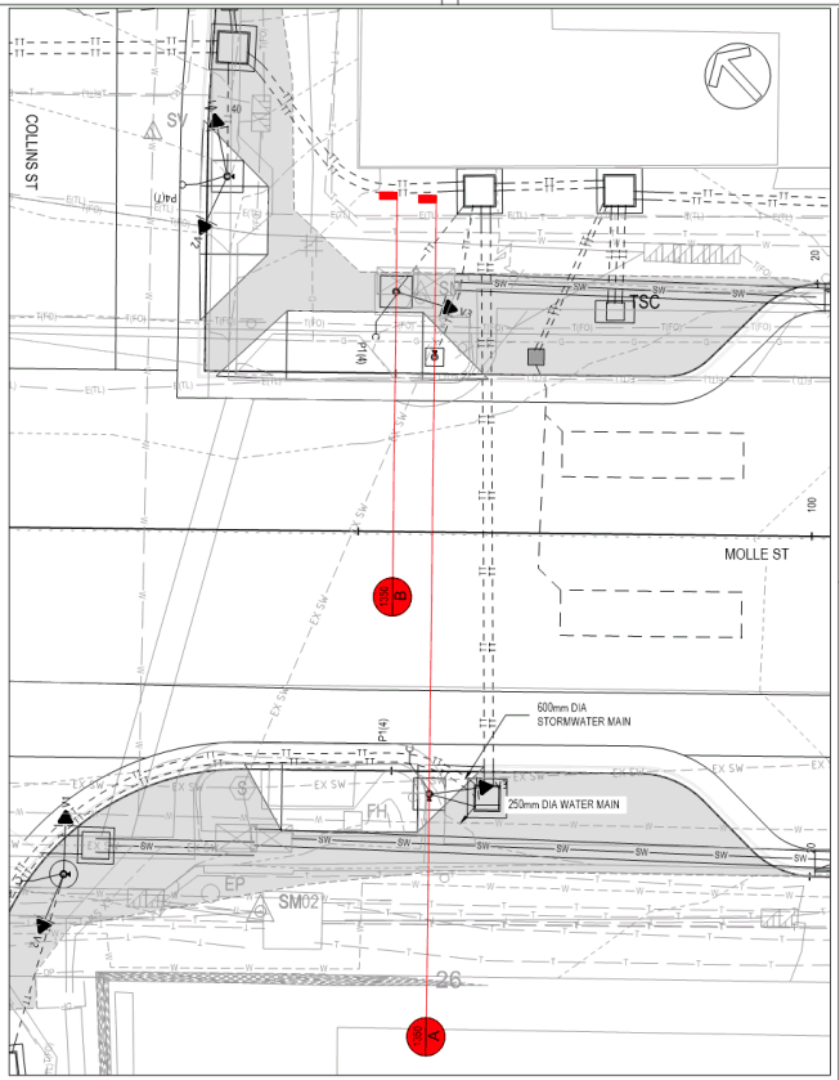
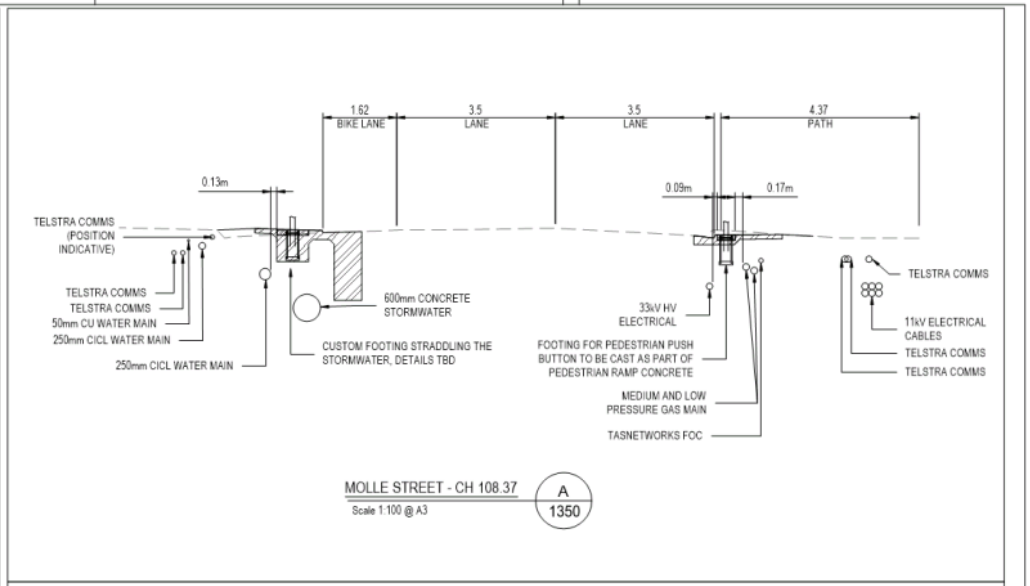
Client	HOBART CITY COUNCIL
Project	COLLINS STREET AND MOLLE STREET SIGNALISATION SITE 9487
Title	SIGNALS DETAIL
Drawing Number	HCC-MSIG-C1302
Revision	B ISSUED 04/03/2021

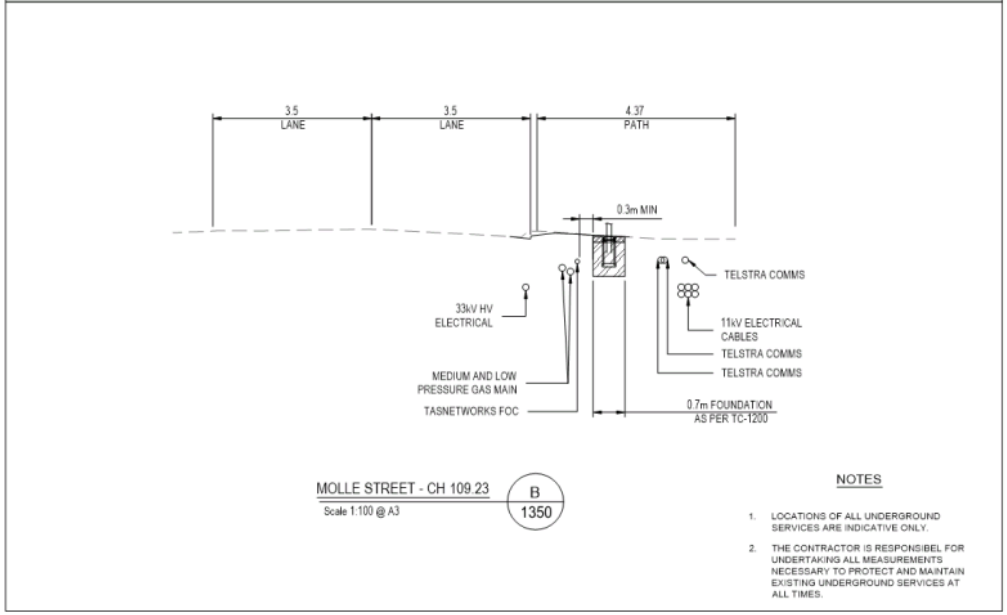


SIGNALS FOUNDATION
Scale 1:100 @ A3

0 5 10 Meters



MOLLE STREET - CH 108.37
Scale 1:100 @ A3
A
1350



MOLLE STREET - CH 109.23
Scale 1:100 @ A3
B
1350

NOTES

1. LOCATIONS OF ALL UNDERGROUND SERVICES ARE INDICATIVE ONLY.
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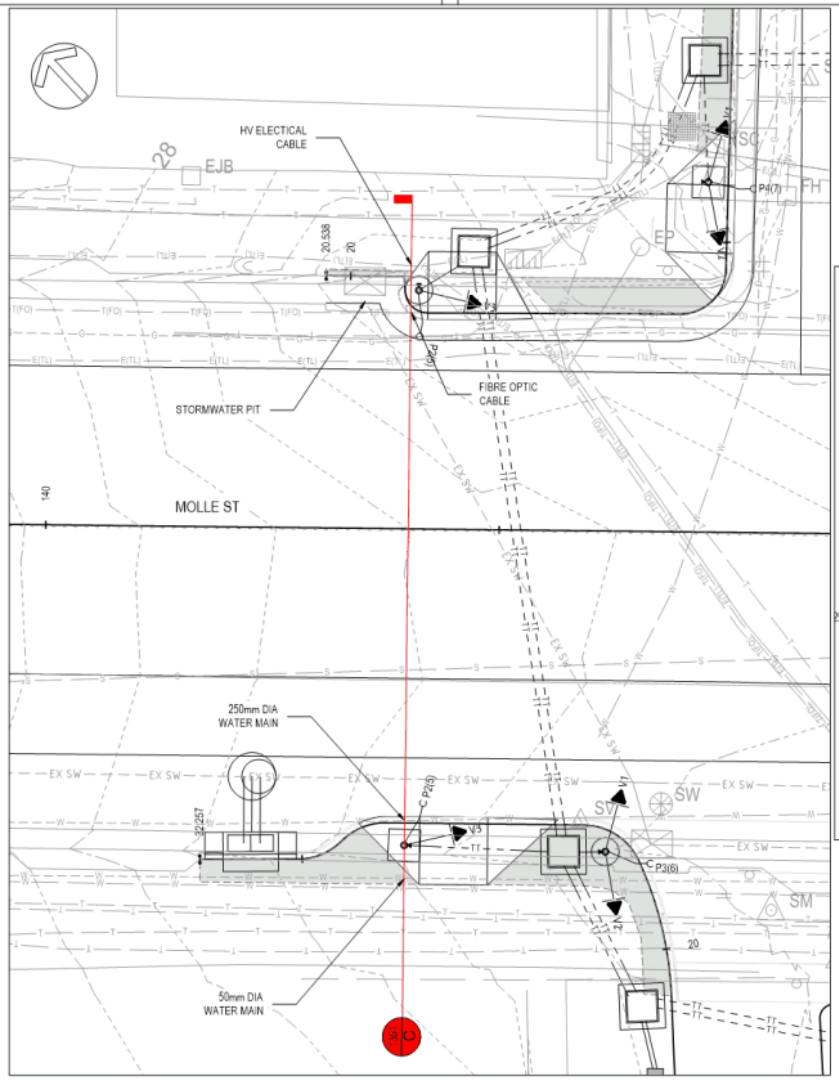
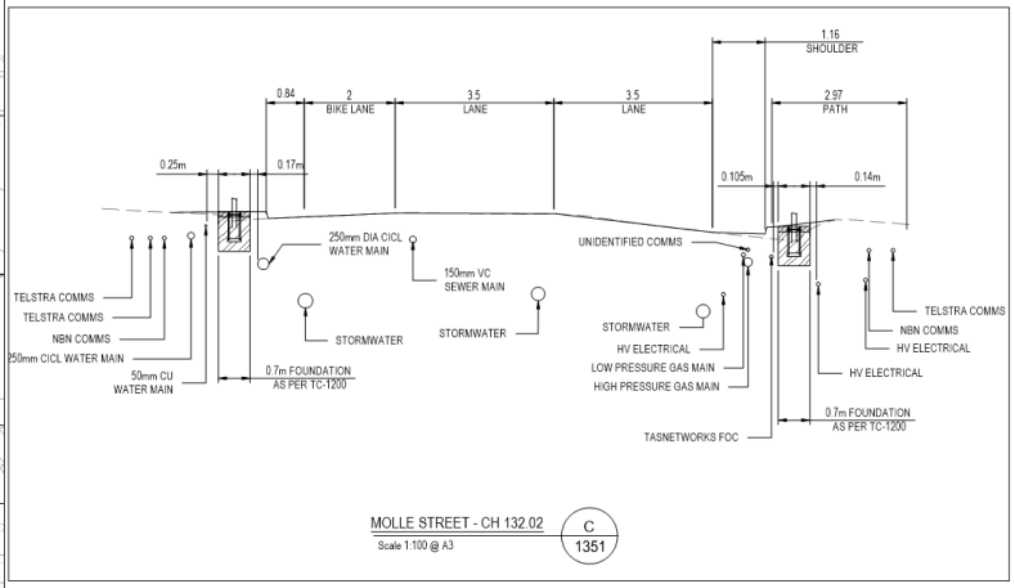
Client	HOBART CITY COUNCIL
Project	COLLINS STREET AND MOLLE STREET SIGNALISATION SITE 9487
Title	SIGNALS FOUNDATIONS DWG 1 OF 4
Drawing Number	HCC-MSIG-C1350
Revision	B ISSUED 04/03/2021





MOLLE STREET - CH 132.02
Scale 1:100 @ A3

C
1351

SIGNALS FOUNDATION
Scale 1:100 @ A3

0 5 10 Meters

NOTES

1. LOCATIONS OF ALL UNDERGROUND SERVICES ARE INDICATIVE ONLY.
2. THE CONTRACTOR IS RESPONSIBEL FOR UNDERTAKING ALL MEASUREMENTS NECESSARY TO PROTECT AND MAINTAIN EXISTING UNDERGROUND SERVICES AT ALL TIMES.

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No	Revision	Drawn	Authorised	Date
B	DETAILED DESIGN	AG	BD	04 MAR
A	CONCEPT DESIGN	AG	BD	20 OCT

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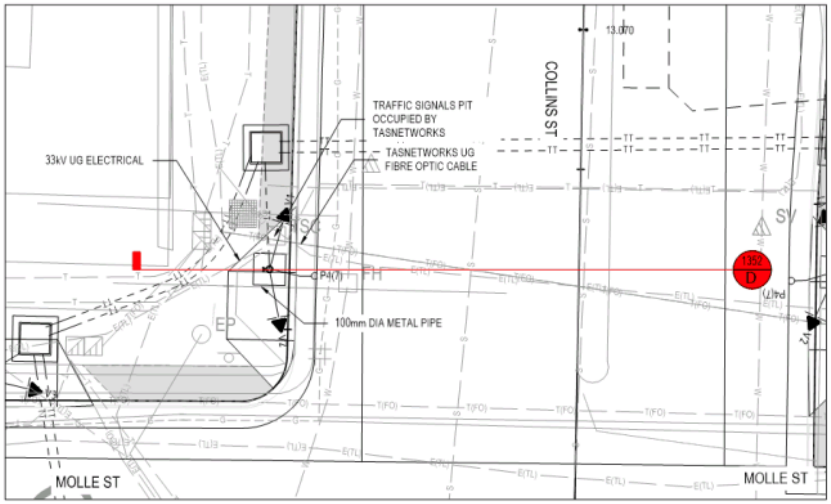
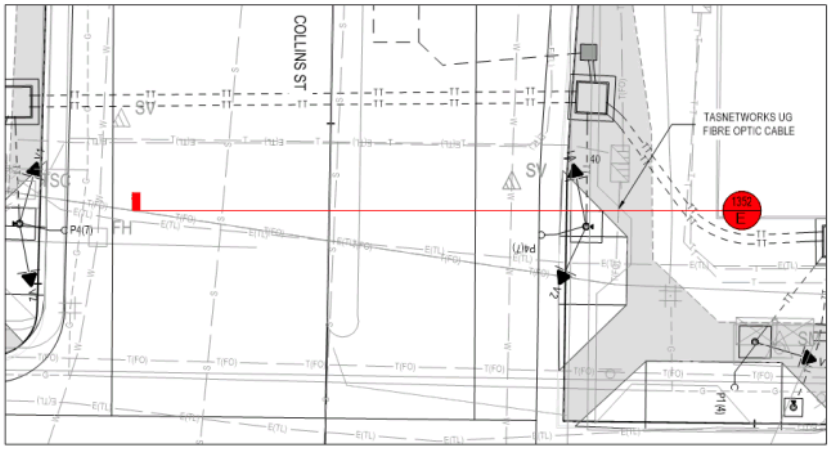
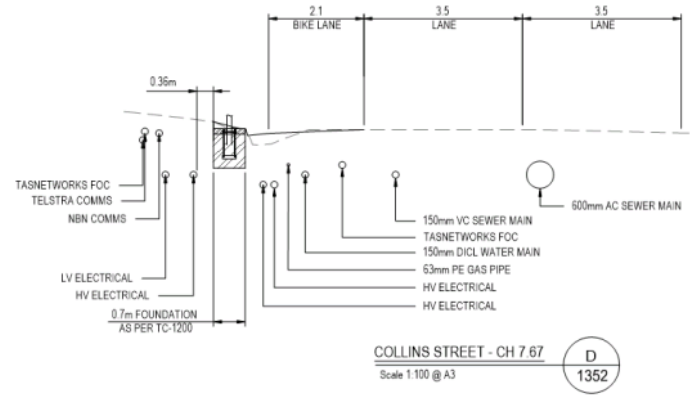
Client	HOBART CITY COUNCIL
Project	COLLINS STREET AND MOLLE STREET SIGNALISATION SITE 9487
Title	SIGNALS FOUNDATIONS DWG 2 OF 4
Drawing Number	HCC-MSIG-C1351
Revision	B ISSUED 04/03/2021



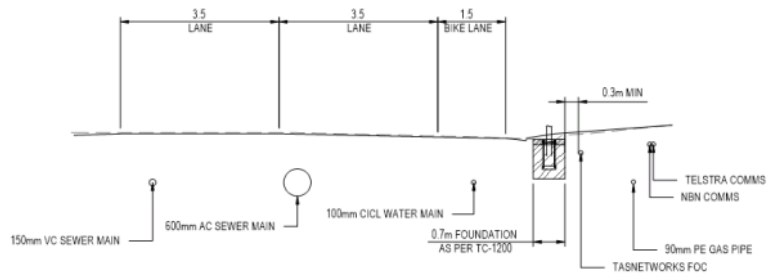


SIGNALS FOUNDATION
Scale 1:100 @ A3

0 5 10 Meters



COLLINS STREET - CH 7.67
Scale 1:100 @ A3
D 1352



COLLINS STREET CH 7.83
Scale 1:100 @ A3
E 1352

NOTES

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No	Revision	Drawn	Authorised	Date
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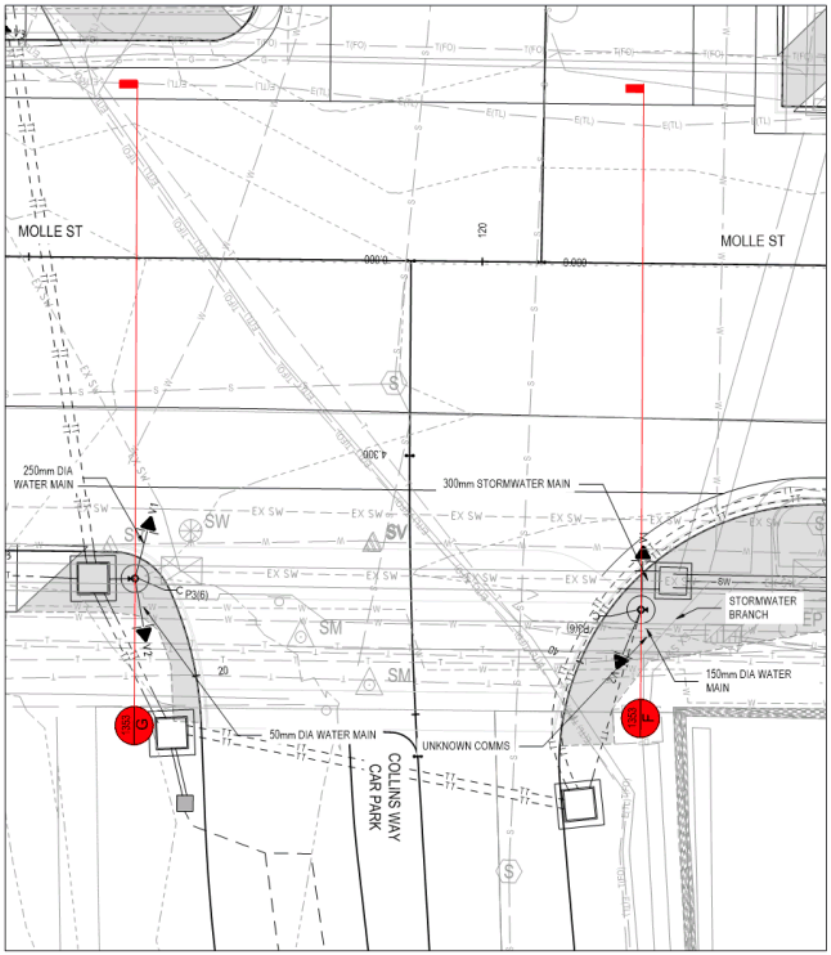
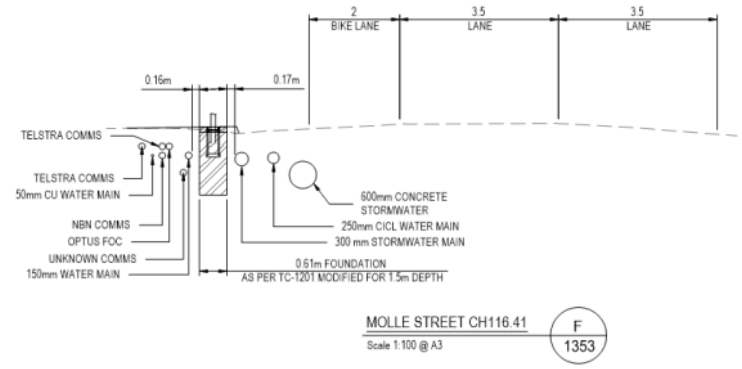
Client	HOBART CITY COUNCIL
Project	COLLINS STREET AND MOLLE STREET SIGNALISATION SITE 9487
Title	SIGNALS FOUNDATIONS DWG 3 OF 4
Drawing Number	HCC-MSIG-C1352
Revision	B ISSUED 04/03/2021

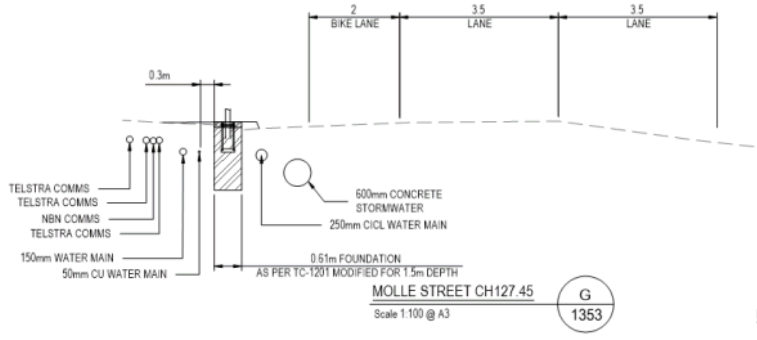


SIGNALS FOUNDATION
Scale 1:100 @ A3

0 5 10 Meters



MOLLE STREET CH116.41
Scale 1:100 @ A3
F 1353



MOLLE STREET CH127.45
Scale 1:100 @ A3
G 1353

NOTES

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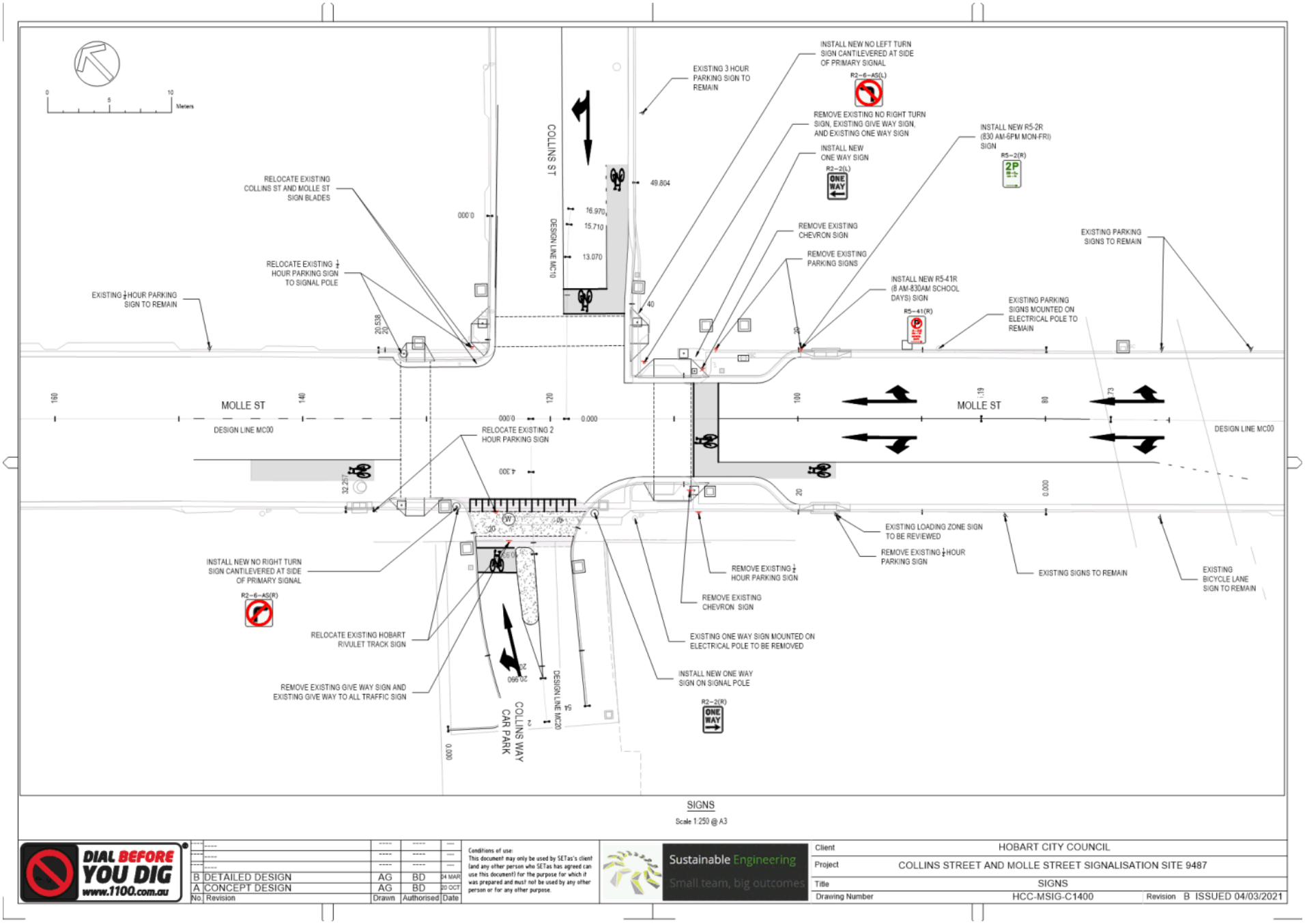
Client	HOBART CITY COUNCIL
Project	COLLINS STREET AND MOLLE STREET SIGNALISATION SITE 9487
Title	SIGNALS FOUNDATIONS DWG 4 OF 4
Drawing Number	HCC-MSIG-C1353
Revision	B ISSUED 04/03/2021



SIGNS

Scale 1:250 @ A3

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B	DETAILED DESIGN	AG	BD	04 MAR
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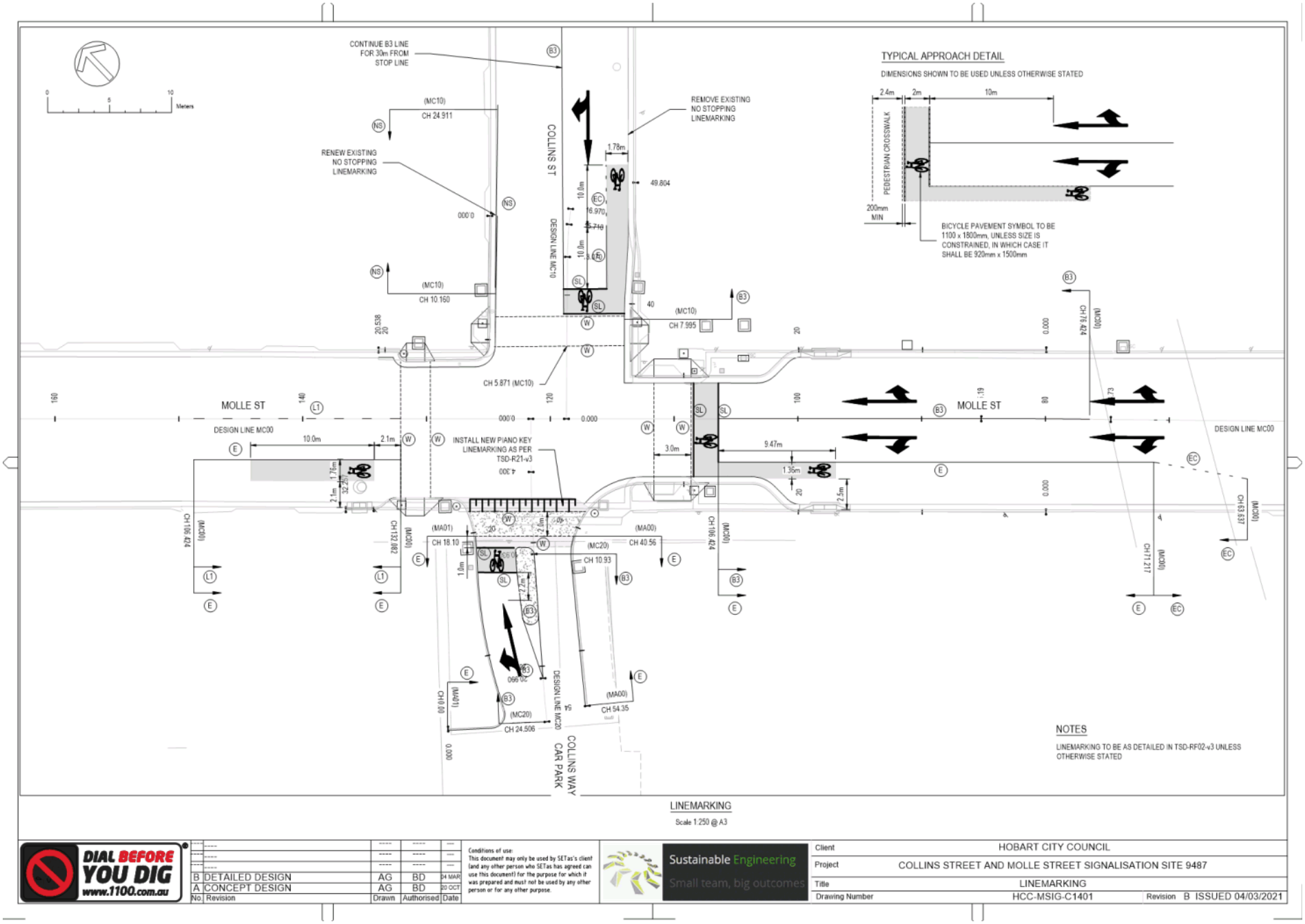
Client	HOBART CITY COUNCIL
Project	COLLINS STREET AND MOLLE STREET SIGNALISATION SITE 9487
Title	SIGNS
Drawing Number	HCC-MSIG-C1400
Revision	B ISSUED 04/03/2021



LINEMARKING
Scale 1:250 @ A3

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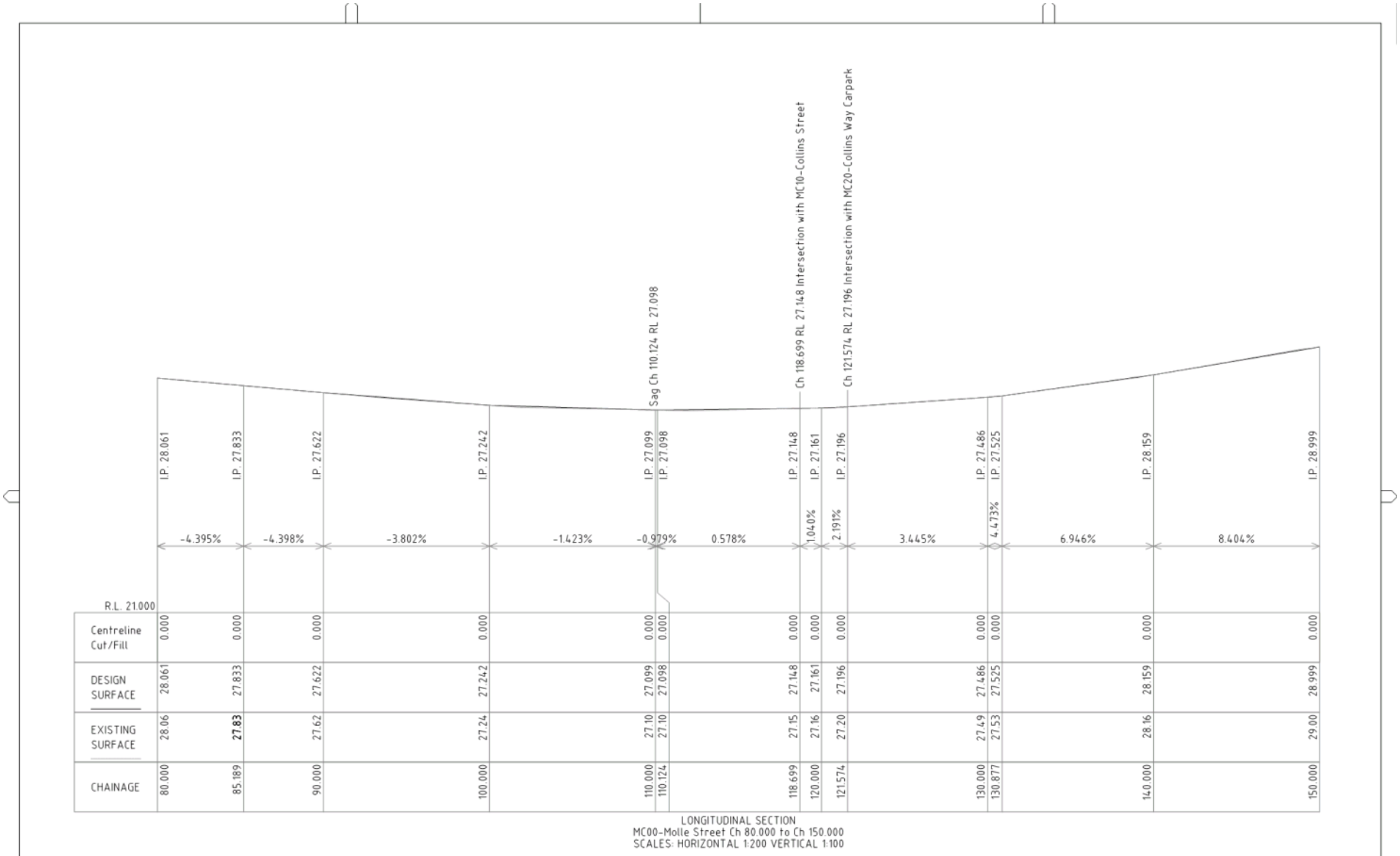
Client	HOBART CITY COUNCIL
Project	COLLINS STREET AND MOLLE STREET SIGNALISATION SITE 9487
Title	LINEMARKING
Drawing Number	HCC-MSIG-C1401
Revision	B ISSUED 04/03/2021



LONGITUDINAL SECTION
MC00-Molle Street Ch 80.000 to Ch 150.000
SCALES: HORIZONTAL 1:200 VERTICAL 1:100

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No	Revision	Drawn	Authorised	Date
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A	CONCEPT DESIGN	AG	BD	20 OCT

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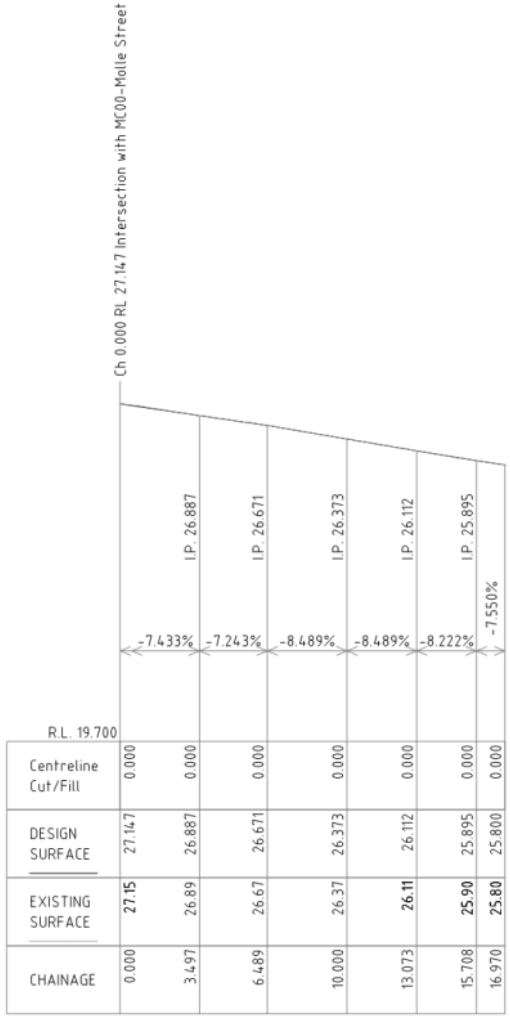
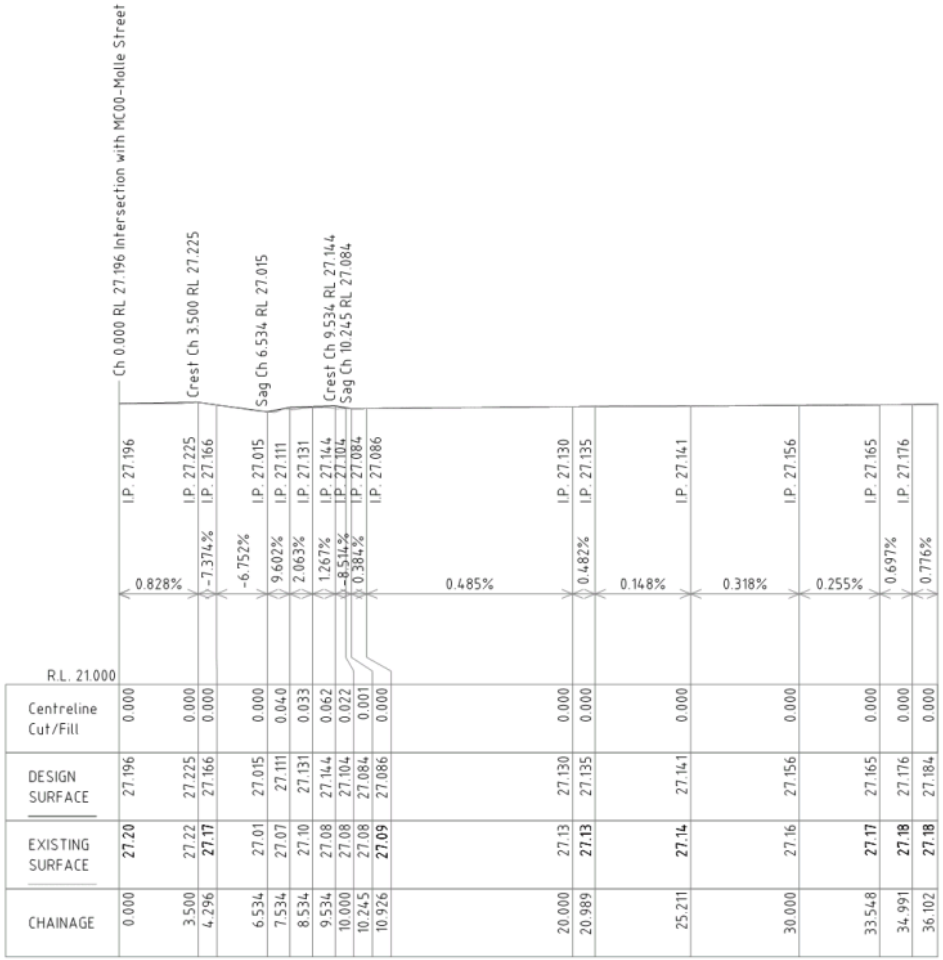
Client	HOBART CITY COUNCIL
Project	COLLINS STREET AND MOLLE STREET SIGNALISATION SITE 9487
Title	MOLLE STREET LONG SECTION
Drawing Number	HCC-MSIG-C1701
Revision	B ISSUED 04/03/2021



LONGITUDINAL SECTION
MC10-Collins Street Ch 0.000 to Ch 16.970
SCALES: HORIZONTAL 1:200 VERTICAL 1:100

MC10-Collins Street



LONGITUDINAL SECTION
MC20-Collins Way Carpark Ch 0.000 to Ch 36.102
SCALES: HORIZONTAL 1:200 VERTICAL 1:100

MC20-Collins Way Carpark

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No	Revision	Drawn	Authorised	Date
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B	DETAILED DESIGN	AG	BD	04 MAR
A	CONCEPT DESIGN	AG	BD	20 OCT

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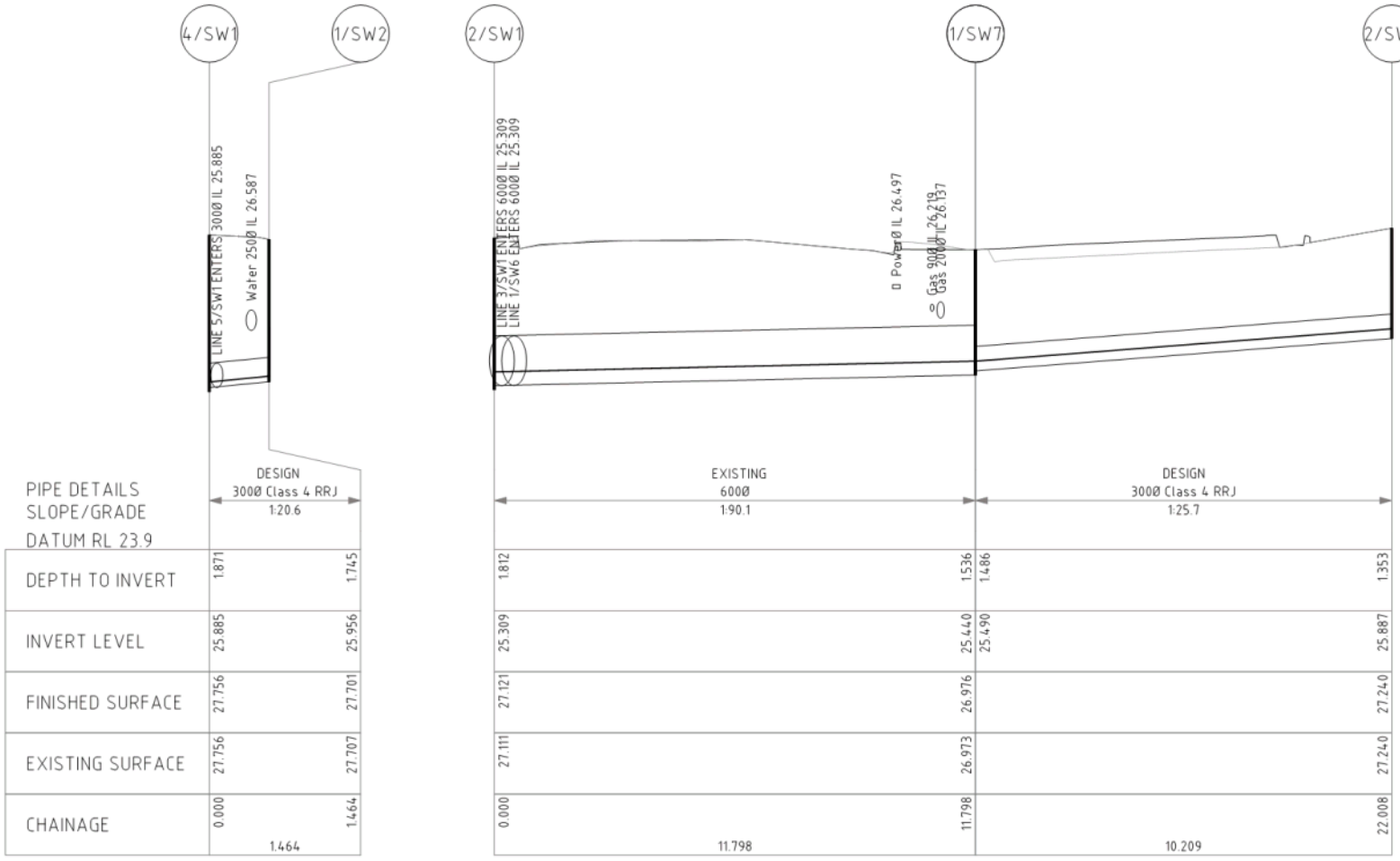
Client	HOBART CITY COUNCIL
Project	COLLINS STREET AND MOLLE STREET SIGNALISATION SITE 9487
Title	MOLLE STREET LONG SECTION
Drawing Number	HCC-MSIG-C1702
Revision	B ISSUED 04/03/2021



DRAINAGE LONGITUNDINAL SECTION FOR LINE
SCALES: HORIZONTAL 1:100 VERTICAL 1:50

DRAINAGE LONGITUNDINAL SECTION FOR LINE SW7
SCALES: HORIZONTAL 1:100 VERTICAL 1:50

STORMWATER LONG SECTIONS
H Scale 1:100, V Scale 1:50 @ A3

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No	Revision	Drawn	Authorised	Date
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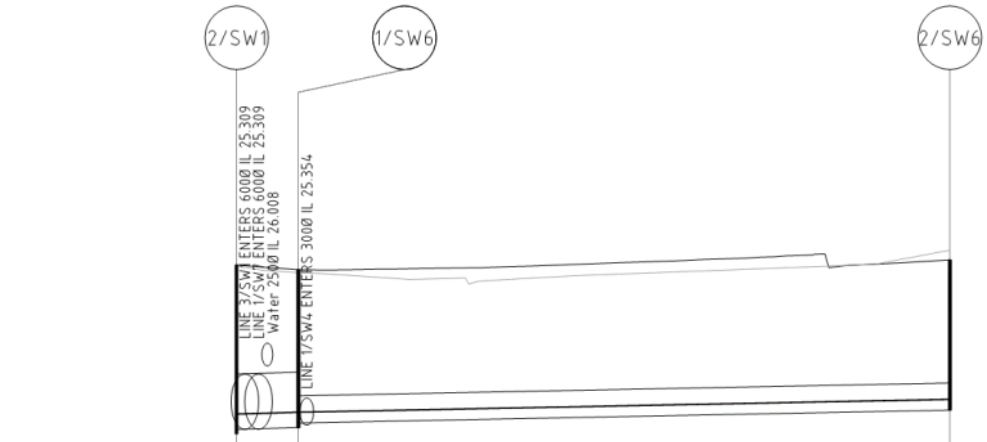
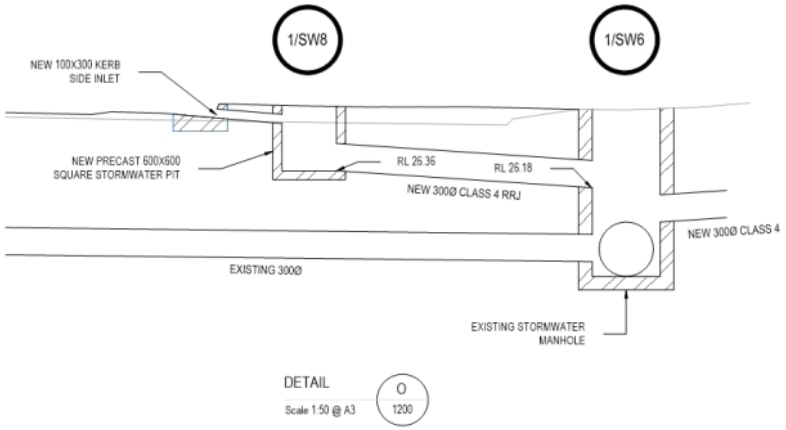
Client	HOBART CITY COUNCIL
Project	COLLINS STREET AND MOLLE STREET SIGNALISATION SITE 9487
Title	STORMWATER LONG SECTION
Drawing Number	HCC-MSIG-C1751
Revision	B ISSUED 04/03/2021



PIT SCHEDULE								
			INLET		OUTLET		PIT	
NAME	EASTING	NORTHING	DIA	INV LEV	DIA	INV LEV	SETOUT RL	DEPTH
4/SW1	473667.67	658290.886	300	25.885	300	25.835	27.756	1.921
1/SW2	473666.66	658289.821			300	25.956	27.701	1.745
			INLET		OUTLET		PIT	
NAME	EASTING	NORTHING	DIA		DIA		SETOUT RL	
1/SW7	473694.92	658279.661	300	25.49	600	25.44	26.976	1.536
2/SW7	473702.34	658272.643			300	25.887	27.24	1.353
			INLET		OUTLET		PIT	
NAME	EASTING	NORTHING	DIA		DIA		SETOUT RL	
1/SW6	473683.39	658273.794	300	25.379	600	25.329	27.068	1.739
2/SW6	473693.7	658263.792			300	25.521	27.178	1.657

PIPE DETAILS	EXISTING 600Ø	DESIGN 300Ø Class 4 RRJ	
SLOPE/GRADE	1:68.2	1:101.2	
DATUM RL 23.1	RL 23.3		
DEPTH TO INVERT	1.812	1.739 / 1.689	1.657
INVERT LEVEL	25.309	25.329 / 25.379	25.521
FINISHED SURFACE	27.121	27.068	27.178
EXISTING SURFACE	27.111	27.035	27.284
CHAINAGE	0.000	1.364	15.730
	1.364	14.365	

DRAINAGE LONGITUNDINAL SECTION FOR LINE SW6
SCALES: HORIZONTAL 1:100 VERTICAL 1:50



DETAIL O
Scale 1:50 @ A3 1200

STORMWATER LONG SECTION
H Scale 1:100, V Scale 1:50 @ A3

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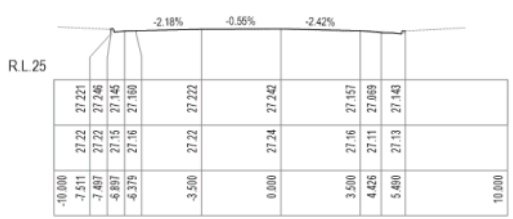
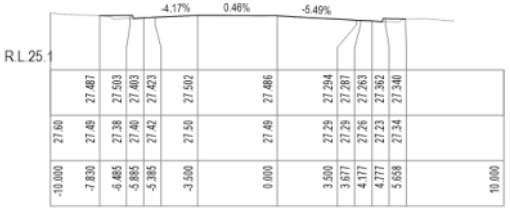
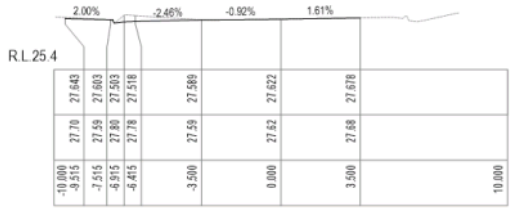
Client	HOBART CITY COUNCIL
Project	COLLINS STREET AND MOLLE STREET SIGNALISATION SITE 9487
Title	STORMWATER LONG SECTION
Drawing Number	HCC-MSIG-C1752
Revision	B ISSUED 04/03/2021



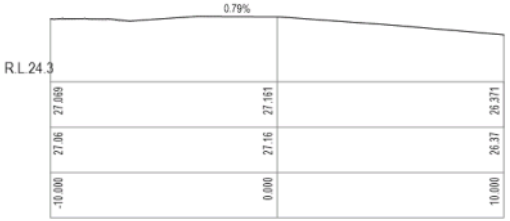
CH. 100.000
MC00-Molle Street



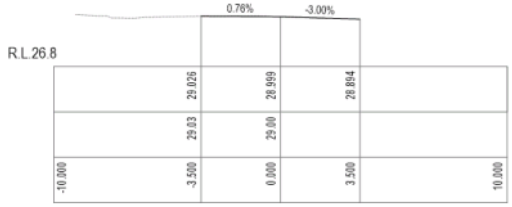
CH. 130.000
MC00-Molle Street



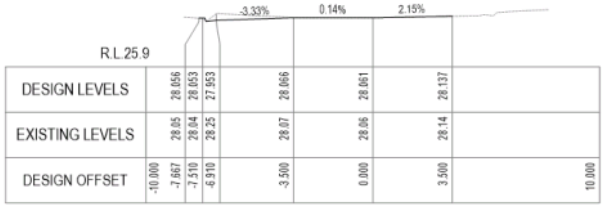
CH. 90.000
MC00-Molle Street



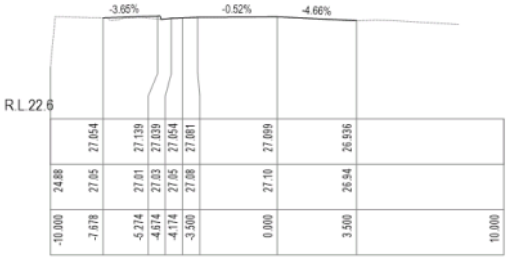
CH. 120.000
MC00-Molle Street



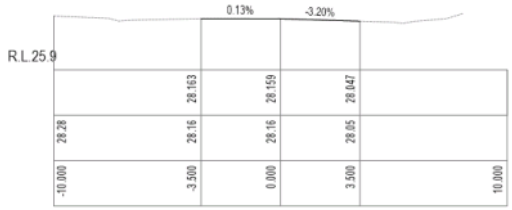
CH. 150.000
MC00-Molle Street



CH. 80.000
MC00-Molle Street



CH. 110.000
MC00-Molle Street



CH. 140.000
MC00-Molle Street

MOLLE STREET CROSS SECTION

Scale 1:200 @ A3

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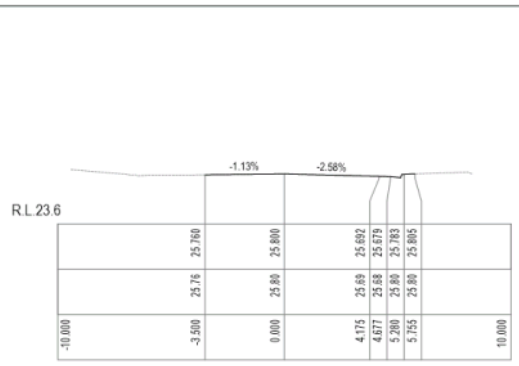
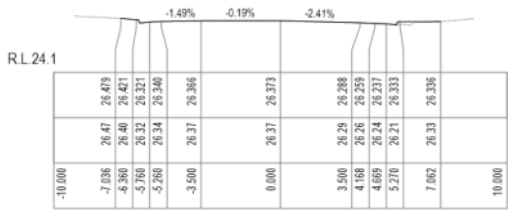
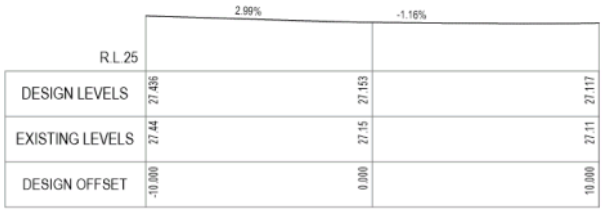
Client	HOBART CITY COUNCIL
Project	COLLINS STREET AND MOLLE STREET SIGNALISATION SITE 9487
Title	MOLLE STREET CROSS SECTIONS
Drawing Number	HCC-MSIG-C1801
Revision	B ISSUED 04/03/2021



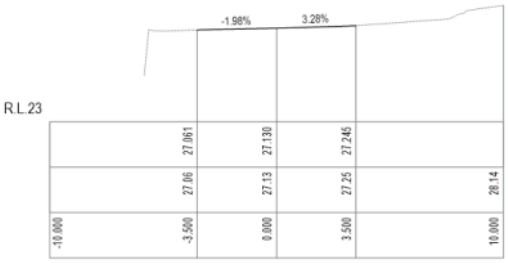
CH. 16.970
MC10-Collins Street



CH. 10.000
MC10-Collins Street

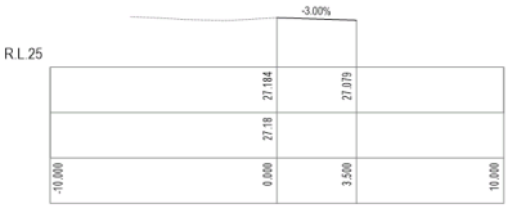


CH. 0.000
MC10-Collins Street

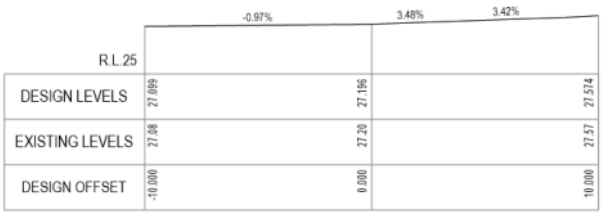


CH. 20.000
MC20-Collins Way Carpark

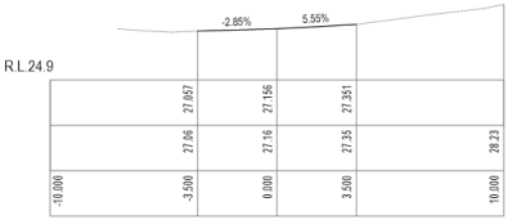
CH. 10.000
MC20-Collins Way Carpark



CH. 36.102
MC20-Collins Way Carpark



CH. 0.000
MC20-Collins Way Carpark



CH. 30.000
MC20-Collins Way Carpark

COLINS STREET CROSS SECTION
Scale 1:200 @ A3

COLINS WAY CARPARK CROSS SECTION
Scale 1:200 @ A3

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Client	HOBART CITY COUNCIL
Project	COLLINS STREET AND MOLLE STREET SIGNALISATION SITE 9487
Title	MOLLE STREET CROSS SECTIONS
Drawing Number	HCC-MSIG-C1803
Revision	B ISSUED 04/03/2021

Molle and Collins Street, Hobart

Traffic signals project

Application No. (PLN-21-192 Original) Resubmission PLN-21-TBC

PLN Fi5 - Request for additional information relating to signage

1. There are no signs proposed within any private property boundary.

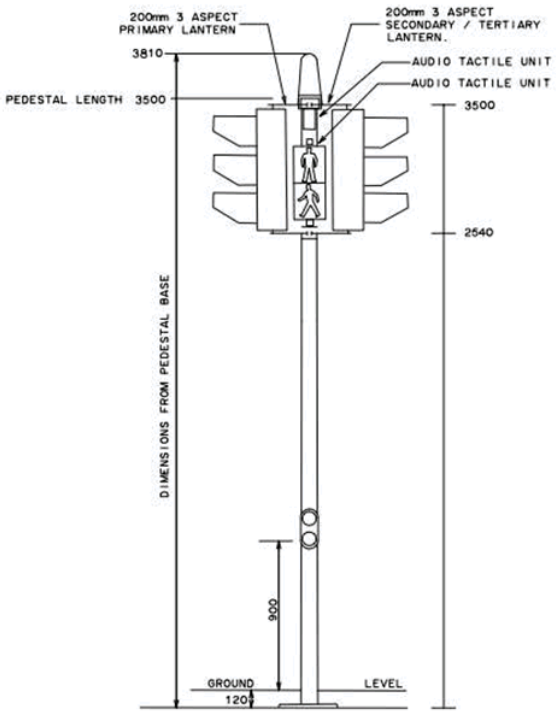
2. Traffic signal and signage locations are provided on the attached drawings.

Signals: HCC-MSIC – C1300; and
Signs and Line marking: HCC-MSIC-C1400

Traffic Signals

In relation to the traffic signals, standard dimensions and arrangements can be found in the Tasmanian Government standard drawings, available here:
https://www.transport.tas.gov.au/__data/assets/pdf_file/0013/163120/Traffic_Signals_-_Standard_Drawings_Set_new.pdf

An extract of the associated dimensions is reproduced from drawing TC-1116.



2C PEDESTAL

Signs

The signs and linemarking plan calls up new signage for the intersection.

- No Right turn signs: R2—6-AS

 - Size: 450 x 450 mm

- One Way signs: R2-2

- Size 450 x 600

- Parking control signage (Time restrictions Eg. (R5-2) and No Parking (R5-41))

 - Size 225 x 450

3. Signage provided will be static regulatory signage.

   Traffic signals will be lit (illuminated) in the standard sequence of Green, Amber, and Red. Pedestrian signals will be in the standard Red and Green.

4. The existing chevron signs are shown here, within the circles.

Molle Street at Collins Street junction, existing Chevron signs.

Molle and Collins Street, Hobart

Traffic signals project

Application No. (PLN-21-192 Original) Resubmission PLN-21- TBC

PLN Fi1 - Request for a statement outlining the works

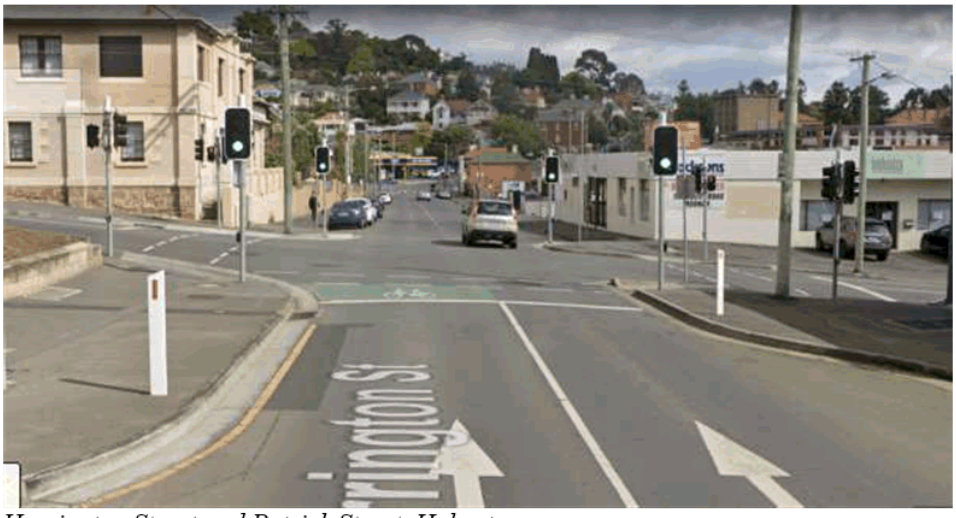
Works statement
The Molle and Collins Street intersection, traffic signals project, involves the installation of standard traffic signals. All works will occur on the road reserve, except for some minor junction approach road works which will occur on a small portion of 50 Molle Street. A land acquisition, through a subdivision, negotiated with the current landowner will create the required junction approach on this property and connect to the existing carpark.

The new traffic signals are improve the road safety of vulnerable road users, pedestrians, bicycle riders, mobility device users (wheelchairs, *gophers* etc) and vehicles turning and moving through the intersection.

Kerb bulbings (widened kerbs and associated footpath) will also be installed to maintain sight distances and shorten pedestrian crossing distances where possible.

It is envisaged that garden beds with drought tolerant plantings may be installed in the two larger kerb bulbings on the Molle Street approach to newly signalised junction, similar to those installed recently in the South Hobart pedestrian crossing traffic signals. This is in negotiation with the CoH (Parks and Reserves) and underground infrastructure providers.

Pictorial examples are shown below:



Harrington Street and Patrick Street, Hobart
A similar traffic signal installation with kerb bulbings and a one way street.

Maquarie Street - South Hobart Drought tollerent plantings near pedestrian crossing
An illustrative example of localised planting adjacent to traffic signals.

NOTES
- BOUNDARIES SHOWN IN GREEN ARE COMPILED FROM SURVEY INFORMATION ONLY REMARK SIO 172299 FILED WITH PLAN D107861
- BOUNDARIES SHOWN IN YELLOW ARE COMPILED FROM COUNCIL GIS
- PROPOSED ROAD DEDICATION BOUNDARIES ARE SHOWN BY HEAVY RED LINE
- PROPOSED ROAD DEDICATION BOUNDARIES ARE INDICATIVE ONLY AND SUBJECT TO FINAL SURVEY

SURVEYED	MA	SCALES	HOBART CITY COUNCIL
DRAWN	MJH	1:200@A4	
DESIGNED			PROPOSED ROAD DEDICATION PART OF UNTITLED RIGHT OF WAY ADJACENT TO 50 MOLLE STREET
SUPERVISED	MA		City of HOBART
Geocomp File	161340	DATUM	
AutoCAD File	F-912-376.DWG	MGA '94	
APPROVED MANAGER SURVEYING SERVICES			

F-912-376

AMENDMENT No.	MICROFILMED
DATE 7/4/2021	SURVEYING SERVICES

NOTES
- BOUNDARIES SHOWN IN GREEN ARE COMPILED FROM SURVEY INFORMATION ONLY REMARK SIO 172299 FILED WITH PLAN D107861
- BOUNDARIES SHOWN IN YELLOW ARE COMPILED FROM COUNCIL GIS
- PROPOSED LAND ACQUISITION BOUNDARIES ARE SHOWN BY HEAVY RED LINE
- PROPOSED LAND ACQUISITION BOUNDARIES ARE INDICATIVE ONLY AND SUBJECT TO FINAL SURVEY
- LOT 1 IS TO BE DEDICATED AS ROAD PURSUANT TO SECTION 6 OF THE LOCAL GOVERNMENT (HIGHWAYS) ACT 1982

SURVEYED	MA	SCALES	HOBART CITY COUNCIL
DRAWN	MJH	1:200@A4	
DESIGNED			PROPOSED LAND ACQUISITION PART OF 50 MOLLE ST - CT 47718/1 OWNER WOOSTER AVENUE PTY LTD
SUPERVISED	MA		City of HOBART
Geocomp File	161340	DATUM	
AutoCAD File	F-912-374_RevA.DWG	MGA '94	
APPROVED MANAGER SURVEYING SERVICES			

F-912-374

AMENDMENT No.	MICROFILMED
A	
DATE 7/4/2021	SURVEYING SERVICES

Molle and Collins Street, Hobart

Traffic signals project

Application No. (PLN-21-192 –Original) Resubmission PLN 21- TBC

1 April 2021 : SURVFi2 - *Request for additional information relating to subdivision, drainage and a concept servicing plan.*

1. *clearly distinguishes between existing and proposed infrastructure for all existing and proposed lots;*
2. *clearly distinguishes between private and public infrastructure for all existing and proposed lots ;*
3. *shows the location of existing and proposed hydraulic service connections, water, sewer and stormwater for all lots and how they connect to Tas water and/or Council infrastructure.*
4. *shows private sewer, stormwater (including surface drainage) and water services and connections entirely separate to each lot and contained entirely within the lots served.*
5. *if the proposed stormwater connection(s) is/are not at the lowest point of the lot(s), show on the site plan the extent of the lot(s) which cannot be drained of runoff).*
6. *The subdivision plan must show all affected titles. Clarify if these will be treated as Balance Lots. Clarify if the balance lots will be adhered.*
7. *Show the proposed property boundaries on the engineering plans.*
8. *Clearly show what works are proposed within the land being taken over eg kerb appears to be extended will a footpath be constructed?*
9. *Clarify what ownership/ works are proposed for the private trench grate in the land to be dedicated as Road, and that all parts of the retaining wall (including footings) would be contained within a single Lot.*
10. *The cover letter mentions garden beds, but these aren't shown on the plans. Are they still proposed? Would they receive any road runoff?*
11. *The submitted engineering plans (Rev A) are not of an acceptable standard. Council is aware a later revision set exists please submit the most current revision.*
12. ***Council notes the Rev B plans still show stormwater infrastructure and signal footings which appear unable to be constructed due to clashes***

RESPONSE (Date 26-4-2021) – Revised for 17-5-2021 Resubmit

This cover letter addressing various RFI points is to read in conjunction with the re-submitted documents:

A. Full Design Drawing set
Collins Street and Molle Street Signalisation
HCC-MSIG-C100 (and associated detail drawings thru to C1803) REV B
Title Block Revision reference: B ISSUED 04/03/2021
23/04/2021 5:00:45 PM

B. Property subdivision survey plans
F-912-374
Proposed Land Acquisition
Part of 50 Molle St-CT 47718/1
Owner Wooster Avenue Pty Ltd

Also provided for information
F-912-376
Proposed Road Dedication
Part of Untitled Right of Way
Adjacent to 50 Molle Street

SURVFi2: Points 1 thru 5
It is believed that these 5 requests are addressed through the drawings.

It is further noted that there is no proposed building development (with this application) requiring potable water or sewage servicing of either the proposed Lot 1 or the balance of 50 Molle Street (CT 47718/1) at this time.

Should any future development be proposed, which would require such hydraulic servicing it is noted that:
- sewage mains run along the "south-east" boundary of 50 Molle Street.
- potable water mains exist on the Molle Street boundary of 50 Molle Street.
- storm water mains exist on the Molle Street boundary of 50 Molle Street

It is further noted that the creation of Lot 1 and its dedication as *road* to support the junction signalisation is not believed to change any of the current drainage patterns or arrangement.

SURVFi2: Point 6
The survey plan – F-912-374 address this question.

SURVFi2: Point 7
Property boundaries are shown on the engineering plans.

SURVFi2: Point 7
This point is addressed with the re-submitted documents F-912-374 and the "*For Information*" F-912-376

SURVFi2: Point 8
The reissued engineering plans clarify the works on the new portion of roadway in the proposed land acquisition.
The current area is sealed with asphalt. The design uses linemarking to designate the trafficable areas for vehicles within the area being taken over. There is no intention to construct a footpath with in the Lot 1 land acquisition. Space for pedestrian access is provided on the other side of this junction leg due to the connectivity and existing right of way.

SURVFi2: Point 9
The current portion of land which is designated as a right of way has no title associated with it as such. The right of way contains a variety of public and private infrastructure. It is proposed to place a road dedication over the relevant portion of the right of way as shown on the "For Information" – Drawing F-912-376.
Notwithstanding the underlying private trench grate and adjacent retaining wall still attach to the untitled right of way, the City of Hobart is making arrangements to assume maintenance responsibilities.

SURVFi2: Point 10
The location of small planting areas is in discussion and final determination with relevant City of Hobart business units. Any such garden beds would not be designed to receive any storm water runoff from road areas as such.

SURVFi2: Point 11
It is unclear why the submitted plans (Rev A) are not of an acceptable standard. It is correct that a further updated (Rev B) plan set has been developed following discussions with City of Hobart officers in the storm water area. The revised plans are re-submitted.

SURVFi2: Point12
See point 11 response.

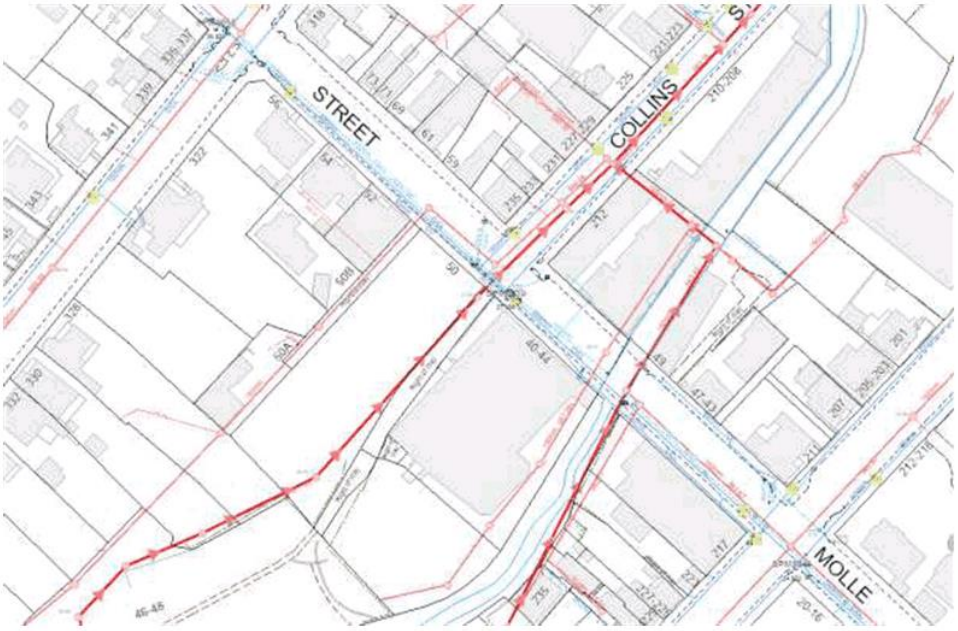
Molle and Collins Street, Hobart

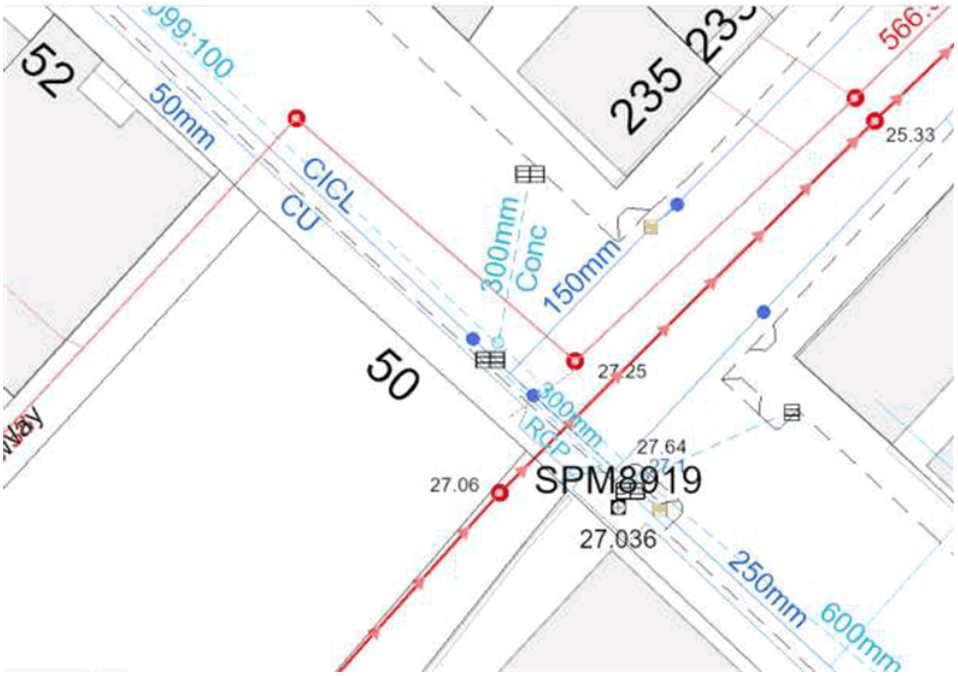
Traffic signals project

Application No. (PLN-21-192 Original) Resubmission PLN 21-TBC

1 April 2021

SURVFi2 – Points 3 and 4

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GES

GEO-ENVIRONMENTAL

SOLUTIONS

ENVIRONMENTAL SITE ASSESSMENT

Intersection of Collins and Molle Streets, Hobart

February 2021

For Hobart City Council

Geo-Environmental Solutions P/L 29 Kirksway Place, Battery Point, 7004. Ph 6223 1839 E: Office@geosolutions.net.au

DOCUMENT CONTROL

Title	Version	Date	Author	Reviewed By
Environmental Site Assessment: Collins and Molle Street Intersection, Hobart, Tasmania	Version 1	16th February 2021	Mark Downie	JP Cumming

EXECUTIVE SUMMARY

This report presents the findings of an Environmental Site Assessment (ESA) undertaken by Geo-Environmental Solutions Pty. Ltd. (GES) at the intersection of Collins and Molle Streets, Hobart, Tasmania - hereby referred to as 'The Site'. GES was commissioned by Hobart City Council, to conduct the site assessment.

This ESA has been prepared by a suitably qualified and experienced practitioner in accordance with procedures and practices detailed in National Environmental Protection Measure [Assessment of Site Contamination] (NEPM ASC; 2013).

The objective of this ESA was to investigate the site for contamination, and address performance criteria under the potentially contaminated land code (E2) of the *Hobart City Council Interim Planning scheme 2015*. The assessment determines the suitability and safety of the soil for excavation at a typical depth for foundation & services excavation, and any human or environmental risks from the soil present on site.

The following information was gathered during the desktop investigation:

- The site is zoned *Central Business* under the Hobart City Councils Interim Planning Scheme of 2015. The geology of the site is Quaternary alluvial deposits, fill was observed at variable depths ranging from 0.3 to 0.8 m below ground surface. Groundwater is inferred to travel east along similar trajectory to Hobart Rivulet to discharge into the River Derwent. Surface water would be collected in stormwater culverts and discharged into Hobart Rivulet.
- A review of available information including historical aerial photographs and illustrations confirmed that the site is situated on the western edge of the central business district of Hobart, and has been used as a street since at least 1841.
- A former factory/workshop is present upstream along Hobart Rivulet, and the area directly upgradient of the site appears to have historically been residential properties.
- Some potential contamination sources include past light industrial landuses upstream of the site and fill of undetermined origins. Identifying all contamination sources is beyond the scope of this report, given the long history of land use in the area.
- Contaminants Of Potential Concern (COPC) include the following: TPH/TRH; Mono Aromatic hydrocarbons: (BTEXN); PAH; and heavy metals.

From the soil assessment, it is concluded that:

- Environment: There were no metals detected above NEPM 2013 EIL guideline limits, and no risks to ecological receptors identified. For hydrocarbons, Benzo(a)pyrene exceeded NEPM 2013 ESL guideline limits in three of the seven samples, and poses are risk to ecological receptors.
- Human Health: There were no human health guideline exceedances at commercial/industrial land use, and therefore no risk to human receptors for; dermal contact, dust inhalation or soil ingestion.
- Vapour Risk There were no indoor vapour risks or inhalation risk for trench workers or residential site users identified and therefore no risk to human receptors for vapour.
- Excavated Soil Management: In terms of IB105; of the seven primary soil samples, one sample was considered Level 3 Material (Contaminated Soil) due to benzo(a)pyrene and benzo(a)pyrene(TEQ). Four samples were considered Level 2 Material (Low Level Contaminated Soil), and the remaining two samples can be considered Level 1 Material (Clean Fill). If the soil is to be disturbed, it must be handled in accordance with IB105 and disposed of accordingly.

GES recommends the following:

- There were no human health guideline exceedances in soil samples tested when compared at commercial/industrial investigation limits. Based upon the current results the site will not pose a risk to the health of workers during excavation and the site is suitable for the proposed use.
- If any soil disturbance is to occur on site, a Soil and Water Management Plan (SWMP) should be put in place to account for the management and erosion of soil with potential ecological impacts.
- Due to variable and elevated levels of heavy metals and hydrocarbons it is recommended that any excavated material be stockpiled and resampled for offsite disposal in accordance with IB105 and the controlled waste regulations.

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ABREVIATIONS

AEC	Areas of Environmental Concern
AHD	Australian Height Datum
ALS	Analytical Laboratory Services
ANZECC	Australia and New Zealand Environment and Conservation Council
BGS	Below Ground Surface
BH	Borehole
BTEXN	Benzene Toluene Ethylbenzene Xylene Naphthalene
COA	Certificate of Analysis
COC	Chain of Custody
COPC	Contaminant of Potential Concern
CRC CARE	Corporative Research Centre for Contamination Assessment and Remediation of the Environment
CSM	Conceptual Site Model
DQO	Data Quality Objectives
EOH	End Of Hole
EIL	Ecological Investigation Levels
ESL	Ecological Screening Levels
EPA	Environmental Protection Authority
ESA	Environmental Site Assessment
GDA94	Geocentric Datum of Australia 1994
GES	Geo-Environmental Solutions Pty. Ltd.
HIL	Health Investigation Levels
HSL	Health Screening Levels
IL	Investigation Levels
LOR	Limits of Reporting
MDL	Mean Detection Limit
NATA	National Association of Testing Authorities
NEPM ASC	National Environmental Protection (Assessment of Site Contamination) Measure
NHMRC	National Health and Medical Research Council
NL	Non Limiting
NRMMC	Natural Resource Management Ministerial Council
PAH	Polynuclear Aromatic Hydrocarbons
PCP	Physico-Chemical Parameters
PHC	Petroleum Hydrocarbons
PID	Photo-Ionisation Detector
PPA	Preferential (PVI) Pathways Assessment
PVI	Petroleum Vapour Intrusion
TPH	Total Petroleum Hydrocarbons
TRH	Total Recoverable Hydrocarbons
USCS	Unified Soil Classification System

1 INTRODUCTION

1.1 General

This report presents the findings of an Environmental Site Assessment (ESA) undertaken by Geo-Environmental Solutions Pty. Ltd. (GES) at the intersection of Collins and Molle Streets, Hobart, Tasmania - hereby referred to as 'The Site'. The site location is presented in Figure 1 and the aerial photograph is presented in Figure 2. GES was commissioned by Hobart City Council to conduct the site assessment.

The site is situated on the western edge of the central business district of Hobart, and has been used as a street since at least 1841. A former factory/workshop is present upstream along Hobart Rivulet, and the area directly upgradient of the site appears to have historically been residential properties. The ESA will compare contamination against E2.6.2 Excavation code of the Potentially Contaminated Land Code which will account for any future potential contact or excavation of earth such as services trenches or digging for traffic light pole foundations. The proposed development at the site is for a new traffic signal system at the intersection of Collins and Molle Streets, we envisage this to include traffic light poles, signal boxes and other associated infrastructure. The site pothole plan that indicates the areas of excavation on 20th January 2021 is presented in Appendix 1.

Samples were taken when potholing for locating services was being undertaken, giving an access point to soil underlying the roads and footpaths.

This ESA has been prepared by a suitably qualified and experience practitioner in accordance with procedures and practices detailed in National Environmental Protection Measure [Assessment of Site Contamination] (NEPM ASC; 2013) guidelines and key regulations and policies identified in the References section of this document. Personnel engaged in preparing this ESA are listed in Appendix 2 along with their relevant qualifications and years of experience.

Figure 1 Site Location (Image C/O The LIST)

1.2 Site Layout

An aerial image of the existing site layout is presented in Figure 2, with approximate excavation areas indicated in blue.

Figure 2 Existing Site Layout (Image C/O The LIST)

1.3 Site Details

Site details are presented in Table 1.

Table 1 Site Details

SITE LOCATION: Intersection of Collins Street and Molle Street, Hobart, Tasmania
INVESTIGATION AREA The 'potholed' excavations, as indicated in Figure 2.
SITE ELEVATION & GRADIENT Approximately 27-28m ASL, with fall to the East.
SITE SURFACING The site surface in the investigation areas are sealed with concrete and asphalt.
TITLE REFERENCES No title references available (road)
SITE OWNER Hobart City Council (road)
PREVIOUS LANDUSE Road for at least 180 years.
SITE SURROUNDING LAND ZONING *Tasmanian Interim Planning Scheme 2015 – Utilities*
CURRENT SITE LAND USE Road and footpath.
PROPOSED LAND USE Continued use as road and footpath, with the addition of traffic signals.

1.4 Investigation Objectives

The objective of this ESA was to investigate the site for contamination, we have done this by addressing E2.6.2 performance criteria under the *Hobart City Council Interim Planning scheme 2015* for excavation. To assess the suitability and safety of the soil for excavation at a typical depth for foundation/services excavation, and any human or environmental risks of the soil present on site.

1.5 Scope of Works

The scope of work for this ESA was to:

- Conduct a desktop and an invasive soil investigation at the site.
- Investigate six (6) excavations presented from potholing work, and collect seven (7) primary soil samples; the primary samples were sent for analysis of total recoverable hydrocarbons (TRH) Benzene Toluene Ethylbenzene Xylene Naphthalene (BTEXN), Polynuclear Aromatic Hydrocarbons (PAH), and a suite of fifteen (15) metals to a National Association of Testing Authorities (NATA) accredited laboratory.
- Samples were sent with quality assurance/ quality control (QA/QC) samples including one rinsate blank and one duplicate sample.
- Determine the absence or presence and if present the level of site contamination and compare soil results against the relevant guidelines.
- Conduct a risk assessment, known as a Conceptual Site Model; and
- Report findings in an Environmental Site Assessment report, detailing specific onsite human health or environmental risk which may source from potentially detected contamination.

2 PLANNING

2.1 Overview

The client has requested an Environmental Site Assessment due to a proposed development on the site consisting new traffic signals. We envisage this to include traffic light poles, control boxes and related infrastructure. Whilst 'potholing' was underway to inspect services in the area, GES observed the underlying soil, and excavated soil samples to analyse for a suite of contaminants common in urban environments.

2.2 Interim Planning Scheme

2.2.1 Acceptable Solutions

As the history of the site suggests that potentially contaminating activities may have taken place on or nearby to the site, for any future potential ***excavation*** at the site, there are no acceptable solutions to proposed works, and therefore E2.6.2 P1 performance criteria are to be addressed.

2.2.2 Excavation Works E2.6.2 P1

For the sake of this investigation we have addressed E2.6.2 P1 performance criteria to determine levels of potential contamination on site. The performance criteria identify that any future potential excavation works must 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.

2.2.3 Statement of Suitability

A statement based on the results of the Environmental Site Assessment that the excavation as part of the planned works will not adversely impact on human health or the environment is to be provided (subject to implementation of any identified remediation and/or protection measures as required).

3 DESKTOP STUDY

3.1 Site Zoning

The site is zoned *Utilities* under the Hobart City Councils Interim Planning Scheme of 2015. The land use surrounding the site is *Urban Mixed Use.* Some nearby zonings include *Inner Residential, Open Space* and *Central Business* (Figure 3). The site is to be assessed against land use Class D for Commercial and Industrial land use for the purpose of installing a signalling system. Any future possible residential or recreational land uses are not applicable to this project, and the road and footpath are anticipated to be sealed after the works are complete.

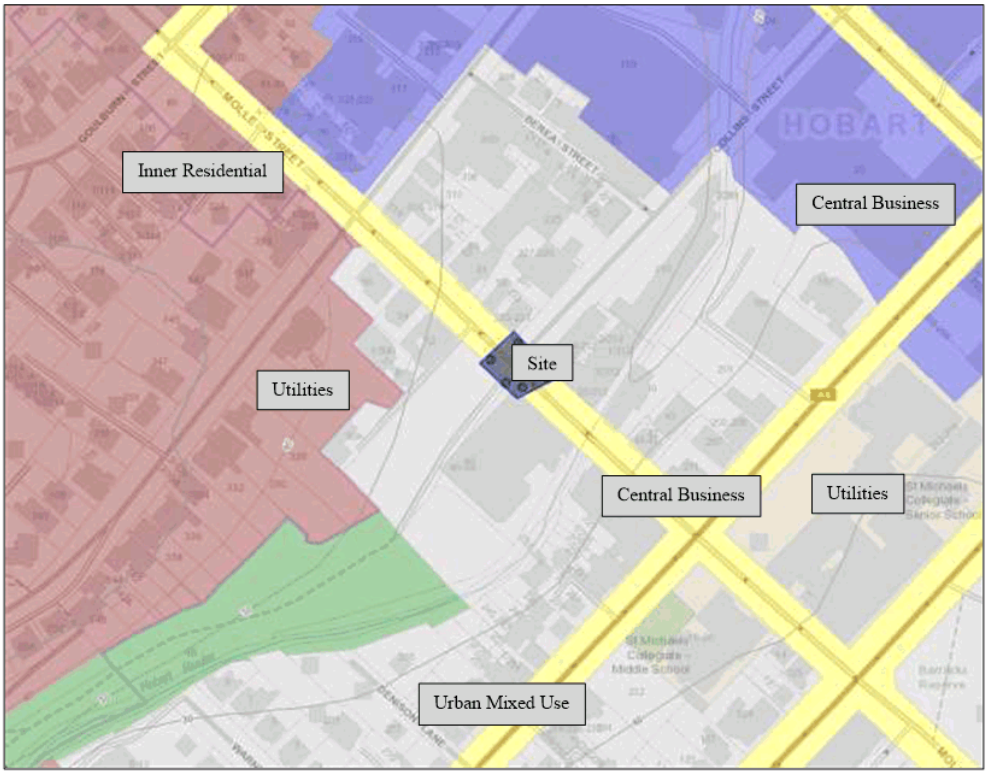

Figure 3 Hobart City Councils Interim Planning Scheme Zones (2015)

3.2 Site Walkover

A site walkover was completed by GES staff on the 20th January 2021. No obvious signs of contamination such as soil staining or odour were observed. Images are presented in Appendix 3, and descriptions of exposed soil are presented in the borehole logs in Appendix 4.

3.3 MRT Geology Mapping

The geology of the site has been mapped by Mineral Resources Tasmania, see Figure 4. The site is inferred to be underlain with Quaternary alluvial deposits **(Qa)** over most of the investigation area, with Quaternary deposits **(Q)** around the north and north western edge of the investigation area. Geological descriptions are outlined below:

Qa *–Undifferentiated Quaternary deposits of alluvial gravel, sand and clay.*
Q *–Undifferentiated Quaternary sediments.*
Tcbd *–Cenozoic deposits of inferred dolerite boulder beds with possible shallow subsurface dolerite or Parmeener rock.*
Rqph *– Triassic/Permian freshwater predominantly cross-bedded quartzose to feldspathic sandstone commonly with overturned cross-bedding, subordinate siltstone with sparse plant and vertebrate fossils (Knocklofty Formation).*
Jd *–Jurassic igneous rocks of dolerite and related rocks.*

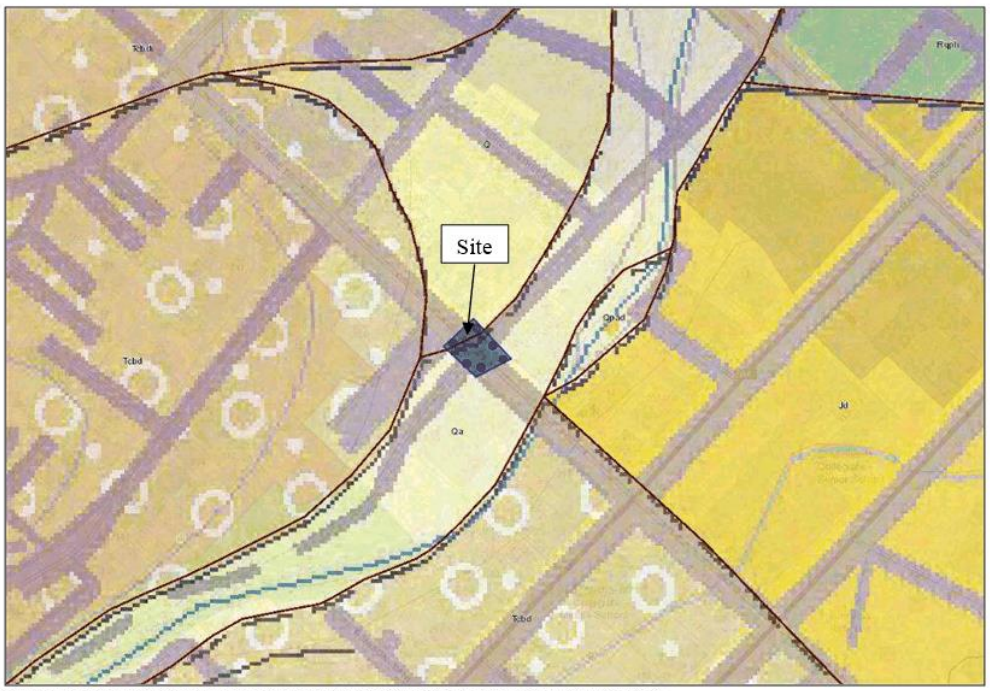

Figure 4 Mineral Resources Tasmania 1:25000 Scale Mapping (The LIST).

3.4 Dangerous Goods Records (WorkSafe Tasmania)

There is no evidence of dangerous goods being stored on the site, and a request for dangerous goods records was deemed to not be required.

3.5 EPA Tasmania Property Information Request

Environmental Protection Authority (EPA) Tasmania, Property Information Requests (PIR)s are currently unavailable while staff have been allocated other tasks relating to the COVID-19 pandemic. The EPA Regulated Premises layer and Underground Petroleum Storage System (UPSS) layer on The LIST have been reviewed and presented in Figure 5. This shows active UPSS (green pins) and a regulated premises (green diamond) on the opposite side of Hobart Rivulet, and no UPSS or regulated premises directly upgradient of the site within a 500 m radius.

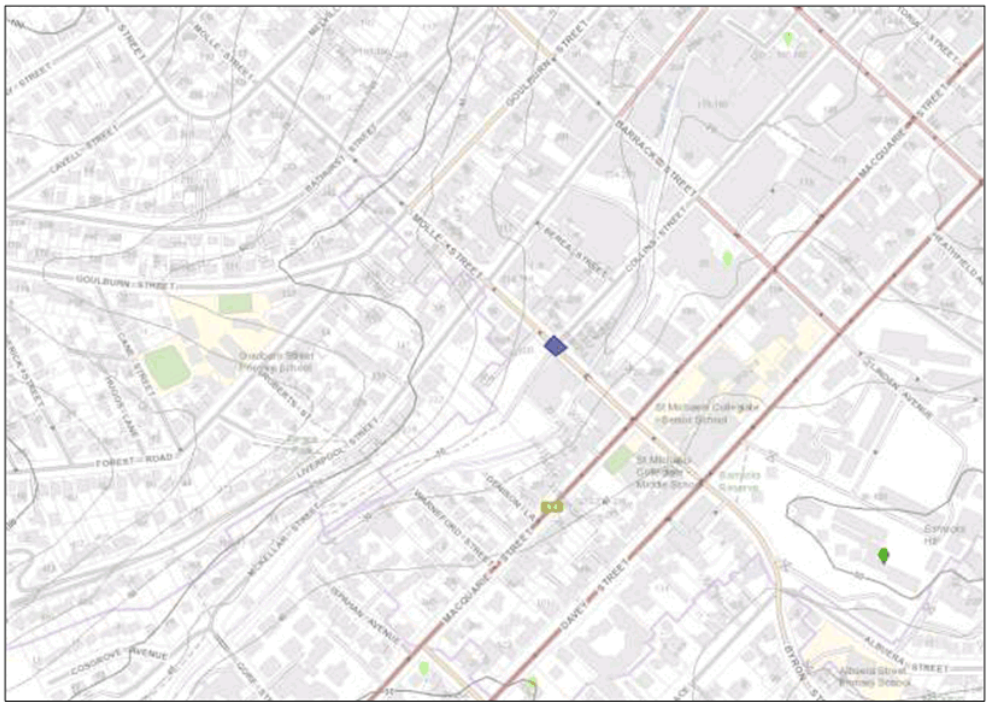

Figure 5 EPA Regulated Premises and UPSS

GES previously made a Property Information Request (PIR) to the Environmental Protection Authority (EPA) regarding the property at 283-287 Liverpool Street in January 2020. This PIR is included in Appendix 5.

Relevant information pertaining to nearby sites as outlined by the PIR is presented in Table 2.

Table 2 Nearby Potentially Contaminated Sites

Site	Contamination	Conclusion
23 Barrack St, former Caltex Service Station	Seven UPSS (removed) 1100m^3 of hydrocarbon and heavy metal contaminated soil (removed)	Down gradient of the site Contamination removed
254-286 Liverpool St, 38 Barrack St and 119 Collins St	Three UPSS (removed)	Down gradient of the site Contamination removed
289-293 Liverpool St	Storage of dangerous goods in UST (WST file no. G321, 1946-1954)	Cross-gradient of the site. No recent records of storage of dangerous goods
295-313 Liverpool St	Storage of dangerous goods in UST (WST file no. WST G102, 1957-1983)	Cross-gradient of the site. No recent records of storage of dangerous goods
317-319 Liverpool St	Storage of dangerous goods in UST (WST file no. A325, 1978-1982)	Cross-gradient of the site. No recent records of storage of dangerous goods
100-102 Goulburn St	Storage of dangerous goods in UST (WST file no. A325, 1958-1990)	Up-gradient of the site. No recent records of storage of dangerous goods
199 Collins Street (30m S of site)	Storage of dangerous goods in UST (WST file no. 0667, 1960-1991)	Down gradient of the site. No recent records of storage of dangerous goods

Several potentially contaminated sites are present along Liverpool Street, which is an area that has historically featured automotive workshops. This area is cross gradient of the site, and not likely to impact the site.

100-102 Goulburn Street is up gradient of the site, it appears to currently be, and to historically been a residential property. The current residential building was built in 1958, and TROVE historical newspaper records refer to this address as being a residential property on dates including 1885, 1935, 1886, 1911, 1923. At this stage we are unable to determine what dangerous goods were stored at 100-102 Goulburn street, of for what period of time, however it appears that no dangerous goods have been stored within the last 30 years.

3.6 Historical Aerial Photography Interpretation and Summary of Site History

Historical aerial photographs of the site and surrounding areas were provided by the Department of Primary Industries, Parks, Water and Environment (DPIPWE) and Google Earth. The individual aerial photos and are presented in Appendix 6.

Sprent's 1841 map of Hobart (Figure 9), shows both Collins and Molle Streets being present in the same position as currently located, with buildings present along Collins street, and no buildings present on the south western side of Molle Street.

The 1946, 1958 and 1965 historical aerial photographs show a warehouse/factory to the south of the investigation area, and a building to the west of the investigation area. The building to the west is in a state of disrepair in 1965, and in the 1969 historical aerial photograph has been demolished, this area has been used for car parking since then. The warehouse still exists at 40-50 Molle Street currently hosting a bodyworks and a childcare centre.

There are negligible changes to the investigation area observed through historical aerial photographs, and negligible changes to the surrounding and upgradient areas since the demolition of a building around 46-50 Molle street between 1965 and 1969.

The area of 40-50 Molle street features a warehouse that is likely to have been used as Somerset Mill steam powered flour mill, then as Stabb Brothers Workshop (Godden Mackay Logan 2000), currently it hosts a bodyworks and a childcare centre. A woollen mill operated in the vicinity in the late 1800s (which may have included the former flour mill) (Goddon Mackay Logan 2000). Aside from the extensive light industrial activities along Hobart Rivulet in the 1800s, there is no indication of any industrial activities upgradient of the site, with residential properties being present along Molle Street, and 'Ayrlie' building at 322 Liverpool Street containing a large garden with many trees is directly upgradient of the site.

Table 3 Historical Photograph Log

Year	Photograph Reference
2019	• Plate 1 Historical Aerial Photograph – January 2020 (C/O Google Earth)
2008	• Plate 2 Historical Aerial Photograph – March 2008 (C/O Google Earth)
2003	• Plate 3 Historical Aerial Photograph – October 2003 (C/O Google Earth)
1990	• Plate 4 Historical Aerial Photograph - 1990 (c/o DPIPWE)
1982	• Plate 5 Historical Aerial Photograph - 1982 (c/o DPIPWE)
1969	• Plate 6 Historical Aerial Photograph, 1969 (c/o DPIPWE)
1965	• Plate 7 Historical Aerial Photograph, 1965 (c/o DPIPWE)
1958	• Plate 8 Historical Aerial Photograph, 1958 (c/o DPIPWE)
1946	• Plate 9 Historical Aerial Photograph, 1946 (c/o DPIPWE)
1841	• Figure 9 Excerpt from - Sprent's 1841 Map of Hobart (c/o The LIST)

3.7 Site Topography, Drainage & Hydrogeology

The investigation area sits at approximately 27m above sea level (ASL) and is sloping to the east with a low gradient of around 5%, steeper gradients are present upslope as the site is on a flatter landform adjacent to Hobart Rivulet. Groundwater is inferred to be migrating easterly based on broad scale topographic trends, and the Hobart Rivulet is flowing north easterly away from the site. The surface topography and inferred groundwater is illustrated in Figure 6. Hobart rivulet is approximately 30 – 50 m away to the south east and east of the site. Groundwater from the site is likely to follow the trajectory of Hobart rivulet which discharges 1.7km away to the North East.

Surface water will enter stormwater networks and enter Hobart Rivulet to the east of the site.

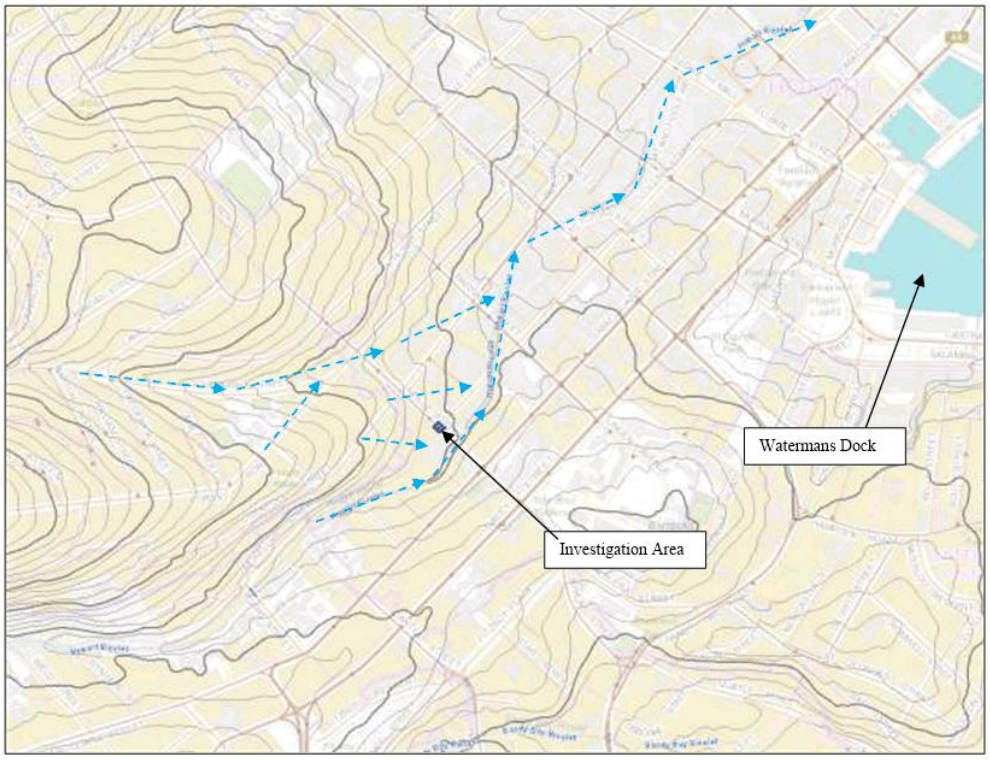

Figure 6 Contour Elevations and Inferred Surface and Groundwater Flow Direction

3.8 Groundwater

3.8.1 Potential Up-Gradient Contamination Sources

The site is situated along a low-lying landform directly adjacent to Hobart Rivulet, and at the base of the hills of West Hobart. The hills of West Hobart have historically been residential areas, and upgradient contamination from the north of the site is unlikely. Hobart Rivulet and the western edge of Hobart CBD has seen commercial and light industrial activities taken place for almost 200 years. Any potential legacy contamination at the site may be attributed to past industrial activities upstream.

3.8.2 Downgradient Ecosystem Receptors

The River Derwent at Watermans dock is approximately 800m east of the site. Hobart Rivulet is adjacent to the site, approximately 30 to 50m to the east of the site.

3.9 Potential Contamination Issues

3.9.1 Areas of Potential Concern

No specific areas of potential concern have been identified on the site. We have addressed potential contaminants (Section 3.9.2) across the investigation area – being the area of the proposed traffic signal development.

3.9.2 Contaminants of Potential Concern

Potential contaminants of potential concern (COPC) that have been considered include the following:

- Total Petroleum/Recoverable Hydrocarbons (TPH/TRH);
- Mono Aromatic hydrocarbons: Benzene, Toluene, Ethylbenzene, Xylene, Naphthalene (BTEXN);
- Polynuclear Aromatic Hydrocarbons (PAHs); and
- A suite of 15 Metals.

4 FIELD INVESTIGATION PROCEDURES

4.1 Works Summary

Site investigation works comprised of investigating excavations exposed during potholing, and collecting samples with a 65mm hand auger, works are summarised in Table 4 and Figure 7. Excavation profile descriptions are presented as borehole logs in Appendix 4

Table 4 Summary of Site Investigation Work Dates

Scope	Data	Lab Report	Details
Sample collection	20th January 2021	EM2100914 Primary Lab EM2101307 Rebatch testing EM2102079 Leachate testing	7 Primary soil samples collected from 6 excavations, 1 Duplicate sample and 1 Rinsate Blank sample were collected and analysed.

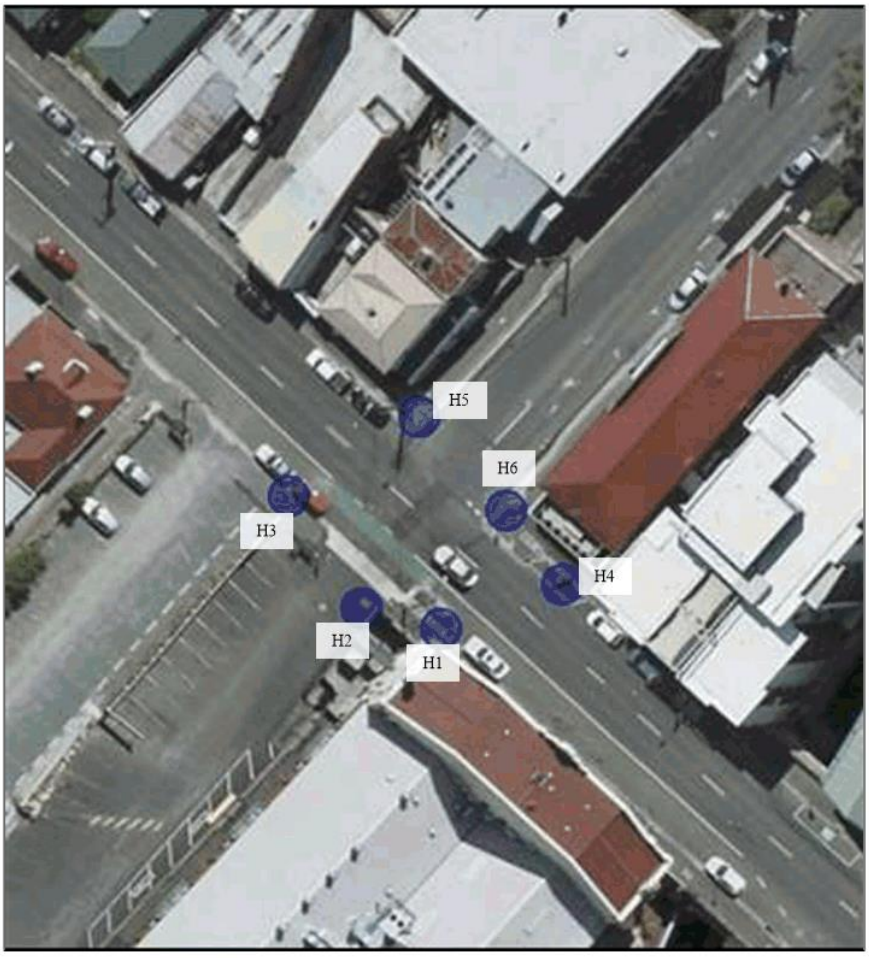

Figure 7 Borehole Plan (Borehole locations illustrated in blue)

4.2 Soil Investigation

4.2.1 Borehole Drilling

A total of six excavations were observed, and used for sampling for contamination impact. The excavations were undertaken by a vacuum truck as part of potholing operations. Soil was sampled with a 65mm hand auger, or by hand grab sample using disposable nitrile gloves.

Soil sampling was conducted per the National Environmental Protection Measure (NEPM ASC 2013) and AS4482 sampling guidelines. Table 5Table 5 presents a summary of the soil assessment methodology adopted at the site.

4.2.2 Soil Sampling

Soil sampling was conducted per the National Environmental Protection Measure (NEPM ASC 2013) and AS4482 sampling guidelines. Table 5 presents a summary of the soil assessment methodology adopted at the site.

Table 5 Summary of Soil Sampling Methods

Activity	Details / Comments
Drilling Method	Soil test pits were excavated by vacuum truck, samples were collected by 65mm hand auger or by hand grab sample using disposable nitrile gloves.
Soil Logging	Logging the soil was conducted in accordance with the unified soil classification system (USCS) as detailed in AS1726 (1993).
Decontamination of Sampling Equipment	Quantum Clean Laboratory Detergent (R213) was used to decontaminate reusable sampling equipment (hand auger) between each borehole sampling event.
Soil Screening	Collected samples were deemed to have not odour associated with hydrocarbon contamination, and screening for volatile fractions using a photoionisation Detector (PID) was deemed not necessary.
Laboratory Soil Sample Collection	In accordance with AS4482.2. All samples were collected using disposable nitrile gloves. Samples were selected for laboratory analysis at a variety of depths to account for contamination effects at different depths: • at 0.2m below ground surface (bgs) • at 0.4m below ground surface (bgs) • at 0.8m below ground surface (bgs) • at 0.9m below ground surface (bgs) A minimum number of samples were carefully selected which would provide enough information to delineate soil contamination.
Sample preservation	Samples were placed into a jar for laboratory analysis. Soil jars were placed in a pre-chilled cool box with ice bricks.
Sample holding times	Sample holding times were within acceptable range (based on NEPM ASC B3-2013) from collection to extraction.

4.2.3 Sample Analysis

Primary and QC samples were submitted to Analytical Laboratory Services (ALS), Springvale, Melbourne for analysis. A total of 9 samples (7 primary and 2 QC) were sent for analysis. Chain of Custody (COC) documentation was completed and is provided in Appendix 7 along with the Sample Receipt Notification (SRN) for each batch. A Rebatch was requested to analyse PAH which was overlooked in the original COC, and another Rebatch was requested to analyse leachate fractions as a result of high levels of PAH in two samples. COC and SRN for both rebatch testing events are also presented in Appendix 7. Table 6 presents a summary of the laboratory analyses undertaken.

Table 6 Overview of Soil and Groundwater Analysis and Quality Control

Analytes	Primary Soil Samples	Duplicate Soil Samples[a]	Rinse Blank[b]
TRH	7	1	1
BTEXN	7	1	1
PAH	7	1	1
Suite 15 Metals	7	1	1

Sampling Quality Control Standards (AS4482):
a – Duplicate and Inter-Laboratory Split samples, one (1) in twenty (20) primary samples
b– Single rinse sample per piece of equipment per day

Given metals were analysed, there was requirement to assess the following soil physical properties to determine soil threshold investigation levels: Soil grain class (sand/silt or clay); % Clay content; Cation exchange capacity (CEC); and Soil pH. The soil physical properties were based on knowledge of similar soil types encountered around the greater Hobart area.

5 QUALITY CONTROL

All Field and laboratory Quality Assurance and Quality Control (QA/QC) details and outputs are presented in Appendix 8.

5.1 Field

It is standard to expect up to 10% error in field duplication and up to 10% laboratory error. Therefore, in theory up to 20% error can be assumed on duplicate analysis. Some variation may exist in soil and groundwater because even though all efforts are made to split samples homogeneously, fragments of materials may bias samples in certain elements.

Relative Percentage Differences (RPDs) for the duplicate and triplicate samples where applicable are calculated using the method outlined below.

The acceptance criteria used for the RPDs depend on the levels of contaminants detected and the laboratory's Method Detection Limits. The closer the levels detected are to the MDL the greater the acceptable RPD. RPDs are calculated as follows:

- RPD <50% for low level results (<20 * MDL)
- RPD <30% for medium level results (20-100 * MDL)
- RPD <15% for high level results (>100 * MDL)
- No limit applies at <2 * MDL (Method Detection Limit)

Field QA/QC procedures and compliance are summarised in Table 7

Table 7 Soil Field QA/QC procedures and Compliance

QA/QC Requirement	Compliance	Comments
Appropriate sampling strategy used and representative samples collected	Yes	Sampling program was undertaken in accordance with AS4482.1-2005
Appropriate and well documented sample collection, handling, logging and transportation procedures.	Yes	Appropriate and well documented
Decontamination	Yes	Appropriate decontamination such as cleaning tools before sampling and between sample locations was undertaken
Chain-of-custody documentation completed	Yes	COC were completed in accordance with NEPM ASC Schedule B2, Section 5.4.5 and transported under strict COC procedures. The signed COC documents are included in this report, which includes the condition report on arrival of samples to the Laboratory, cross checking of sample identification and paperwork and preservation method.
Required number of splits: Duplicate & inter-lab splits: 1 per 20 primary samples	No	1 duplicate sample was collected as per AS4482.1-2005. An inter-laboratory split sample was not collected.
QA/QC samples reported RPD's within indicated MDL guidelines.	No	For H1 0.4 and Duplicate pairs, 52% of analytes complied. This could be attributed to the nature of the substrate, being a sandy matrix containing few clayey pieces of material, making homogenisation of samples difficult.
Required numbers of rinse blank samples collected with no laboratory detections?	Yes	One rinse blank sample was collected as per AS4482.1-2005.
Trip blanks collected with no laboratory detections?	NA	According to AS4482.2-1999, soil trip blanks are required where volatile hydrocarbons are discernible. This was not required.
Field blanks collected with no laboratory detections?	NA	According to Australian Standards, there is no requirement to collect field blanks, unless there is concern with cross contamination risks.
Samples delivered to the laboratory within sample holding times and with correct preservative	Yes	All samples were sent to the laboratory within holding times and correct preservative.

5.2 Laboratory

Soil laboratory QA/QC procedures and compliance are summarised in Table 8, Table 9 and Table 10

Table 8 Soil Laboratory QA/QC Procedures and Compliance for EM2100914

QA/QC Requirement	Compliance	Comments
All analyses NATA accredited	Yes	ALS Laboratories is NATA Accredited. Appropriate analytical methods used, in accordance with Schedule B(3) of the NEPM ASC 2013. Acceptable laboratory limits of reporting (LORs) adopted.
Arrival Temperature; recommended below 6°C	Yes	Sample arrival temperature was recorded at 1.2°C.
Method Blanks: zero to <Practical Quantitation Limit (PQL)	Yes	There were no method blank value outliers in the QCI report.
Laboratory Control Samples: 70% to 130% recovery for soil.	Yes	There were no laboratory control outliers in the QCI report.
Matrix spikes: 70% to 130% recovery for organics or 80%-120% recovery for inorganics	Yes	There were no matrix spike outliers in the QCI report.
Duplicate Samples: 0% to <20% RPD.	No	For Manganese in sample EM2100914-002 RPD exceeds LOR based limits.
Surrogates: 70% to 130% recovery	Yes	There were no surrogate recovery outliers in the QCI report.
Analysis holding time outliers	Yes	No hold-time outliers exist in the QCI report.
Quality Control Sample Frequency Outliers	No	For NEPM 2013 B3 & ALS QC Standard. TRH – Semivolatile Fraction; Laboratory Duplicates 0, expected 10, Matrix Spikes 0, expected 5.

Table 9 Soil Laboratory QA/QC Procedures and Compliance for Rebatch for PAH testing

QA/QC Requirement	Compliance	Comments
All analyses NATA accredited	Yes	ALS Laboratories is NATA Accredited. Appropriate analytical methods used, in accordance with Schedule B(3) of the NEPM ASC 2013. Acceptable laboratory limits of reporting (LORs) adopted.
Arrival Temperature; recommended below 6°C	Yes	Sample arrival temperature was recorded at 1.2°C and stored on site.
Method Blanks: zero to <Practical Quantitation Limit (PQL)	Yes	There were no method blank value outliers in the QCI report.
Laboratory Control Samples: 70% to 130% recovery for soil.	Yes	There were no laboratory control outliers in the QCI report.
Matrix spikes: 70% to 130% recovery for organics or 80%-120% recovery for inorganics	Yes	There were no matrix spike outliers in the QCI report.
Duplicate Samples: 0% to <20% RPD.	Yes	There were no duplicate sample outliers in the QCI report.
Surrogates: 70% to 130% recovery	Yes	There were no surrogate recovery outliers in the QCI report.
Analysis holding time outliers	No	The samples analysed were 1 day over analysis holding time.
Quality Control Sample Frequency Outliers	No	For NEPM 2013 B3 & ALS QC Standard. PAH Phenols; Laboratory Duplicates 0, expected 10, Matrix Spikes 0, expected 5.

Table 10 Soil Laboratory QA/QC Procedures and Compliance for Rebatch for Leachate testing

QA/QC Requirement	Compliance	Comments
All analyses NATA accredited	Yes	ALS Laboratories is NATA Accredited. Appropriate analytical methods used, in accordance with Schedule B(3) of the NEPM ASC 2013. Acceptable laboratory limits of reporting (LORs) adopted.
Arrival Temperature; recommended below 6°C	Yes	Sample arrival temperature was recorded at 1.2°C.
Method Blanks: zero to <Practical Quantitation Limit (PQL)	Yes	There were no method blank value outliers in the QCI report.
Laboratory Control Samples: 70% to 130% recovery for soil.	Yes	There were no laboratory control outliers in the QCI report.
Matrix spikes: 70% to 130% recovery for organics or 80%-120% recovery for inorganics	Yes	There were no matrix spike outliers in the QCI report.
Duplicate Samples: 0% to <20% RPD.	Yes	There were no duplicate sample outliers in the QCI report.
Surrogates: 70% to 130% recovery	Yes	There were no surrogate recovery outliers in the QCI report.
Analysis holding time outliers	No	The two samples analysed were 8 days over analysis holding time.
Quality Control Sample Frequency Outliers	No	For NEPM 2013 B3 & ALS QC Standard. PAH Phenols; Matrix Spikes 0, expected 5.

6 FIELD INVESTIGATION FINDINGS

6.1 Soil Bores

6.1.1 Geological Interpretation

The observed excavations consisted of predominantly fill, with natural clays observed in Holes 2 and 5 and gravels observed at depth in Hole 4. It is likely that the natural soil observed is derived from alluvial deposits in line with the geological mapping of the area.

6.1.2 Grain & Depth Class Interpretation

Grain size classifications are applied to all soils at the site to determine threshold screening level concentrations for hydrocarbons (and chromium) to assess soil ecological and human health risks.

Grain class threshold values are determined based on either the:

- sample grain size (in the case of ecological screening levels or chromium limits); or
- average grain class overlying the sample point (when assessing petroleum vapour screening levels) relative to the proposed finished floor level.

Table 11 provides a summary of the grain class averages for material overlying the samples.

Table 11 Summary of Grain Class Based on USCS Classification

Sample	Footing Excavation Depth^ - Red Fill Thickness^ - Green	Sample PVI Depth (m) Relative to Slab/Cut Depth	Soil Grain Size Class Averaging Above Soil Sample																	Attenuation			Petroleum Vapour Intrusion HSL Grain Class*	SAMPLE USCS
			GW	GP	GM	GC	SW	SP	SM	SC	ML	CL	OL	MH	CH	OH	CI	Rock (R)	Existing Pavement (P)	Crawl Space Thickness (m)	Proposed CONCRETE (CH)	Crawl Space	Biodegradation	
H1 0.4	0.5	0.4				0.3														NA	0.1	1.0	1.0	SAND	GC
H2 0.4	0.5	0.4				0.2											0.1			NA	0.1	1.0	1.0	CLAY	CI
H3 0.4	0.5	0.4				0.3														NA	0.1	1.0	1.0	SAND	GC
H4 0.8	0.5	0.8				0.7														NA	0.1	1.0	1.0	SAND	GC
H5 0.2	0.5	0.2				0.1														NA	0.1	1.0	1.0	CLAY	GC
H5 0.9	0.5	0.9				0.7									0.1					NA	0.1	1.0	1.0	SAND	CH
H6 0.4	0.5	0.4				0.3														NA	0.1	1.0	1.0	SAND	CI

Footnotes:
* Grain class is modified based on proposed building construction: concrete is interpreted to have similar vapour intrusion properties to clay and is therefore designated as CLAY within the grain size averaging assessment; backfill is inferred to comprise of gravel (GW)
< Sample has been collected from above the proposed excavation (base of slab or proposed ground level) and is not relevant in PVI risk assessment
^ Excavation depths are approximate and may vary due to change in services depths or overall building/footing construction design

6.1.3 Soil Contamination Observations

No surface staining or odour was observed in the soil during the site visit. Collected samples were not observed to have any odour consistent with hydrocarbon contamination.

7 SOIL ECOLOGICAL IMPACT ASSESSMENT

7.1 Protected Environmental Values

The requirement for protecting soil from contaminated activities in Tasmania is managed under the Environmental Management and Pollution Control Act 1994 (EMPCA) which states in Part 5A:

(2) An area of land is a contaminated site if –

(a) there is in, on or under that area of land a pollutant in a concentration that –

(i) is above the background concentration; and

(ii) is causing or is likely to be causing serious or material environmental harm or environmental nuisance, or is likely to cause serious or material environmental harm or environmental nuisance in the future if not appropriately managed;

Potential soil impact at the site is assessed through application of the following environmental investigation guidelines.

7.2 NEPM ASC (2013) Guidelines

The following ecological investigation guidelines are to be addressed in order to assess acceptable levels of risk to terrestrial ecosystems:

- NEPM ASC (2013) Ecological Investigation Levels (EIL's) – have been developed for selected metal and organic substances. EIL's depend on specific soil and physicochemical properties and land use scenarios and generally apply to the top two (2) metres of the soil profile (NEPM ASC 2013);
- NEPM ASC (2013) Ecological Screening Levels (ESL's) – have been developed for selected petroleum hydrocarbon compounds and total petroleum hydrocarbon fractions. ESL's broadly apply to coarse- and fine-grained soils and various land use scenarios within the top two (2) metres of the soil profile (NEPM ASC 2013).

Soil analytical results are compared against Ecological Screening Levels (ESL's) and EIL's limits presented in Table 12.

Table 12 Summary of Soil Contaminates Considered as part of this investigation, based on NEPM (2013) ASC

Investigation Levels (IL)	Analytes Investigated						
	Hydrocarbons				Metals		DDT
	BTEX	TRH (F1 to F4)	Benzo(a) pyrene (PAH)	Naphthalene (PAH)	Zn, Cu, Cr(III), Ni & As	Lead	
ESL's	Analysed	Analysed	Analysed				
EIL's				Analysed	Analysed	Analysed	Not Analysed

7.3 Guidelines

7.3.1 Ecological Screening Levels

The following compounds were compared against NEPM ASC (2013) Ecological Screening Levels (ESL's):

- BTEX;
- F1 to F4 TRH; and
- Benzo(a)pyrene (PAH)

Selection of ESL threshold investigation limits are set out in the NEPM ASC (2013) guidelines and require classification of the soil according to:

- Land use sensitivity:
    - Areas of ecological significance
    - Urban residential and public open space; and
    - Commercial and industrial.

- Dominant particle size passing through a 2 mm sieve into:
    - Coarse – sand sizes and greater; and
    - Fine – clay and silt sizes.

Adopted NEPM ASC (2013) soil and land use classifications are presented below.

7.3.2 Ecological Investigation Levels

The following compounds were compared against Environmental Investigation Levels:

- Lead;
- Nickel;
- Chromium;
- Zinc;
- Copper;
- Arsenic; and
- Naphthalene.

There was a requirement to classify the soil according to physicochemical properties to develop investigation limits for the above listed compounds. Adopted physicochemical parameters are presented in the results tables.

Selection of EIL threshold investigation limits are set out in the NEPM ASC (2013) guidelines and require classification of the soil per specific soil and physicochemical properties which are presented in the results tables. The adopted land use scenarios presented in Table 13.

Table 13 Adopted Land Use Scenario for the Soil Bores

Land Use Scenario	Applicable Soil Bores
Areas of Ecological Significance	
Urban Residential & Public Open Space	
Commercial & Industrial	*All soil bores*

Based on a preliminary assessment of site soil conditions, the following physicochemical properties are applied to assess guideline EIL's:

- Clay content consistent with field observations;
- A soil pH and cation exchange capacity (CEC) consistent with Table 14.

Table 14 Cation Exchange and Clay content, Adopted for the Site

Soil Physicochemical Properties			
USCS	Clay %	CEC	pH
R	100.00	10.00	7.0
GW	0.00	10.00	7.0
GP	0.00	10.00	7.0
GM	10.00	15.00	7.0
GC	30.00	20.00	7.0
SW	0.00	10.00	7.0
SP	0.00	10.00	7.0
SM	10.00	15.00	7.0
SC	20.00	20.00	7.0
ML	30.00	20.00	7.0
CL	100.00	35.00	7.0
OL	50.00	35.00	7.0
MH	30.00	35.00	7.0
CH	100.00	45.00	7.0
OH	100.00	60.00	7.0
PT	100.00	80.00	7.0
P	0.00	0.00	7.0
CM	100.00	35.00	7.0
CI	100.00	35.00	7.0
Rock	0.00	10.00	6.0

7.4 Findings

7.4.1 Ecological Screening Levels

Laboratory analytical results are presented in Appendix 9. Table 15 compares soil analytical results against relevant NEPM ASC (2013) ESL's. Concentrations which exceeded laboratory limit of reporting (LOR) are highlighted in bold, ESL exceedances are highlighted with a coloured cell.

The concentration of Benzo(a)pyrene was 1-2x above ESL in H6 0.4 and 20-50x above ESL in both H1 0.4 and H3 0.4.

Table 15 Summary of Soil Analytical Results Compared with ESL's for commercial/ industrial land use

NEPM Ecological Screening Levels for Soil				BTEX				PAH	TRH			
Bold - Indicates LOR Exceedances X - Indicates Sample has been Excavated				Benzene	Toluene	Ethylbenzene	Xylenes	Benzo(a)pyrene	F1 (C6 - C10)	F2 (>C10 - C16)	F3 (>C16 - C34)	F4 (>C34 - C40)
Colour Shading - Indicates ESL Exceedances: >1 x, * 2-5 x, ** 5-20 x, *** 20-50 x, **** >50 x				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Sample ID	Sample Date	Soil Texture Class (fine / coarse)	Land Use	LOR 0.2	LOR 0.5	LOR 0.5	LOR 0.5	LOR 0.5	LOR 10	LOR 50	LOR 100	LOR 100
H1 0.4 X	20/1/21	C	COM/IND	<0.2	<0.5	<0.5	<0.5	**15.6*** **	<10	<50	**640**	<100
H2 0.4 X	20/1/21	F	COM/IND	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100
H3 0.4 X	20/1/21	C	COM/IND	<0.2	<0.5	<0.5	<0.5	**18.4*** **	<10	<50	**220**	<100
H4 0.8 X	20/1/21	C	COM/IND	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100
H5 0.2 X	20/1/21	C	COM/IND	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100
H5 0.9 X	20/1/21	F	COM/IND	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100
H6 0.4 X	20/1/21	F	COM/IND	<0.2	<0.5	<0.5	<0.5	**1.1**	<10	<50	<100	<100

7.4.2 Ecological Investigation Levels

Laboratory analytical results are presented in Appendix 9. Table 16 compares soil analytical results against relevant EIL's. Concentrations which exceeded laboratory LOR are reported in the table, EIL exceedances would be highlighted with a coloured cell. There were no exceedances at commercial/industrial land use guidelines.

Table 16 Soil Analytical Results Compared Against Ecological Investigation Levels commercial/ industrial land use

NEPM Ecological Investigation Levels for Soil													
Bold - Indicates LOR Exceedances X - Indicates Sample Within Inferred Excavation													
Colour Shading - Indicates EIL Exceedances: >1 x, * 2-5 x, ** 5-20 x, *** 20-50 x, **** >50 x													
Sample ID	Sample Date	EIL Land Use Sensitivity Class	Soil CEC (cmolc/kg)	Soil pH	Soil Texture Class (fine /coarse)	Copper (CEC)	Copper (pH)	Nickel	Zinc	Chromium III	Lead	Arsenic	Naphthalene
						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
H1 0.4 X	20/1/21	COM/IND	20	7 (3)	C	95	95	10	90	<2	17	<5	<1
H2 0.4 X	20/1/21	COM/IND	35	7 (3)	F	26	26	19	148	19	20	8	<1
H3 0.4 X	20/1/21	COM/IND	20	7 (3)	C	52	52	11	122	10	183	<5	<1
H4 0.8	20/1/21	COM/IND	20	7 (3)	C	29	29	10	25	5	<5	<5	<1
H5 0.2 X	20/1/21	COM/IND	20	7 (3)	C	118	118	7	36	<2	<5	<5	<1
H5 0.9	20/1/21	COM/IND	45	7 (3)	F	18	18	14	5	8	7	<5	<1
H6 0.4 X	20/1/21	COM/IND	35	7 (3)	F	30	30	10	9	6	8	<5	<1

pH Designation:
(1) Using 0.01M CaCl2 extract. Rayment, G.E. and Lyons, D.J. (2011). "Soil Chemical Methods – Australasia". 495+20 pp. CSIRO Publishing, Melbourne.
(2) pHF (1:5). Adjusted by subtracting 0.75 with +/- 0.25 error to calibrate to the CaCl2 method (per comm. ALS Brisbane Acid Sulphate Soils Laboartory). Methods in accordance with Ahern, C.R., Stone Y., and Blunden B. (1998b). 'Acid Sulfate Soils Assessment Guidelines'. Acid Sulfate Soils Management Advisory Committee, Wollongbar, NSW, Australia.
(3) Classified in accordance with parent material typical soil pH as per the Tasmanian soils database

8 SOIL HUMAN HEALTH DIRECT CONTACT ASSESSMENT

8.1 Guidelines

Guidelines presented are based on potential exposure of human receptors to soil impact which may include:

- Trench workers repairing or building services (typically to 1 m bgs). This classification is not dependent on the land use class.
- Onsite workers which may be exposed to potential shallow soil impact in non-paved areas of the site; and
- Onsite excavation works which may include basement carparks and deep foundations.

8.1.1 Land Use Classification

The NEPM ASC (2013) guidelines have been referenced to ensure that the correct land use and density category has been adopted for the site and the surrounding properties (where applicable). As per NEPM ASC 2013 guidelines, the adopted land use class is dependent on the building density and the opportunity for soil access by site occupants (exposure to potentially impacted soil). Aspects needing to be considered include:

- Whether the site is of sensitive land use such as a childcare centre, preschool, primary school or aged care facility in which case land use Class A is applicable;
- The percentage of paved area to determine direct contact exposure risk and therefore classification as low or high density; and
- Classification based on residential, recreational or commercial/industrial setting.

8.1.2 Adopted Land Use Classification

The adopted land use class is presented in Table 17. Land use class is based on the opportunity for soil access as per NEPM ASC 2013 guidelines. Soil access anticipated on the site is relating to the instillation of traffic signalling infrastructure, with excavated areas being covered by road and footpath at the completion of the works. Soil access is anticipated to include potential construction workers, and potential trenchworks on site.

Table 17 Summary of Land Use Setting and Density for Determining Exposure Risk

Soil Bores	Construction Phase	Location	Land Use	Pathway	Land Use Class
All soil	During	Site	Construction worker and trench workers	ALL	D and trench worker specific
		Offsite	Neighbouring commercial properties and pedestrians	DI	D, C
	Post	Site	Future trench workers	ALL	D and trench worker specific
		Site	No future site users are anticipated to be in contact with soil as the area will be sealed	NA	-

DC – Dermal Contact - Trench Worker Guidelines (CRC CARE 2013); DI – Dust Inhalation - HIL Guidelines (NEPM ASC 2013); SI – Soil Ingestion - HIL Guidelines (NEPM ASC 2013) or ALL – All of above

8.1.3 Health Investigation & Screening Levels

The main exposure pathways and methods for assessing heath risk from contaminated soils are presented in Table 18.

Table 18 Summary of Exposure Pathways and Preliminary (Tier 1) Methods for Assessing Human Exposure Risk

Exposure Scenario	Contaminant Type	Tier 1 Assessment Method	Reference
Vapour Inhalation – Indoor (PVI)	Petroleum Hydrocarbons	HSL's (addressed in PVI sections)	NEPM ASC (2013)
Vapour Inhalation – Trench (PVI)			CRC CARE (Friebel & Nadebaum, 2011)
Dermal Contact		HSL's	
Dust Inhalation	Metals PAH's Chlorinated Solvents	Health Investigation Levels (HIL's)	NEPM ASC (2013)
Soil Ingestion			

PVI – Petroleum Vapour Intrusion

8.2 Findings

8.2.1 Dermal Contact - Petroleum Hydrocarbons

Laboratory analytical results are presented in Appendix 9. Table 19 presents soil hydrocarbon analytical results compared against CRC CARE (Friebel & Nadebaum, 2011) HSL guidelines for assessing dermal contact risk. Concentrations which exceeded laboratory LOR are highlighted in bold, HSL exceedances would be highlighted with a coloured cell indicating the highest HSL land used class which is exceeded.

There were no hydrocarbon guideline exceedances for dermal contact. No dermal contact risk has been identified at commercial/industrial limits.

Table 19 Soil Analytical Results Compared Against CRC CARE (Friebel & Nadebaum, 2011) Guidelines for Dermal Contact

CRC CARE Health Screening Level Dermal Contact Hazard from Soil Hydrocarbons'		EP080: BTEXN					EP080/071: TRH			
		Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene	C6 - C10 Fraction	>C10 - C16 Fraction	>C16 - C34 Fraction	>C34 - C40 Fraction
Units		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR		0.2	0.5	0.5	0.5	1	10	50	100	100
HSL D Commercial/Industrial		430	99000	27000	81000	11000	26000	20000	27000	38000
Intrusive Maintenance Worker		1100	120000	85000	130000	29000	82000	62000	85000	120000
Date	Sample									
20/01/2021	H1 0.4 X	<0.2	<0.5	<0.5	<0.5	<1	<10	<50	**640**	<100
20/01/2021	H2 0.4 X	<0.2	<0.5	<0.5	<0.5	<1	<10	<50	<100	<100
20/01/2021	H3 0.4 X	<0.2	<0.5	<0.5	<0.5	<1	<10	<50	**220**	<100
20/01/2021	H4 0.8 X	<0.2	<0.5	<0.5	<0.5	<1	<10	<50	<100	<100
20/01/2021	H5 0.2 X	<0.2	<0.5	<0.5	<0.5	<1	<10	<50	<100	<100
20/01/2021	H5 0.9 X	<0.2	<0.5	<0.5	<0.5	<1	<10	<50	<100	<100
20/01/2021	H6 0.4 X	<0.2	<0.5	<0.5	<0.5	<1	<10	<50	<100	<100

8.2.2 Dust Inhalation & Soil Ingestion

Laboratory analytical results are presented in Appendix 9. Soil analytical results are compared against combined dust inhalation and soil ingestion risk is assessed through the application of NEPM ASC (2013) Health Investigation Levels (HILs) for exposure to soil contaminants are presented in Table 20. Concentrations which exceeded laboratory LOR would be highlight in bold (except for the metals), and HIL exceedances would be highlighted with a coloured cell indicating the highest HIL land used class which is exceeded. There were no guideline exceedances for dust inhalation and soil ingestion and no risk identified.

Table 20 Soil Analytical Results Compared Against NEPM ASC (2013) Health Investigation Levels Guidelines

Bold - Indicates LOR Exceedance in Non Metalic Compounds		EA055: Moisture Content	EG005T: Total Metals by ICP-AES															EP075(SIM)B: Polynuclear Aromatic Hydrocarbons																				
NEPM Health Investigation Levels (HIL's) Dust Inhalation and Soil Ingestion Assessment X - Indicates Sample Within Proposed Excavation Zone		Moisture Content	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium Total	Cobalt	Copper	Lead	Manganese	Nickel	Selenium	Vanadium	Zinc	Mercury	Naphthalene	Acenaphthylene	Acenaphthene	fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benz[a]anthracene	Chrysene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-cd)pyrene	Dibenz(a,h)anthracene	Benzo(g,h,i)perylene	PAHs	Benzo(a)pyrene TEQ (WHO)
Units		%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR		1	5	10	1	50	1	2	2	5	5	5	2	5	5	5	0.1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
HIL D Commerial/Industrial	☑ HIL D		3000		500	300000	900		4000	240000	1500	60000	6000	10000		400000	730																				
Sample date	Sample ID																																				
20/01/2021	H1 0.4 X	14.5	<5	20	<1	<50	<1	<2	10	95	17	157	10	<5	49	90	<0.1	0.9	3.9	<0.5	1.0	26.5	7.0	35.5	34.8	16.4	14.9	15.4	6.4	15.6	6.1	1.7	7.8	**194**	**22**
20/01/2021	H2 0.4 X	29.6	8	150	1	<50	<1	19	30	26	20	468	19	<5	79	148	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
20/01/2021	H3 0.4 X	23.2	<5	80	<1	<50	<1	10	13	52	183	208	11	<5	65	122	0.3	0.9	3.9	<0.5	2.0	28.1	7.2	41.0	40.8	17.8	16.1	17.3	7.5	18.4	7.6	1.9	9.7	**220**	**25.6**
20/01/2021	H4 0.8 X	20.2	<5	40	<1	<50	<1	5	8	29	<5	160	10	<5	48	25	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
20/01/2021	H5 0.2 X	7.5	<5	20	<1	<50	<1	<2	11	118	<5	197	7	<5	57	36	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
20/01/2021	H5 0.9 X	28.2	<5	410	<1	<50	<1	8	27	18	7	212	14	<5	70	5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
20/01/2021	H6 0.4 X	20.2	<5	70	<1	<50	<1	6	13	30	8	93	10	<5	56	9	0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.6	1.6	1.1	1.0	1.2	<0.5	1.1	<0.5	<0.5	0.6	**8**	**1.3**

9 INDOOR INHABITANT PVI ASSESSMENT – HSL's

This PVI assessment has been conducted in accordance with relevant CRC CARE Technical Documentation and NEPM 2013 guidelines presented in references section of this report. The HSL assessment approach is generally the first (Tier 1) investigation phase adopted for assessing PVI risk at petroleum hydrocarbon (PHC) impacted sites. HSL guidelines have been applied for samples collected from the site to account for risks that may be associated with volatile hydrocarbon vapour intrusion into confined spaces where there may be an inhalation risk through longer term exposure. This does not constitute a full vapour risk assessment but provides additional information from which to further quantify any risk.

A detailed investigation (Tier 2 to 3) is recommended over an HSL assessment where an acute risk has been identified at the site (CRC CARE 2013) because of:

- Migrating product on surface soils beneath buildings;
- Strong PHC odours;
- Flammable risk in confined spaces; and/or
- Health complaints from occupants.

Based on the site visits, none of the above conditions have been identified at the site. If the outcome of this Tier 1 assessment reveals HSL exceedances for hydrocarbon vapour intrusion, a more detailed (Tier 2) assessment will be required to further evaluate the human health risk.

PVI risk is initially interpreted through the development of HSL threshold limits from the following classifications:

- The geology and or hydrogeology of the investigation point; and
- Land use sensitivity:

The resulting HSL threshold limits are compared with laboratory analytical results.

9.1 Selected Media for Assessing PVI Risk

Table 21 presents a summary of the preferred HSL approach to assessing PVI risk. In this case, all soil investigated was within the excavation zone and within the water table.

Table 21 Preferred Methods for Determining Site PVI Risk

Media Analysed	Method	Limitations	Order of Preference
Soil Gas	Concentrations of a soil gas through a soil vapor probe	This approach provides the most reliable data in interpreting PVI risk, although direct modelling should be applied if concentrations exceed HSL threshold limits.	Primary
Groundwater	Concentrations of PHC in groundwater through deployment of monitoring wells	More robust and reliable that soil in determining onsite and in particular, offsite risks. Determining PVI risk based on groundwater is inherently conservative when interpreting vapour risk to account for not readily discernible preferential pathways. Reference may be drawn to alternative assessment approaches: 1) Application of site-specific conditions to the CRC CARE model for assessing PVI risk 2) Soil gas interpretation for areas where a PVI risk is identified from groundwater analysis.	Secondary
Soil	Concentrations of PHC in soil	Concentrations in soil may be subject variability due to soil moisture, organic content and oxygen ingress all which create significant bias in threshold values. Reliance is place on utilizing groundwater analysis over soil. Soil results provide localised information.	Tertiary

9.2 Land Use Class

For surrounding properties, the potential PVI risk is characterized through application of CRC CARE HSL's for each individual property based on their existing land use (NEPM 2013; Friebel & Nadebaum 2010). The CRC CARE guidelines have been referenced to ensure that the correct land use and density category has been adopted for surrounding land use to ensure health risks are consistent with the HSL models. Aspects considered include the:

- Sensitivity of the existing or potential land use;
- Percentage of paved area for defining potential vapour migration risk;
- Type of basement garage which may influence the confinement of PHC vapors;
- Presence of a slab or cavity for discerning vapour intrusion risk.

If hydrocarbon impacted soil is discerned at the site, consideration is given to downgradient receptors. Where applicable, land use class therefore considers:

- Downgradient receptors where onsite HSL exceedances have been identified in soil; and
- Variations in land use for different parts of the proposed development.

The following land use classes are applied:

- *HSL D for commercial/industrial spaces* - All test holes

9.3 Soil Assessment

Laboratory analytical results are presented in Appendix 9. Table 22 presents the results against a potential indoor vapour risk. Concentrations which exceeded laboratory LOR would be highlighted in bold. HSL exceedances would be highlighted with a coloured cell.

There was no indoor vapour risk identified.

Table 22 Soil Analytical Results Compared Against HSL D for Indoor Vapour Risk

Soil Hydrocarbon HSL's for Assessing Indoor Vapour Intrusion (NEPM 2013) Soil Sample Analysis					EP080: BTEXN					EP080/071: TRH	
Bold - Indicates LOR Exceedances					Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene	F1	F2
Colour Shading - Indicates HSL Exceedances: >1 x, * 2-5 x, ** 5-20 x, *** 20-50 x, **** >50 x											
Sample ID	Sample Date	Depth Class	Grain Class	HSL	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
					LOR 0.2	LOR 0.5	LOR 0.5	LOR 0.5	LOR 1	LOR 10	LOR 50
H1 0.4	20/01/2021	0 - 1	SAND	D	<0.2	<0.5	<0.5	<0.5	<1	<10	<50
H2 0.4	20/01/2021	0 - 1	CLAY	D	<0.2	<0.5	<0.5	<0.5	<1	<10	<50
H3 0.4	20/01/2021	0 - 1	SAND	D	<0.2	<0.5	<0.5	<0.5	<1	<10	<50
H4 0.8	20/01/2021	0 - 1	SAND	D	<0.2	<0.5	<0.5	<0.5	<1	<10	<50
H5 0.2	20/01/2021	0 - 1	CLAY	D	<0.2	<0.5	<0.5	<0.5	<1	<10	<50
H5 0.9	20/01/2021	0 - 1	SAND	D	<0.2	<0.5	<0.5	<0.5	<1	<10	<50
H6 0.4	20/01/2021	0 - 1	SAND	D	<0.2	<0.5	<0.5	<0.5	<1	<10	<50

10 TRENCH WORKER PVI ASSESSMENT – HSL's

10.1 Classification

The following Health Screening Assessment is based on hydrocarbon vapour intrusion risk to subsurface excavation workers within excavations. This is assessed through analysis of vapours from soil and soil vapours. Groundwater is generally not used to assess risk as threshold limits for all depth and grain classes are non-limiting. Land use classes are not applicable when assessing vapour intrusion into trenches.

Soil and soil vapour HSL's for assessing hydrocarbon risk to maintenance workers are based on CRC CARE Technical Report 10 guidelines (Friebel & Nadebaum 2011) and the following variables:

- Dominant grain size class of material at the soil sample depth or based on the dominant grain class of the backfill material based on US Agriculture Soil Classification System (SCS) and partitioning into either sand, silt or clay; and
- Classifying soil according to depth ranges: 0 to 2 m; 2 to 4 m; 4 to 8 m; and greater than 8 m;

10.2 Findings

Laboratory analytical results are presented in Appendix 9. Summary of Soil Analytical Results Compared against HSL's for Assessing PVI Risk to Trench Workers are presented in Table 23. Concentrations that exceeded laboratory LOR would be highlighted in bold, and if there were any HSL exceedances they would be highlighted with a coloured cell. There were no exceedances of the CRC CARE HSL guidelines for Assessing PVI Risk to Trench Workers and no risk identified.

Table 23 Summary of Soil Analytical Results Compared against HSL's for Assessing PVI Risk to Trench Workers

CRC CARE Health Screening Level Assessment for PHC Inhalation Risk To Trench Workers From Soil Sample Analysis				EP080: BTEXN					EP080/071: TRH	
Bold - Indicates LOR Exceedances				Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene	C6 - C10 Fraction	>C10 - C16 Fraction
Dark Grey Shading - Indicates HSL Exceedances: >1 x, * 2-5 x, ** 5-20 x, *** 20-50 x, **** >50 x										
Sample ID	Sample Date	Depth Class	Grain Class	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
				LOR 0.2	LOR 0.5	LOR 0.5	LOR 0.5	LOR 1	LOR 10	LOR 50
H1 0.4	20/01/2021	0 to 2m	SAND	<0.2	<0.5	<0.5	<0.5	<1	<10	<50
H2 0.4	20/01/2021	0 to 2m	CLAY	<0.2	<0.5	<0.5	<0.5	<1	<10	<50
H3 0.4	20/01/2021	0 to 2m	SAND	<0.2	<0.5	<0.5	<0.5	<1	<10	<50
H4 0.8	20/01/2021	0 to 2m	SAND	<0.2	<0.5	<0.5	<0.5	<1	<10	<50
H5 0.2	20/01/2021	0 to 2m	CLAY	<0.2	<0.5	<0.5	<0.5	<1	<10	<50
H5 0.9	20/01/2021	0 to 2m	SAND	<0.2	<0.5	<0.5	<0.5	<1	<10	<50
H6 0.4	20/01/2021	0 to 2m	SAND	<0.2	<0.5	<0.5	<0.5	<1	<10	<50

11 SOIL DISPOSAL ASSESSSMENT

11.1 Guidelines

Soil which is excavated from the site for landfill disposal is to be assessed against Information Bulletin 105 (IB105) for Classification and Management of Contaminated Soil for Disposal. The EPA uses four categories to classify contaminated soil as per Table 24:

- (Level 1) Fill Material;
- (Level 2) Low Level Contaminated Soil;
- (Level 3) Contaminated Soil; and
- (Level 4) Contaminated Soil for Remediation.

Fixed numerical values are presented for soil concentrations and leachable fraction concentrations.

Table 24 Summary of IB105 Classification Guidelines

	Classification (with reference to Table 2)	Controlled Waste[1]	Comments
Fill Material[2] (Level 1)	Soil that exhibits levels of contaminants below the limits defined under *Fill Material* in Table 2.	Unlikely	Soil classified as *Fill Material* can still be a 'pollutant' under the *Environmental Management and Pollution Control Act 1994* and needs to be responsibly managed.
Low Level Contaminated Soil (Level 2)	Soil that exhibits levels of contaminants above the limits defined under *Fill Material* but below the limits defined under *Low Level Contaminated Soil* in Table 2.	Likely	Where leachable concentrations have not been prescribed, maximum total concentrations will be used to classify the soil.
Contaminated Soil (Level 3)	Soil that exhibits levels of contaminants above the limits defined under *Low Level Contaminated Soil* but below the limits defined under *Contaminated Soil* in Table 2.	Yes	Where leachable concentrations have not been prescribed, maximum total concentrations will be used to classify the soil.
Contaminated Soil for Remediation (Level 4)	Soil that exhibits levels of contaminants above the limits defined under *Contaminated Soil* in Table 2 (regardless of the maximum total concentrations) is generally ***not*** considered acceptable for off-site disposal without prior treatment.	Yes	Soil that contains contaminants that do not have criteria for leachable concentrations (*e.g.* petroleum hydrocarbons), and the levels of contaminants exceed the maximum total concentrations listed in *Contaminated Soil*, are generally classified as *Contaminated Soil for Remediation*.

[1] Controlled Waste is defined in the *Environmental Management and Pollution Control Act 1994*.
[2] Criteria for *Fill Material* are the limits set by the Director for the purposes of R.9(2)(a)(ii) in the *Regulations*.

11.2 Findings

The soil samples have been compared against IB105 guidelines for potential future soil disposal, see Table 25. Given high levels of PAH parameters, the samples were then rebatched to test leachate fractions, see Table 26. In IB105 Leachate fractions take precedence over dry weight testing, the lower results from leachate testing is indicative of PAH parameters being present in less mobile forms.

After leachate testing, the following conclusions can be made:

- The soil is equivalent to Level 3 (Contaminated Soil) in sample 'H1 0.4' due to PAH parameters Benzo(a)pyrene and Benzo(a)pyrene(TEQ).
- The soil is equivalent to Level 2 (Low Level Contaminated Soil) in four of the seven samples due to; Barium, Copper, Benzo(a)pyrene and Benzo(a)pyrene(TEQ).
- The soil tested from the remaining two samples is equivalent to Level 1 (Clean Fill).

Table 25 Soil Analytical Results Compared Against IB105 (Dry Weight) Investigation Limits for soil Disposal

Information Bulletin 105 Classification and Management of Contaminated Soil For Disposal		Arsenic	Barium	Beryllium	Cadmium	Chromium Total	Copper	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	Zinc	Benzo(a)pyrene	C6 - C9 Fraction	C10 - C36 Fraction (sum)	Sum of polycyclic aromatic hydrocarbons	Benzene	Toluene	Ethylbenzene	Total Xylenes
Unit		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR		5	10	1	1	2	5	2	5	5	0.1	2	5	5	0.5	10	50	0.5	0.2	0.5	0.5	0.5
Investigation Level Selected																						
IB105 Level 1		<20	<300	<2	<3	<50	<100	<100	<300	<500	<1	<60	<10	<200	<0.08	<65	<1000	<20	<1	<1	<3	<14
IB105 Level 2		20	300	2	3	50	100	100	300	500	1	60	10	200	0.08	65	1000	10	1	1	3	14
IB105 Level 3		200	3000	40	40	500	2000	200	1200	5000	30	600	50	14000	2	650	5000	40	5	100	100	180
IB105 Level 4		750	30000	400	400	5000	7500	1000	3000	25000	110	3000	200	50000	20	1000	10000	200	50	1000	1080	1800
20/01/2021	H1 0.4 X	<5	20	<1	<1	<2	95	10	17	157	<0.1	10	<5	90	15.6	<10	690	184	<0.2	<0.5	<0.5	<0.5
20/01/2021	H2 0.4 X	8	150	1	<1	19	26	30	20	468	<0.1	19	<5	148	<0.5	<10	<50	<0.5	<0.2	<0.5	<0.5	<0.5
20/01/2021	H3 0.4 X	<5	80	<1	<1	10	52	13	183	208	0.3	11	<5	122	18.4	<10	140	220	<0.2	<0.5	<0.5	<0.5
20/01/2021	H4 0.8 X	<5	40	<1	<1	5	29	8	<5	160	<0.1	10	<5	25	<0.5	<10	<50	<0.5	<0.2	<0.5	<0.5	<0.5
20/01/2021	H5 0.2 X	<5	20	<1	<1	<2	118	11	<5	197	<0.1	7	<5	36	<0.5	<10	<50	<0.5	<0.2	<0.5	<0.5	<0.5
20/01/2021	H5 0.9 X	<5	410	<1	<1	8	18	27	7	212	<0.1	14	<5	5	<0.5	<10	<50	<0.5	<0.2	<0.5	<0.5	<0.5
20/01/2021	H6 0.4 X	<5	70	<1	<1	6	30	13	8	93	0.2	10	<5	9	1.1	<10	<50	8.2	<0.2	<0.5	<0.5	<0.5

Table 26 Soil Analytical Results Compared Against IB105 (Leachate) Investigation Limits for soil Disposal

Information Bulletin 105 Classification and Management of Contaminated Soil For Disposal Leachable Fraction *Italic/** - Based On Soil (Total) Limit **Bold** - Based On Leach Limit		Arsenic	Barium	Beryllium	Cadmium	Chromium Total	Copper	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	Zinc	Benzo(a)pyrene	C6 - C9 Fraction	C10 - C36 Fraction (sum)	Benzo(a)pyrene (TEQ)	Benzene	Toluene	Ethylbenzene	Total Xylenes
Unit		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L			µg/L	µg/L	µg/L	µg/L	µg/L
LOR		0.1	0.1	0.05	0.05	0.1	0.1		0.1	0.1	0.001	0.1	0.1	0.1	0.5			0.5	1	2	2	2
Investigation Level Selected																						
IB105 Level 1																						
IB105 Level 2		<0.5	<35	<1	<0.1	<0.5	<10		<0.5	<25	<0.01	<1	<0.1	<25	<0.5			<0.5	<50	<1400	<3000	<5000
IB105 Level 3		0.5	35	1	0.1	0.5	10		0.5	25	0.01	1	0.1	25	0.5			0.5	50	1400	3000	5000
IB105 Level 4		5	350	4	0.5	5	100		5	250	0.1	8	1	250	5				500	14000	30000	50000
20/01/2021	H1 0.4 X														**1.8**			*2.2**				
20/01/2021	H2 0.4 X																					
20/01/2021	H3 0.4 X														**<0.5**			**<0.5**				
20/01/2021	H4 0.8																					
20/01/2021	H5 0.2 X						*															
20/01/2021	H5 0.9		*																			
20/01/2021	H6 0.4 X														*							

12 CONCEPTUAL SITE MODEL

12.1 Potential Contaminants

The soil at the site is covered by road and footpath, after works are completed the soil will be covered for the area to be continued to be used for road and footpath. Consequently the opportunity for human contact with the soil will be during construction, and the opportunity for ecological impact from contaminated soil will be due to soil movement during construction.

The site is at a low lying area adjacent to the Hobart Rivulet. There is a long history of industrial uses along Hobart Rivulet throughout the 1800s, and a legacy of contamination may be attributed to past industrial activities upstream.

The area directly upslope of the site (to the west of the site) features residential houses, and appears to not have hosted any potentially contaminating activities.

An area of Liverpool Street has hosted several automotive workshops, this area is cross gradient of the site (north of the site), and not likely to impact the site.

Fill of undetermined origins is present on the site, and may pose a source of potential contamination.

The potential contaminants investigated are those typical of an urban environment, these include; Total Petroleum/Recoverable Hydrocarbons (TPH/TRH), Mono Aromatic hydrocarbons: Benzene, Toluene, Ethylbenzene, Xylene, Naphthalene (BTEXN), Polynuclear Aromatic Hydrocarbons (PAHs), and a suite of 15 Metals.

Figure 8 illustrates potential risks that may be associated with potential site contamination. Potential pathways have been identified and ruled out in the Conceptual Site Model.

12.2 Potential Human Receptors

There are limited human receptors given the site is covered with roads and footpaths. The potential human receptors considered during this investigation are for future potential contact with soil underlying the site during the construction phase of the development, and future potential trench workers (commercial land users / trench worker specific).

12.3 Potential Ecological Receptors

The closest ecological receptors are Hobart Rivulet and the River Derwent. Given the site is covered with roads and footpaths, the opportunity for contaminated soil at the site affecting ecological receptors, would only be during the construction phase of the development, if soil was to be excavated and then sediments move from the site to potential ecological receptors.

12.4 Identified Receptors

12.4.1 Identified Human Receptors

No NEPM ASC (2013) human Health Investigation Limits were found to be exceeded, and the soil on the Site is covered by concrete, hence no human health risks have been identified.

12.4.2 Identified Ecological Receptors

Three of the seven samples was found to exceed NEPM ASC (2013) Ecological Screening Levels for Benzo(a)pyrene. Benzo(a)pyrene may impact nearby ecological receptors if sediment erosion is not managed on the site. Leachate testing (Section 11.2) yielded much lower levels of Benzo(a)pyrene, suggesting that this contaminant is not in a very mobile form, and if correctly contained, should not pose a risk to ecological receptors.

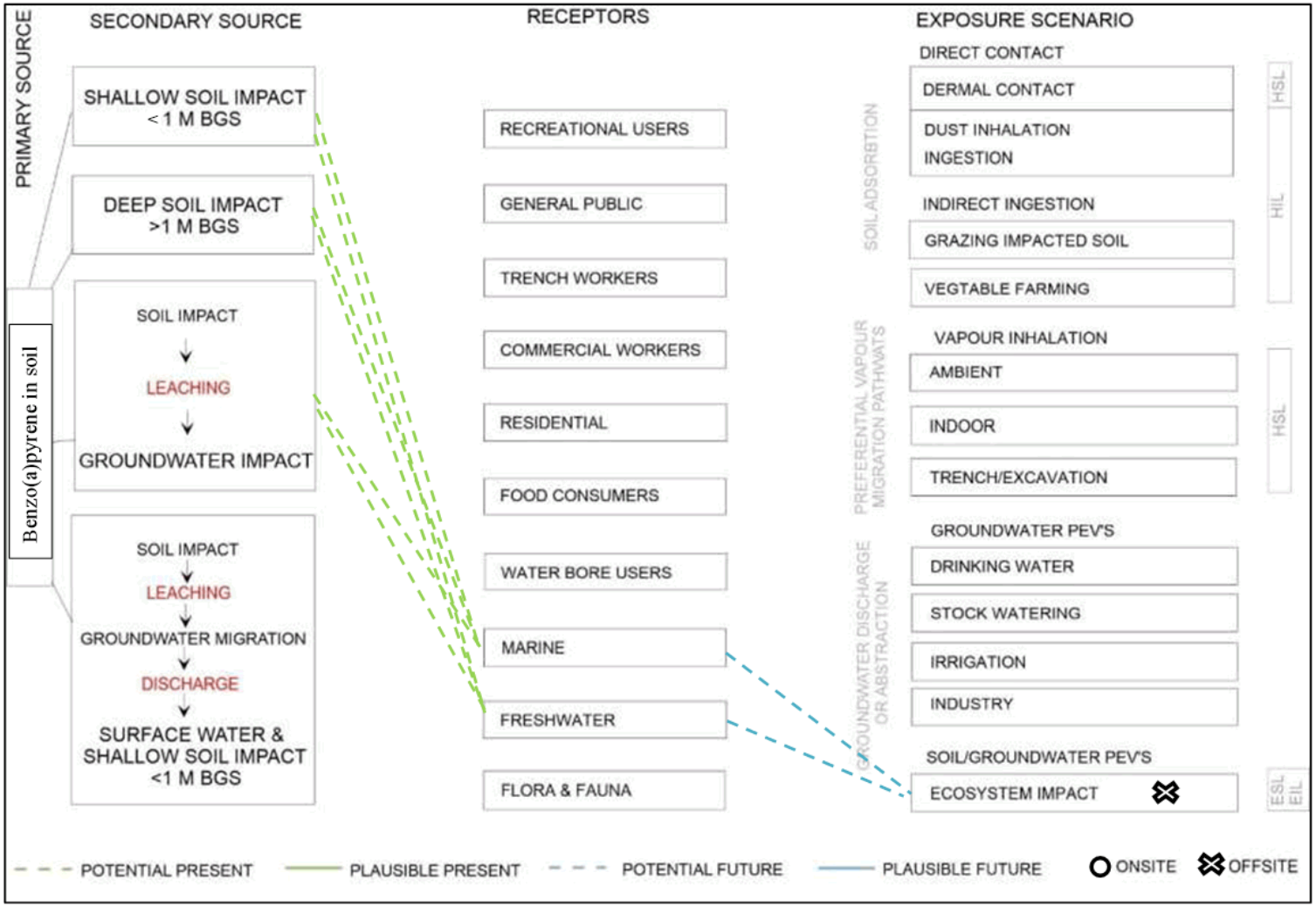

Figure 8 Conceptual Site Mode

13 CONCLUSIONS & RECOMMENDIATIONS

13.1 Desktop Assessment

The following information was gathered during the desktop investigation:

- The site is zoned *Utilities* under the Hobart City Councils Interim Planning Scheme of 2015
- The geology of the site is Quaternary alluvial deposits, fill was observed at variable depths ranging from 0.3 to 0.8 m BGS. Groundwater is inferred to travel east along similar trajectory to Hobart Rivulet to discharge into the River Derwent. Surface water would be collected in stormwater culverts and discharged into Hobart Rivulet.
- A review of available information including historical aerial photographs and illustrations confirmed that the site is situated on the western edge of the central business district of Hobart, and has been used as a street since at least 1841.
- A former factory/workshop is present upstream along Hobart Rivulet, and the area directly upgradient of the site appears to have historically been residential properties.
- Some potential contamination sources include past light industrial landuses upstream of the site, and fill of undetermined origins. Identifying all contamination sources is beyond the scope of this report, given the long history of varied land use in the area.
- Contaminants Of Potential Concern (COPC) include the following: TPH/TRH; Mono Aromatic hydrocarbons: (BTEXN); PAH; and heavy metals.

13.2 Adopted Guideline Settings

The following investigation limits were adopted for the site:

- Ecosystem receptor
  - Discharge to River Derwent - ESL and EILs
- Human Receptor
  - HIL D/HIL D for soil direct contact risk to future site users that may have access to soil / Future site workers and potential construction workers
  - HIL D / HIL D for soil ingestion and dust inhalation risk to future site users in contact with soil / Future construction workers soil direct contact risk
  - HSL D / HSL D indoor vapour risk to nearby site users / future potential trench workers

13.3 Soil Assessment

From the soil assessment, it is concluded that:

- Environment: There were no metals detected above NEPM 2013 EIL guideline limits, and no EIL risks to ecological receptors identified. For hydrocarbons, Benzo(a)pyrene exceeded NEPM 2013 ESL guideline limits in three of the seven samples, in 'H1 0.4' and 'H3 0.4' benzo(a)pyrene was measured at 20-50x above investigation limits. If disturbance to the soil is planned for the site, a Soil and Water Management Plan (SWMP) should be put in place to account for the management and erosion of soil with ecological impacts. Benzo(a)pyrene is a product of combustion commonly found in urban soils, it is relatively inert and not likely to be mobile unless disturbed. Given the site is sealed, the only opportunity for benzo(a)pyrene contaminated soil effecting ecological receptors is from erosion of sediment during the construction phase of the works, and can be mitigated with an SWMP.
- Human Health: There were no human health guideline exceedances at HSL D for commercial/industrial land use, and therefore no risk to human receptors for; dermal contact, dust inhalation or soil ingestion risk.
- Vapour Risk There were no indoor vapour risks or inhalation risk for trench workers or residential site users identified and therefore no risk to human receptors for vapour.
- Excavated Soil Management: In terms of IB105; of the seven primary soil samples, one sample was considered Level 3 Material (Contaminated Soil) due to Benzo(a)pyrene. Four samples exhibited a range of contaminants (Barium, Copper, Benzo(a)pyrene and Benzo(a)pyrene (TEQ)/Sum of PAH) at Level 2 Material (Low Level Contaminated Soil). The remaining two samples can be considered Level 1 Material (Clean Fill).

13.4 Conclusion Summary and Recommendations

GES recommends the following:

- There were no human health guideline exceedances in soil samples tested when compared at commercial/industrial investigation limits. Based upon the current results the site will not pose a risk to the health of workers during excavation and the site is suitable for the proposed use.
- Given elevated levels of benzo(a)pyrene exceeded ESL guidelines, the soil on site may have an impact on ecological receptors. If any soil disturbance is to occur on site, a Soil and Water Management Plan (SWMP) should be put in place to account for the management and erosion of soil with potential ecological impacts.
- Due to variable and elevated levels of heavy metals and hydrocarbons it is recommended that any excavated material be stockpiled and resampled for offsite disposal in accordance with IB105 and the controlled waste regulations. Material excavated from hole 'H1' should be segregated due to the elevated levels of benzo(a)pyrene observed in that vicinity.

Yours faithfully,

Mark Downie B.Agr.Sci

Soil Scientist

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LIMITATIONS STATEMENT

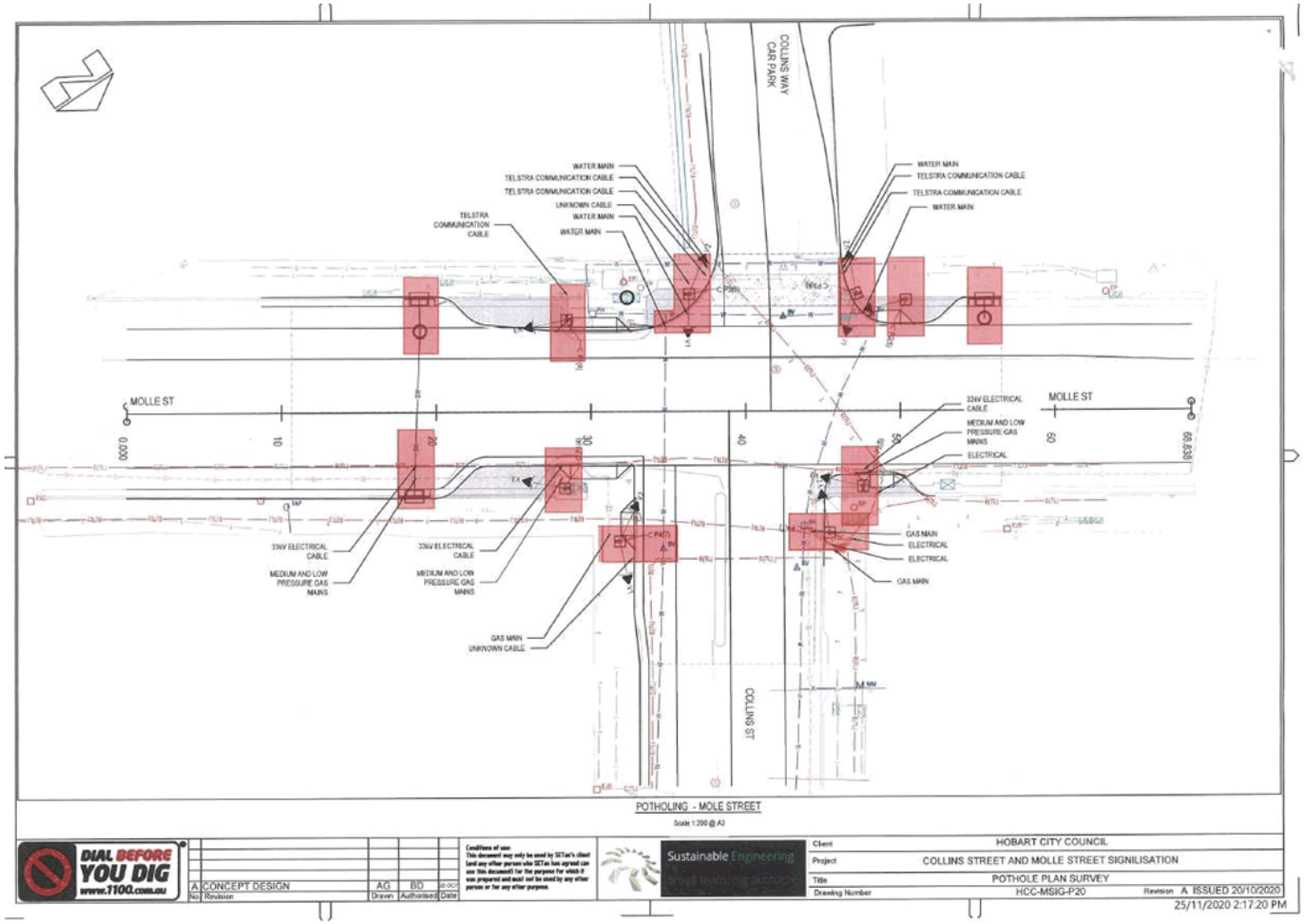
This *Environmental Site Assessment* Report has been prepared in accordance with the scope of services between Geo-Environmental Solutions Pty. Ltd. (GES) and Hobart City Council, ('the Client'). To the best of GES's knowledge, the information presented herein represents the Client's requirements at the time of printing of the Report. However, the passage of time, manifestation of latent conditions or impacts of future events may result in findings differing from that described in this Report. In preparing this Report, GES has relied upon data, surveys, analyses, designs, plans and other information provided by the Client and other individuals and organisations referenced herein. Except as otherwise stated in this Report, GES has not verified the accuracy or completeness of such data, surveys, analyses, designs, plans and other information.

The scope of this study does not allow for the review of every possible soil and groundwater contaminant over the whole area of the site. Samples collected from the investigation area are assumed to be representative of the areas from where they were collected and indicative of the contamination status of the site at that point in time. The conclusions described within this report are based on these samples, the results of their analysis and an assessment of their contamination status.

This report does not purport to provide legal advice. Readers of the report should engage professional legal practitioners for this purpose as required.

No responsibility is accepted for use of any part of this report in any other context or for any other purpose by third party.

Appendix 1 Site Pothole Plan Survey (Dial Before You Dig/Sustainable Engineering Tas)



Appendix 2 GES Staff

Geo-Environmental Solutions (GES) is a specialist geotechnical and environmental consultancy providing advice on all aspects of soils, geology, hydrology, and soil and groundwater contamination across a diverse range of industries.

Geo Environmental Solutions Pty Ltd:

- ACN – 115 004 834
- ABN – 24 115 004 834

GES STAFF - ENGAGED IN SITE INVESTIGATION WORKS

Dr John Paul Cumming B.Agr.Sc (Hons) Phd CPSS GAICD

- Principle Author and Principle Environmental Consultant
- PhD in Environmental Soil Chemistry from the University of Tasmania in 2007
- 18 years' experience in environmental contamination assessment and site remediation.

Mr Mark Downie B.Agr.Sc

- Soil Scientist with 15 years' professional experience
- 8 year' experience in contamination assessment and reporting of soils and groundwater.

GES STAFF – CONTAMINATED SITES EXPERIENCE

Ms Sarah Joyce BSc (Hons)

- Senior Environmental Scientist
- Honours in Geography and Environmental Science at the University of Tasmania in 2003;
- Undergraduate Degree Double Major in Geology and Geography & Environmental Science
- 15 years professional work experience and 7 years contaminated site assessment
- Attendance to recent relevant workshops by ALGA – Risk Assessment 101 (May 2018); Vapour Intrusion Workshop (Part A) – Petroleum Hydrocarbons (July 2017)

Dr Sam Rees B.Agr.Sc (Phd)

- Soil & Environmental Scientist
- 6 years' experience in hydrocarbon and heavy metal contamination assessment and reporting of soils and groundwater.

Mr Grant McDonald (Adv. cert. hort.)

- Soil Technician
- 10 years' experience in hydrocarbon and heavy metal contamination sampling of soils and groundwater.

Mr Aaron Plummer (Cert. IV)

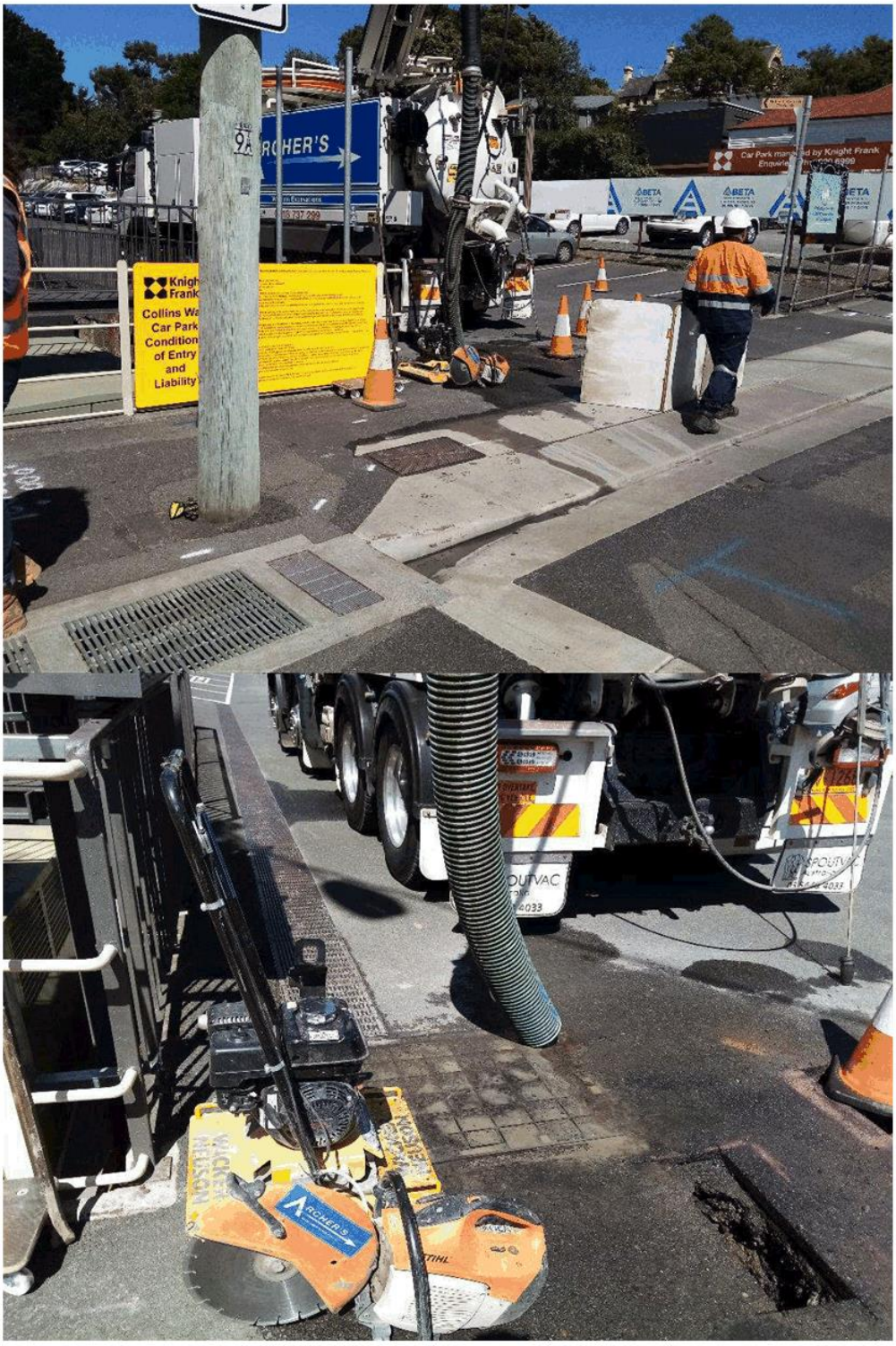
- Soil Technician
- 6 years' experience in hydrocarbon and heavy metal contamination sampling of soils and groundwater.

Appendix 3 Site Photographs

Hole 1

Hole 2


Car Park managed by Knight Frank
Enquiries Ph: 6220 6999
ABETA
ABETA


Knight Frank
Car Park
Condition
of Entry
and
Liability
ARCHER

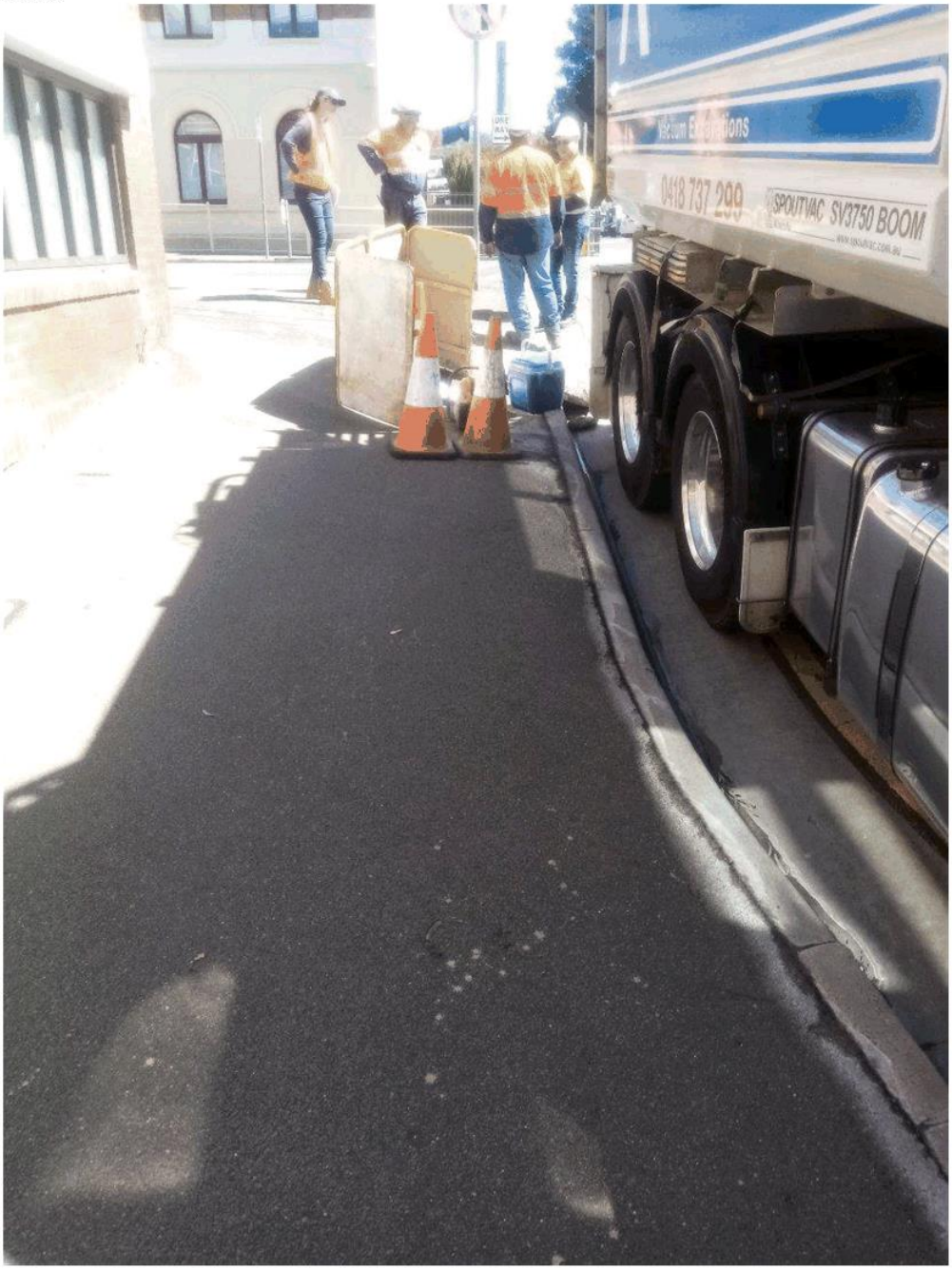
Hole 3


-500

Hole 4

Hole 5

Hole 6



Appendix 4 Borehole Logs

GES GEO-ENVIRONMENTAL SOLUTIONS

PROJECT: Collins Molle Intersection ESA
CLIENT: HCC

Log of H1

EASTING:	GDA94
NORTHING:	GDA94
BORING LOCATION: Hobart	ELEVATION AND DATUM: 26 m AHD
DRILLING CONTRACTOR: Archers	TOTAL DEPTH (m): 0.45
EQUIPMENT/METHOD: VAC	LOGGED BY: M Downie
	NATURAL (m): WATER TABLE (m):

SAMPLING: DATE: 1/20/21

DEPTH (metres)	MATERIAL DESCRIPTION	Geology	USCS Lithology	Laboratory Sample	Field PID (ppm)	IB105 Analyte IL Exceedances	MONITORING WELL	ELEVATION (metres)
0.0	FILL; aggregate, sand, gravels, clay patches	FILL	GC	H1 0.4		1 1 1 1 1 1 1 1 1 1 1 1 1 3 1 1 3 1 1 1 1		26.0
0.1								
0.2								25.8
0.3								
0.4								25.6

Tas EPA IB105 CLASSIFICATION: ☐ Level 1; 2 Level 2; 3 Level 3; 4 Level 4 SAMPLE IN EXCAVATION ✖ APPROXIMATE GROUNDFLOOR LEVEL

GES GEO-ENVIRONMENTAL SOLUTIONS

PROJECT: Collins Molle Intersection ESA
CLIENT: HCC

Log of H2

EASTING: GDA94
NORTHING: GDA94
BORING LOCATION: Hobart
ELEVATION AND DATUM: 26 m AHD
DRILLING CONTRACTOR: Archers
TOTAL DEPTH (m): 0.45
EQUIPMENT/METHOD: VAC
LOGGED BY: M Downie
NATURAL (m): WATER TABLE (m):
SAMPLING: DATE: 1/20/21

DEPTH (metres)	MATERIAL DESCRIPTION	Geology	USCS Lithology	Laboratory Sample	Field PID (ppm)	IB105 Analyte IL Exceedances	MONITORING WELL	ELEVATION (metres)
0.0								26.0
0.1	FILL; aggregate, sand, gravels, clay patches	FILL	GC					
0.2								25.8
0.3	CLAY, medium plasticiy, with common rocks and gravles	Qa	CI					
0.4				H2 0.4		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		25.6

Tas EPA IB105 CLASSIFICATION: ☐ Level 1; 2 Level 2; 3 Level 3; 4 Level 4 SAMPLE IN EXCAVATION ✖ APPROXIMATE GROUNDFLOOR LEVEL

GES GEO-ENVIRONMENTAL SOLUTIONS

PROJECT: Collins Molle Intersection ESA
CLIENT: HCC

Log of H3

EASTING: GDA94
NORTHING: GDA94
BORING LOCATION: Hobart
ELEVATION AND DATUM: 26 m AHD
DRILLING CONTRACTOR: Archers
TOTAL DEPTH (m): 0.55
EQUIPMENT/METHOD: VAC
LOGGED BY: M Downie
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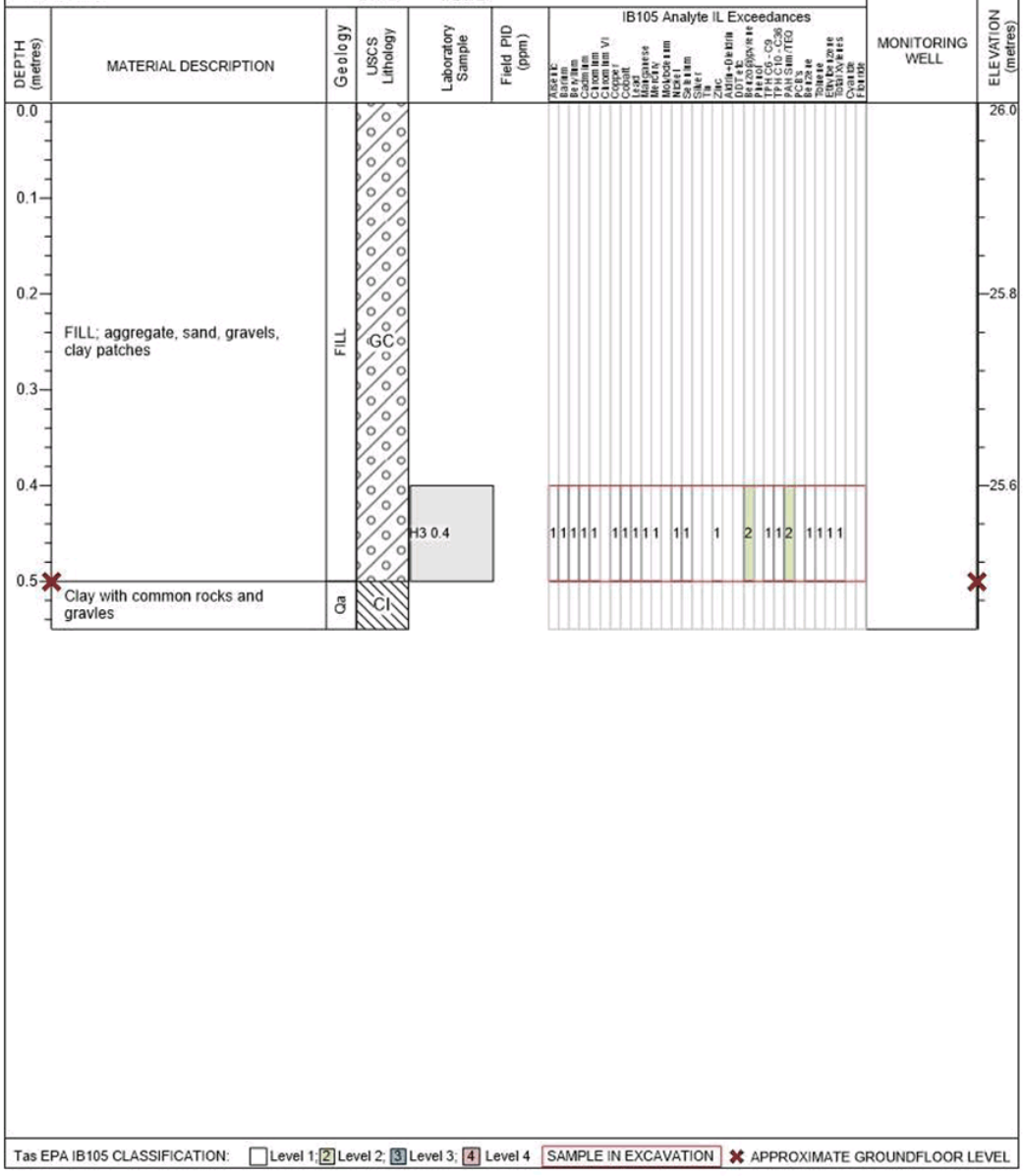

Tas EPA IB105 CLASSIFICATION: Level 1; 2 Level 2; 3 Level 3; 4 Level 4 SAMPLE IN EXCAVATION ✖ APPROXIMATE GROUNDFLOOR LEVEL

GES GEO-ENVIRONMENTAL SOLUTIONS

PROJECT: Collins Molle Intersection ESA
CLIENT: HCC

Log of H4

EASTING: GDA94
NORTHING: GDA94
BORING LOCATION: Hobart
ELEVATION AND DATUM: 26 m AHD
DRILLING CONTRACTOR: Archers
TOTAL DEPTH (m): 0.9
EQUIPMENT/METHOD: VAC
LOGGED BY: M Downie
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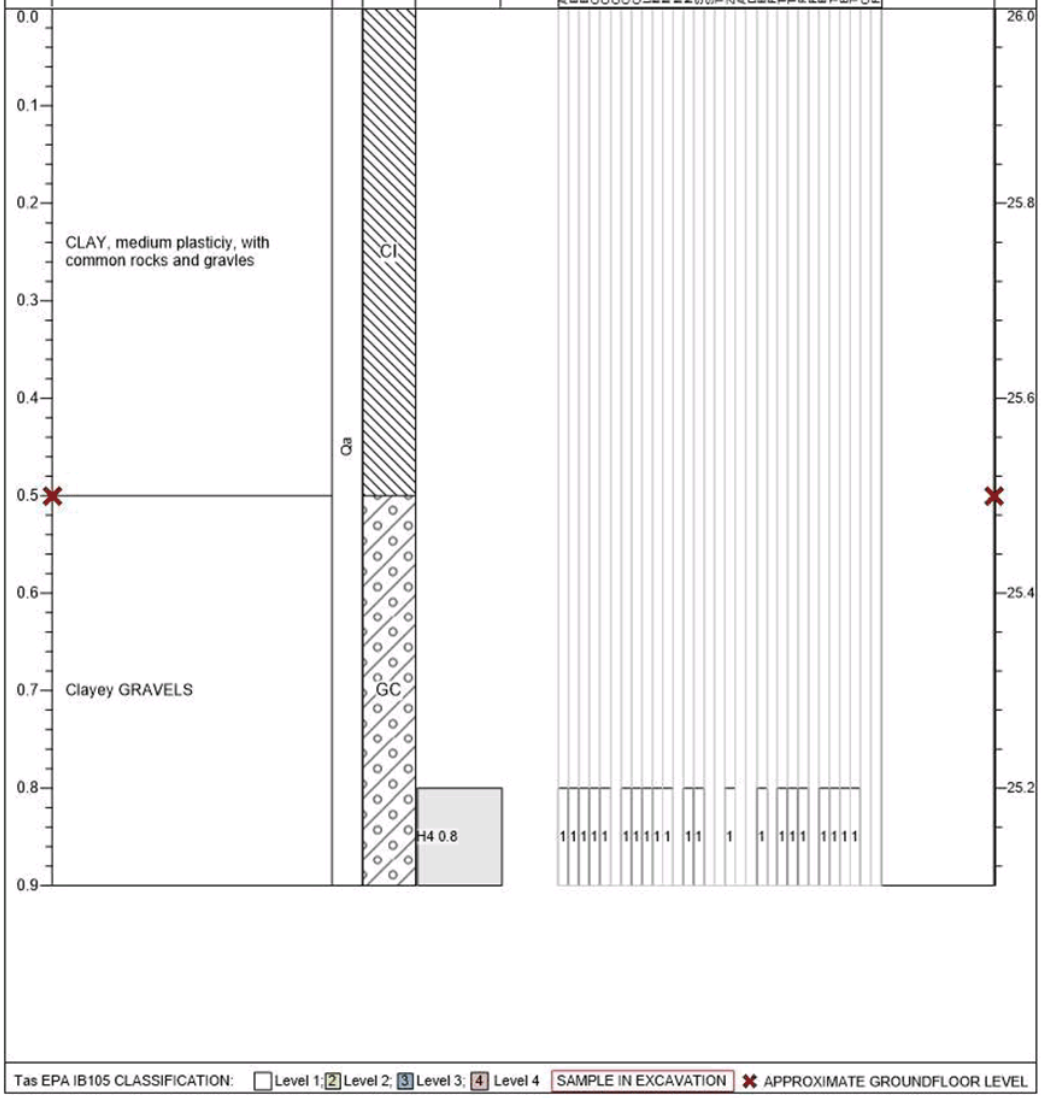


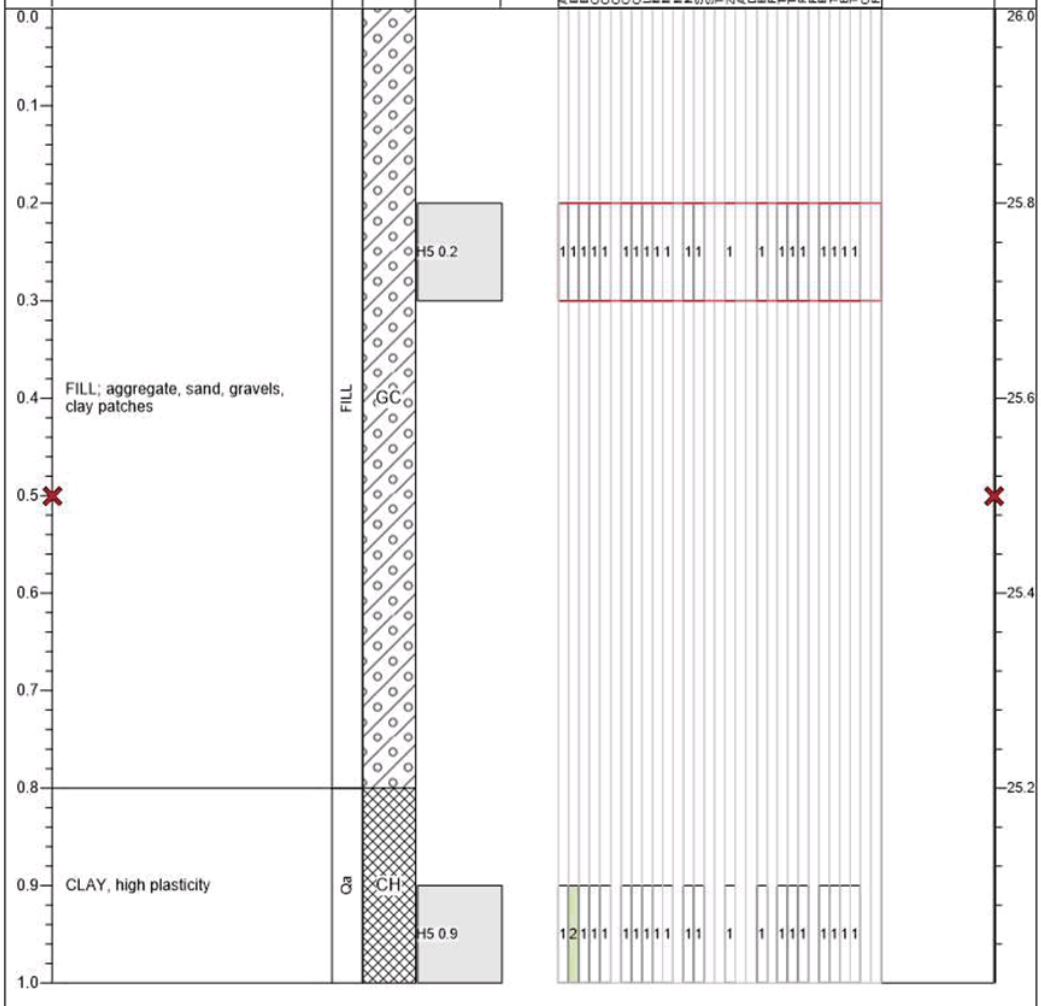
Tas EPA IB105 CLASSIFICATION: ☐ Level 1; 2 Level 2; 3 Level 3; 4 Level 4 SAMPLE IN EXCAVATION ✖ APPROXIMATE GROUNDFLOOR LEVEL

GES GEO-ENVIRONMENTAL SOLUTIONS

PROJECT: Collins Molle Intersection ESA
CLIENT: HCC

Log of H5

EASTING: GDA94
NORTHING: GDA94
BORING LOCATION: Hobart
ELEVATION AND DATUM: 26 m AHD
DRILLING CONTRACTOR: Archers
TOTAL DEPTH (m): 1
EQUIPMENT/METHOD: VAC
LOGGED BY: M Downie
NATURAL (m): WATER TABLE (m):
SAMPLING: DATE: 1/20/21



Tas EPA IB105 CLASSIFICATION: Level 1; Level 2; Level 3; Level 4 SAMPLE IN EXCAVATION ✖ APPROXIMATE GROUNDFLOOR LEVEL

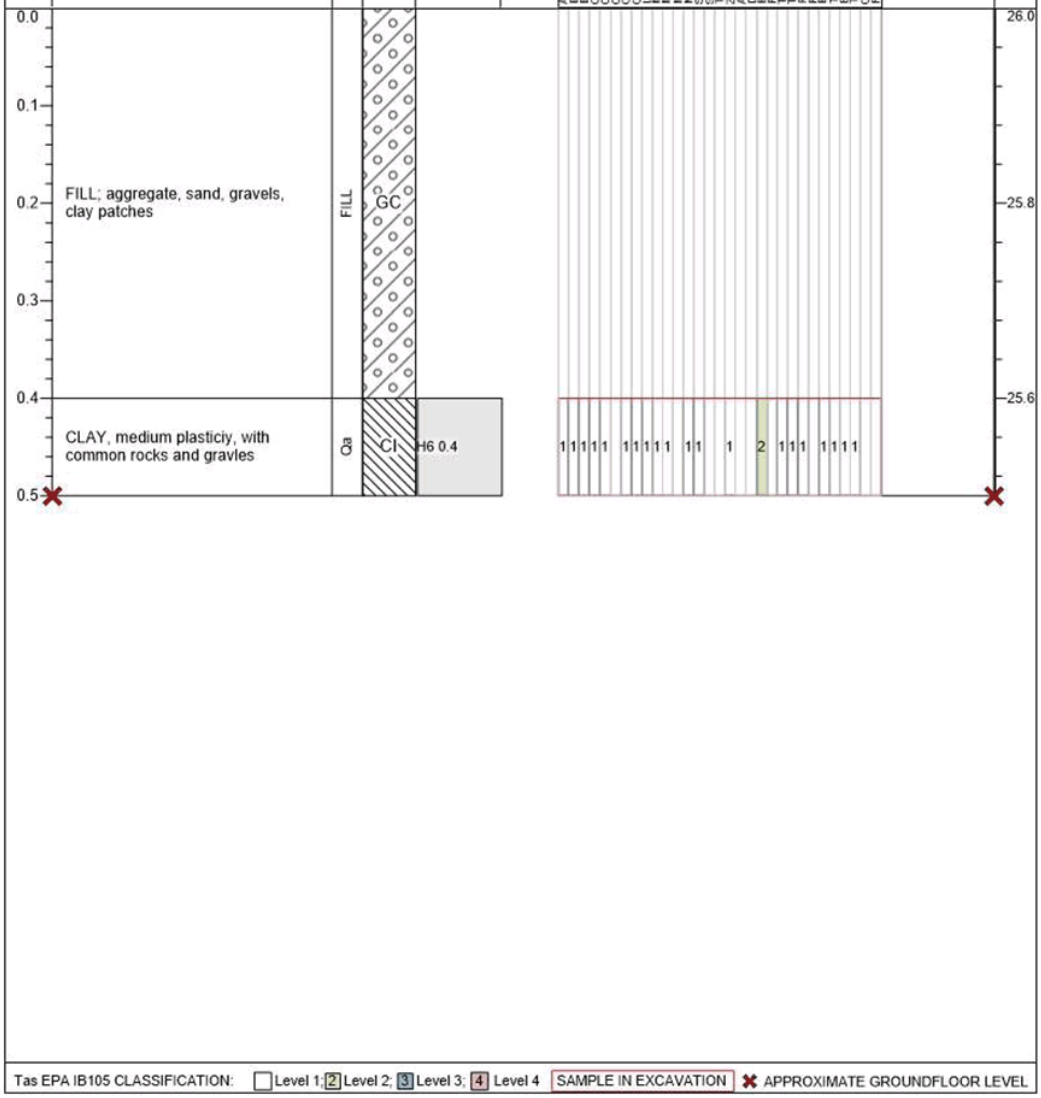
GES GEO-ENVIRONMENTAL SOLUTIONS

PROJECT: Collins Molle Intersection ESA
CLIENT: HCC

Log of H6

EASTING: GDA94
NORTHING: GDA94
ELEVATION AND DATUM: 26 m AHD
TOTAL DEPTH (m): 0.5
NATURAL (m): WATER TABLE (m):

BORING LOCATION: Hobart
DRILLING CONTRACTOR: Archers
EQUIPMENT/METHOD: VAC LOGGED BY: M Downie
SAMPLING: DATE: 1/20/21



Tas EPA IB105 CLASSIFICATION: ☐ Level 1; 2 Level 2; 3 Level 3; 4 Level 4 SAMPLE IN EXCAVATION ✖ APPROXIMATE GROUNDFLOOR LEVEL

Appendix 5 EPA Property Search of nearby property

PROPERTY INFORMATION REQUEST FORM

To: Contaminated Sites Unit

Email: contaminatedsites@epa.tas.gov.au
Post: GPO Box 1550, HOBART TAS 7001

Minimum information required for a database search

Street number & name: 283-287 Liverpool St	Curre [redacted]
Suburb / Town: Hobart	Curren
Post code: 7000	Curren

Land title information (please specify Certificate of Title(s) and Property Identification number(s)):
PID 5667509 CT 133023/1

Further information Potentially Contaminating Activities (PCA)

Current PCA on Site: Vehicle servicing	Current PCA on surrounding land: Vehicle servicing at N° 293
Past PCA on Site: Vehicle servicing	Past PCA on surrounding land: as above plus workshops at 295-313 Liverpool / 289-293 + 317-319 with USTs
Names of Past operator (s) of Site: Unknown	Names of Past operator(s) of surrounding PCAs Unknown

Additional notes / comments

APPLICANT'S DETAILS		INVOICE DETAILS	
Company Name	GES	**P.O or File reference**	
Report recipient:	Sarah Joyce	**Invoice recipient**:	Miran Shoemark
Email address:	sjoyce@geosolutions.net.au	Email address:	Miran@geosolutions.net.au
phone	6223 1839	Phone	6223 1839

Mailing address for report :

Payment The charge for this service is $237.00. An invoice will be sent on completion of the search.
N.B. Fee increases occur on 1 July every year.

Applicant's Signature.....

Date..... 2/1/20.

Environment Protection Authority

GPO Box 1550 HOBART TAS 7001 Australia

Enquiries: Contaminated Sites Unit
Phone: +61 3 6165 4599
Email: contaminatedsites@epa.tas.gov.au
Web: www.epa.tas.gov.au
Our Ref: (EN-EM-AV-100706_40 / M595889) sma

18 February 2020

Ms Sarah Joyce
Geo Environmental Solutions
29 Kirksway Place
Battery Point, TAS, 7004
sjoyce@geosolutions.net.au

Dear Ms Joyce

PROPERTY INFORMATION REQUEST
283-287 LIVERPOOL STREET, HOBART
Certificate of Title: 133023/1

On 7 January 2020, the Contaminated Sites Unit received your Property Information Request relating to the land referred to above ('the Site'). A search of relevant databases and records has been undertaken.

No records relating to contamination or potentially contaminating activities at the Site was found during the search, however there has been extensive redevelopment of neighbouring commercial sites over the last 25 years, and EPA holds records regarding contamination issues at some of these neighbouring properties.

23 Barrack St (105m E of the Site) was a Caltex Service Station which ceased operating in 1997. During 1998, seven underground petroleum storage systems [UPSS] with associated infrastructure, plus mechanical hoists and 1100m³ of hydrocarbon and heavy metal contaminated soil, were removed from the property as per the Remediation Action Plan and Development Application for ongoing commercial usage as a car showroom and saleyard. The Director, EPA, issued Environment Protection Notice 574/1 on 8/6/2001, requiring Caltex Australia to undertake groundwater monitoring for petroleum hydrocarbons on and off the site. In April 2004, after seven groundwater-monitoring events, the EPN was revoked. The last report held relating to this site is:

Australian Petroleum P/L Former Caltex Service Station Barrack Street Hobart, Status Report, Groundwater monitoring, December 2003 prepared by SEMF dated Feb. 2004.

254-286 Liverpool St and 38 Barrack Street were redeveloped to create the Centrelink and Department of Veterans Affairs offices. Three UPSS were removed from this area and the adjacent Redline site at **199 Collins St**. The EPA signed off on these sites in January 2008, based upon review of these reports:

254-286 Liverpool Street & 38 Barrack Street, Hobart, Stage 3 Environmental Site Assessment Soil Report, SEMF, January 2008; and

254-286 Liverpool Street & 38 Barrack Street, Hobart, Stage 3 Environmental Site Assessment Groundwater Report, SEMF, January 2008.

Historic Workplace Standards Tasmania [WST] records refer to the storage of dangerous goods in underground storage tanks at several properties within 120m of the Site. These are:

- 289-293 Liverpool St (adjoins the Site) WST file number G321 (1946-1954)
- 295-313 Liverpool St (26m SW of Site) WST file number WST G102 (1957-1983)

- 317-319 Liverpool St (73.7m SW of Site) WST file number A325 (1978- 1982)
- 100-102 Goulburn St (120m WSW of Site) WST File number 0927 (1958-1990)
- 199 Collins Street (20m SE of Site) WST File number 0667 (1960-1991)

No other records relating to contamination or potentially contaminating activities at adjacent properties were found.

The search of records is restricted to those held by EPA and includes records relating to: The *Environmental Management and Pollution Control (Underground Petroleum Storage Systems) Regulations 2010;* Industrial Sites (which are or have been regulated by EPA); historical landfills; and contamination issues reported to the Contaminated Sites Unit. In addition, the Incidents and Complaints database and records relating to the historical storage of dangerous goods (as detailed below) are searched.

A **LIST map** layer called '*EPA Regulated Premises*' is now available. It identifies the location of current regulated premises as well as the regulatory documents that apply to each site. There are several types of documents available including Permits (PCEs), Environment Protection Notices (EPNs), Environmental Licences (ELs) and Contaminated Land Notices (CLNs). For further information please go to https://epa.tas.gov.au/regulation/epa-regulated-premises-information

WorkSafe Tasmania (1300 366 322 or wstinfo@justice.tas.gov.au) may have issued dangerous goods licences and/or may hold relevant records for the Site and adjoining properties. As the storage of dangerous goods/fuels is an environmentally relevant activity, you may wish to contact them for further information.

Please note that the dangerous goods licensing records referred to by EPA Tasmania are for sites with underground storage tanks that ceased holding Dangerous Goods Licences prior to 1993. WorkSafe Tasmania hold the records for these Licences after 1993.

EPA does not hold records on all sites that are or may be contaminated. You should consider obtaining a site history to determine the likelihood of contamination. If contamination on the Site or an adjacent property is considered likely, further assessment by a competent environmental assessment practitioner is recommended. Site assessments should be conducted in accordance with the *National Environment Protection (Assessment of Site Contamination) Measure 1999*, National Environment Protection Council (or as varied). https://epa.tas.gov.au/regulation/contaminated-sites/identification-and-assessment-of-contaminated-land/contaminated-site-assessment

Please note since 1 July 2015, the Director requires all environmental site assessments and reports, submitted to the Contaminated Sites Unit for consideration, to be prepared by a person certified as a specialist contaminated sites consultant under a scheme approved by the Director.
Effective 30 June 2018, the endorsed scheme is operated by Certified Environmental Practitioners (CEnvP): Consultants certified under this scheme are approved to use the seal **CEnvP Site Contamination**.
https://www.cenvp.org.
Further details are available at: https://epa.tas.gov.au/regulation/contaminated-sites/identification-and-assessment-of-contaminated-land/engaging-a-contaminated-site-assessment-consultant

As local councils are able to issue Environment Protection Notices, Environmental Infringement Notices and record complaints, you may wish to contact them for additional information that may be relevant to the site. Further, if the Site has historically been subject to a permit under the *Land Use Planning and Approvals Act 1993*, the Council would have issued the permit.

Under the *Right to Information Act 2009* (RTI Act), you are entitled to apply for any records mentioned within this letter such as reports, letters, or other relevant documents. For further information on how the RTI process works and how to request information under the RTI Act please visit the Department of Primary Industries, Parks, Water and Environment website or https://dpipwe.tas.gov.au/about-the-department/governance-policies-and-legislation/right-to-information

If you are purchasing a property, you should consider Part 5A of the *Environmental Management and Pollution Control Act 1994* (EMPCA) which defines and specifies requirements for managing contaminated sites. If there is reason to believe the site is, or is likely to be, contaminated there are certain requirements that

you must meet (e.g. notification of a likely contaminated site to the Director, EPA as outlined in section 74B of the EMPCA).

Although all due care has been taken in the preparation of this letter, the Crown gives no warranty, express or implied, as to the accuracy or completeness of the information provided. The Crown and its servants or agents accept no responsibility for any loss or damage arising from reliance upon this letter, and any person relying on the letter does so at their own risk absolutely.

If you have any queries in relation to the matters above, please contact the Contaminated Sites Unit using the details at the head of this correspondence or refer to the EPA website at www.epa.tas.gov.au and click on 'Regulation to locate information on Underground Fuel Tanks and Contaminated Sites.

As you are aware, property searches incur a charge of $243.00. An invoice will be emailed as instructed. If you require this letter and invoice posted, please advise the Contaminated Sites Unit.

Yours sincerely

Bruce Napier
ENVIRONMENTAL OFFICER - CONTAMINATED SITES

Email: invoice to miran@geosolutions.net.au

Attachment: Invoice

3

Appendix 6 Historical Photographs and Illustrations

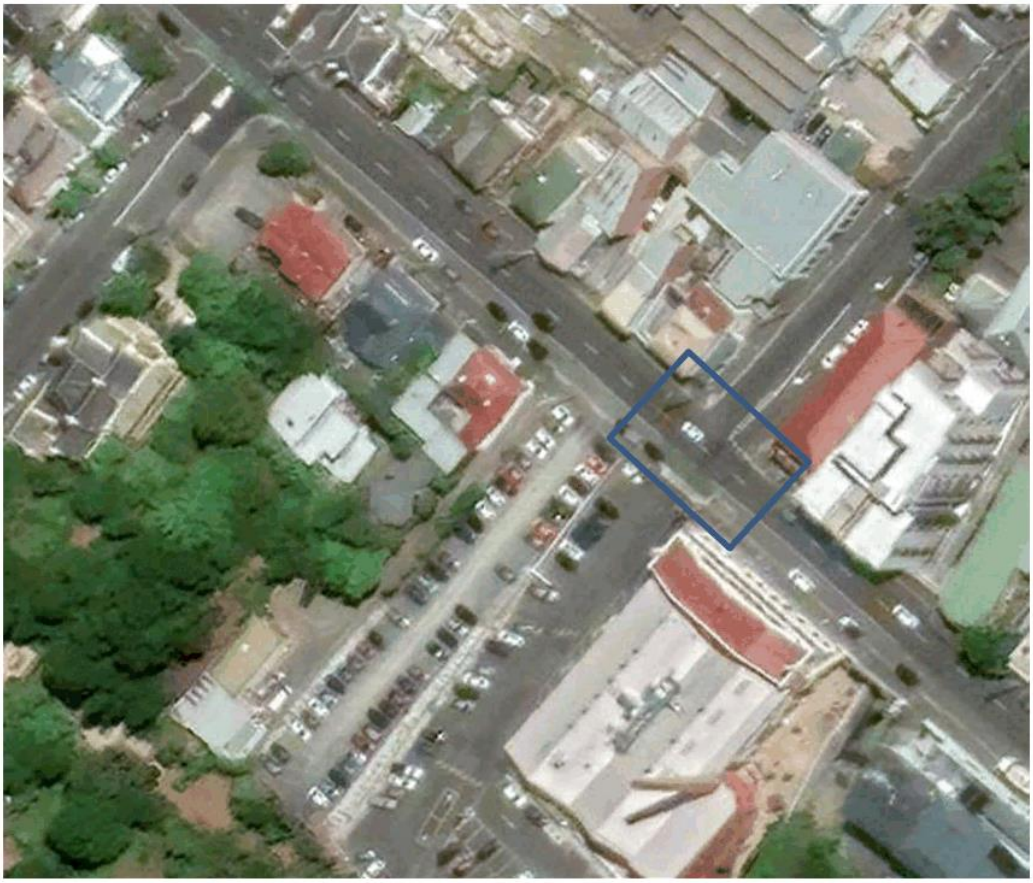


Plate 1 Historical Aerial Photograph – January 2020 (C/O Google Earth)

Plate 2 Historical Aerial Photograph – March 2008 (C/O Google Earth)

Plate 3 Historical Aerial Photograph – October 2003 (C/O Google Earth)

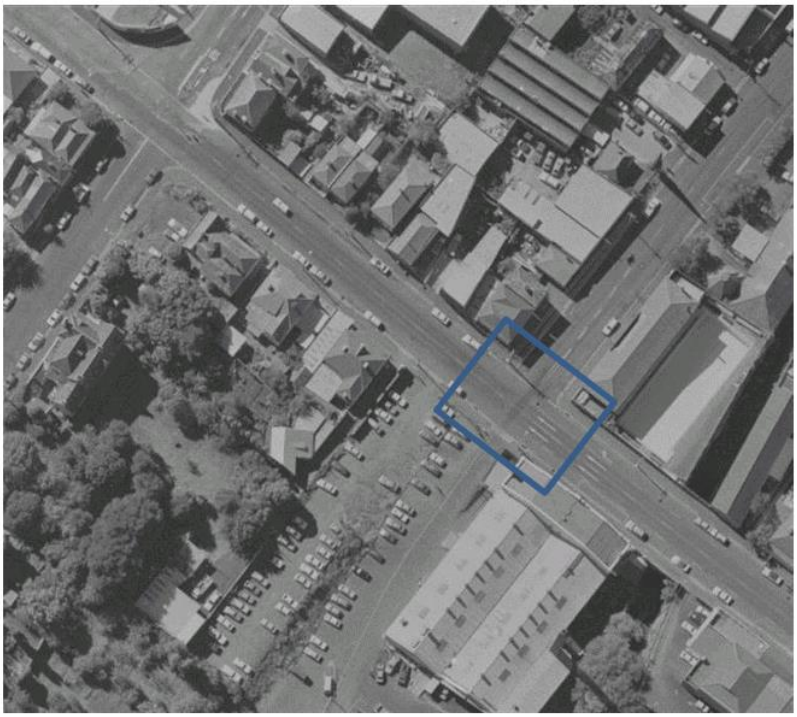


Plate 4 Historical Aerial Photograph - 1990 (c/o DPIPWE)

Plate 5 Historical Aerial Photograph - 1982 (c/o DPIPWE)

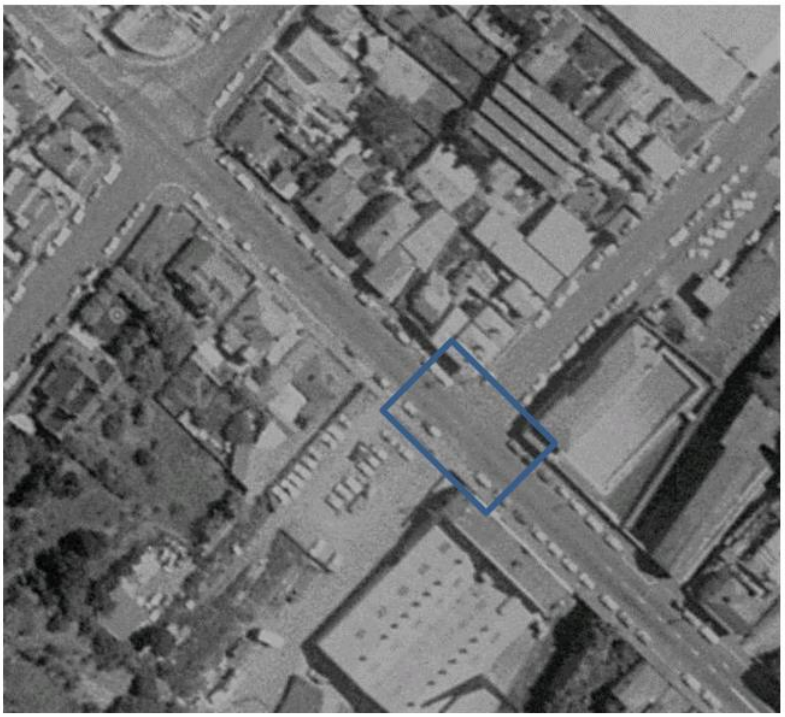


Plate 6 Historical Aerial Photograph, 1969 (c/o DPIPWE)

Plate 7 Historical Aerial Photograph, 1965 (c/o DPIPWE)

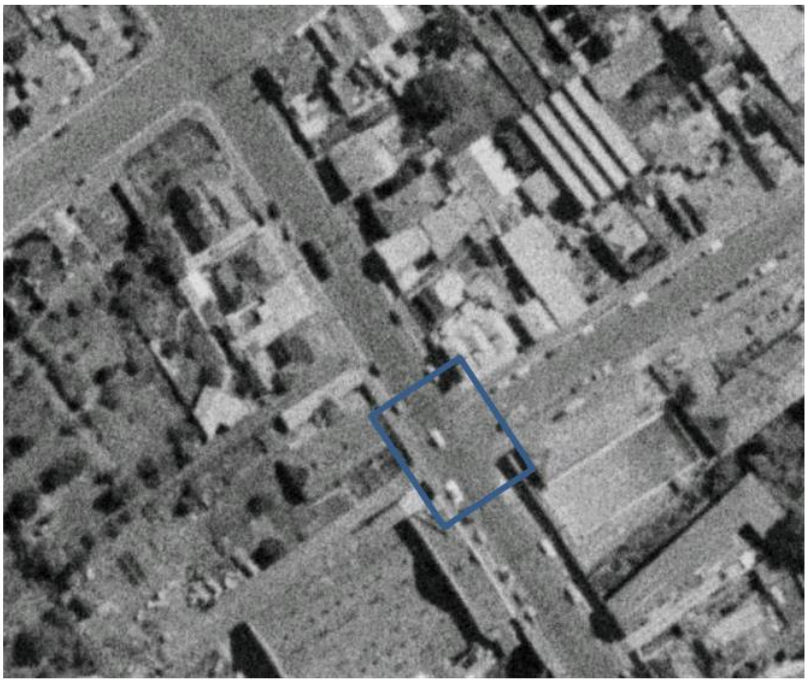


Plate 8 Historical Aerial Photograph, 1958 (c/o DPIPWE)

Plate 9 Historical Aerial Photograph, 1946 (c/o DPIPWE)

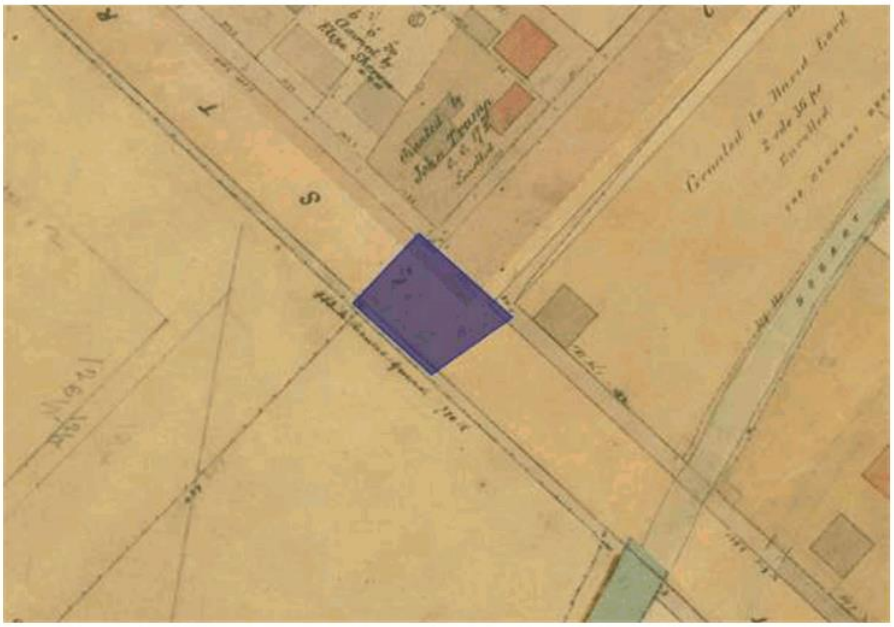


Figure 9 Excerpt from - Sprent's 1841 map of Hobart and surrounds – c/o The LIST

Appendix 7 Chain of Custody (COC) and Sample Receipt Notification (SRN)

ALS Environmental

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EM2100914**		
Client	: **GEO-ENVIRONMENTAL SOLUTIONS**	Laboratory	: Environmental Division Melbourne
Contact	: DR JOHN PAUL CUMMING	Contact	: Shirley LeCornu
Address	: 29 KIRKSWAY PLACE BATTERY POINT TASMANIA, AUSTRALIA 7004	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: jcumming@geosolutions.net.au	E-mail	: shirley.lecornu@Alsglobal.com
Telephone	: +61 03 6223 1839	Telephone	: +6138549 9630
Facsimile	: +61 03 6223 4539	Facsimile	: +61-3-8549 9626
Project	: Collins Molle	Page	: 1 of 3
Order number	: ----	Quote number	: EB2017GEOENVSOL0001 (EN/222)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: MARK DOWNIE		

Dates

Date Samples Received	: 22-Jan-2021 09:25	Issue Date	: 22-Jan-2021
Client Requested Due Date	: 29-Jan-2021	Scheduled Reporting Date	: **29-Jan-2021**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 1	Temperature	: 1.2°C - Ice Bricks present
Receipt Detail	:	No. of samples received / analysed	: 9 / 9

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 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.

RIGHT SOLUTIONS | RIGHT PARTNER

Issue Date	: 22-Jan-2021
Page	: 2 of 3
Work Order	: EM2100914 Amendment 0
Client	: GEO-ENVIRONMENTAL SOLUTIONS

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 - S-03 15 Metals (NEPM 2013 Suite - incl. Digestion)	SOIL - S-04 TRH/BTEXN
EM2100914-001	20-Jan-2021 00:00	H1 0.4	✓	✓	✓
EM2100914-002	20-Jan-2021 00:00	H2 0.4	✓	✓	✓
EM2100914-003	20-Jan-2021 00:00	H3 0.4	✓	✓	✓
EM2100914-004	20-Jan-2021 00:00	H4 0.8	✓	✓	✓
EM2100914-005	20-Jan-2021 00:00	H5 0.2	✓	✓	✓
EM2100914-006	20-Jan-2021 00:00	H5 0.9	✓	✓	✓
EM2100914-007	20-Jan-2021 00:00	H6 0.4	✓	✓	✓
EM2100914-008	20-Jan-2021 00:00	Duplicate	✓	✓	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - W-03 15 Metals (NEPM Suite)	WATER - W-04 TRH/BTEXN
EM2100914-009	20-Jan-2021 00:00	Rinsate	✓	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Issue Date	: 22-Jan-2021
Page	: 3 of 3
Work Order	: EM2100914 Amendment 0
Client	: GEO-ENVIRONMENTAL SOLUTIONS

Requested Deliverables

All Invoices		
- A4 - AU Tax Invoice (INV)	Email	smcintosh@geosolutions.net.au
JOHN PAUL CUMMING		
- *AU Certificate of Analysis - NATA (COA)	Email	jcumming@geosolutions.net.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	jcumming@geosolutions.net.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	jcumming@geosolutions.net.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	jcumming@geosolutions.net.au
- A4 - AU Tax Invoice (INV)	Email	jcumming@geosolutions.net.au
- Chain of Custody (CoC) (COC)	Email	jcumming@geosolutions.net.au
- EDI Format - ENMRG (ENMRG)	Email	jcumming@geosolutions.net.au
- EDI Format - ESDAT (ESDAT)	Email	jcumming@geosolutions.net.au
- EDI Format - XTab (XTAB)	Email	jcumming@geosolutions.net.au
M IRAN		
- A4 - AU Tax Invoice (INV)	Email	miran@geosolutions.net.au
MARK DOWNIE		
- *AU Certificate of Analysis - NATA (COA)	Email	mdownie@geosolutions.net.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	mdownie@geosolutions.net.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	mdownie@geosolutions.net.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	mdownie@geosolutions.net.au
- Chain of Custody (CoC) (COC)	Email	mdownie@geosolutions.net.au
- EDI Format - ENMRG (ENMRG)	Email	mdownie@geosolutions.net.au
- EDI Format - ESDAT (ESDAT)	Email	mdownie@geosolutions.net.au
- EDI Format - XTab (XTAB)	Email	mdownie@geosolutions.net.au
SARAH JOYCE		
- A4 - AU Tax Invoice (INV)	Email	sjoyce@geosolutions.net.au

ALS Environmental

FREIGHT

CLIENT:	GEOENVIRONMENTAL SOLUTIONS
OFFICE:	25 Kirkaway Pl, Battery Point TAS 7004
PROJECT	Collins Molle
ORDER NUMBER:	
PROJECT MANAGER:	JP Cumming
SAMPLER:	[illegible]
COC emailed to ALS? (YES / NO)	
Email Reports to	admin@geosolutions.net.au
Email Invoice to	admin@geosolutions.net.au; mrao@geosolutions.net.au; sjoyce@geosolutions.net.au
COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:	

TURNAROUND REQUIREMENTS: ★ Standard TAT (List due date:) ☐ Non Standard or urgent TAT (List due date)

ALS QUOTE NO.:

CONTACT PH: 0447 586 535

SAMPLER MOBILE:

QC SEQUENCE NUMBER (Circle)

RELINQUISHED BY: | RECEIVED BY: | RELINQUISHED BY: | RECEIVED BY:

DATE/TIME: | DATE/TIME: | DATE/TIME: | DATE/TIME:

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).

Additional Information

LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (codes below)	TOTAL CONTAINERS	TPH/TRH/BTEX	Tas EPA 05/05 (inc TBT)	LOW LOR BVOC	TRH C6 - C10	HOLD	15 Metals
1	H1 0.4	20.1.21	S	Jar	1	X					X
2	H2 0.4				1	X					X
3	H3 0.4				1	X					X
4	H4 0.8				1	X					X
5	H5 0.2				1	X					X
6	H5 0.9				1	X					X
7	H6 0.4				1	X					X
8	Duplicate				1	X					X
9	Rinsate	20.1.21	W	1AG, 1P, 2V	4	X					X
					TOTAL	12					

Environmental Division Melbourne
Work Order Reference
EM2100914

Telephone : +61-3-8549 9600

Received: 22/1 9:15 Carrier: TNT Parcels
Cboxte: 554796
Temp: 19 Cooler: N/A
Ice / Ice Bricks

ALS

Water Containers 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; VS = VOA Vial Sodium Bisulphate Preserved; VG = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; ST = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag

ALS Environmental

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EM2101307**		
Client	: **GEO-ENVIRONMENTAL SOLUTIONS**	Laboratory	: Environmental Division Melbourne
Contact	: DR JOHN PAUL CUMMING	Contact	: Shirley LeCornu
Address	: 29 KIRKSWAY PLACE BATTERY POINT TASMANIA, AUSTRALIA 7004	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: jcumming@geosolutions.net.au	E-mail	: shirley.lecornu@Alsglobal.com
Telephone	: +61 03 6223 1839	Telephone	: +6138549 9630
Facsimile	: +61 03 6223 4539	Facsimile	: +61-3-8549 9626
Project	: Collins Molle	Page	: 1 of 3
Order number	: ----	Quote number	: EB2017GEOENVSOL0001 (EN/222)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	:		

Dates

Date Samples Received	: 22-Jan-2021 09:25	Issue Date	: 04-Feb-2021
Client Requested Due Date	: 11-Feb-2021	Scheduled Reporting Date	: **11-Feb-2021**

Delivery Details

Mode of Delivery	: Samples On Hand	Security Seal	: Not Available
No. of coolers/boxes	: ----	Temperature	:
Receipt Detail	:	No. of samples received / analysed	: 9 / 9

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 absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- This is a rebatch of EM2100914.
- 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.

RIGHT SOLUTIONS | RIGHT PARTNER

Issue Date	: 04-Feb-2021
Page	: 2 of 3
Work Order	: EM2101307 Amendment 0
Client	: GEO-ENVIRONMENTAL SOLUTIONS

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 SIM PAH only SIM - PAH only
EM2101307-001	20-Jan-2021 00:00	H1 0.4	✓	✓
EM2101307-002	20-Jan-2021 00:00	H2 0.4	✓	✓
EM2101307-003	20-Jan-2021 00:00	H3 0.4	✓	✓
EM2101307-004	20-Jan-2021 00:00	H4 0.8	✓	✓
EM2101307-005	20-Jan-2021 00:00	H5 0.2	✓	✓
EM2101307-006	20-Jan-2021 00:00	H5 0.9	✓	✓
EM2101307-007	20-Jan-2021 00:00	H6 0.4	✓	✓
EM2101307-008	20-Jan-2021 00:00	Duplicate	✓	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP075 SIM PAH only SIM - PAH only
EM2101307-009	20-Jan-2021 00:00	Rinsate	✓

Proactive Holding Time Report

The following table summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory.

Matrix: **SOIL** Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Client Sample ID(s)	Container	Due for extraction	Due for analysis	Samples Received Date	Samples Received Evaluation	Instructions Received Date	Instructions Received Evaluation
EA055: Moisture Content							
Duplicate	Soil Glass Jar - Unpreserved	----	03-Feb-2021	22-Jan-2021	✓	04-Feb-2021	×
H1 0.4	Soil Glass Jar - Unpreserved	----	03-Feb-2021	22-Jan-2021	✓	04-Feb-2021	×
H2 0.4	Soil Glass Jar - Unpreserved	----	03-Feb-2021	22-Jan-2021	✓	04-Feb-2021	×
H3 0.4	Soil Glass Jar - Unpreserved	----	03-Feb-2021	22-Jan-2021	✓	04-Feb-2021	×
H4 0.8	Soil Glass Jar - Unpreserved	----	03-Feb-2021	22-Jan-2021	✓	04-Feb-2021	×

Issue Date	: 04-Feb-2021
Page	: 3 of 3
Work Order	: EM2101307 Amendment 0
Client	: GEO-ENVIRONMENTAL SOLUTIONS

H5 0.2	Soil Glass Jar - Unpreserved	----	03-Feb-2021	22-Jan-2021	✓	04-Feb-2021	✗
H5 0.9	Soil Glass Jar - Unpreserved	----	03-Feb-2021	22-Jan-2021	✓	04-Feb-2021	✗
H6 0.4	Soil Glass Jar - Unpreserved	----	03-Feb-2021	22-Jan-2021	✓	04-Feb-2021	✗
EP075(SIM): PAH/Phenols (SIM)							
Duplicate	Soil Glass Jar - Unpreserved	03-Feb-2021	15-Mar-2021	22-Jan-2021	✓	04-Feb-2021	✗
H1 0.4	Soil Glass Jar - Unpreserved	03-Feb-2021	15-Mar-2021	22-Jan-2021	✓	04-Feb-2021	✗
H2 0.4	Soil Glass Jar - Unpreserved	03-Feb-2021	15-Mar-2021	22-Jan-2021	✓	04-Feb-2021	✗
H3 0.4	Soil Glass Jar - Unpreserved	03-Feb-2021	15-Mar-2021	22-Jan-2021	✓	04-Feb-2021	✗
H4 0.8	Soil Glass Jar - Unpreserved	03-Feb-2021	15-Mar-2021	22-Jan-2021	✓	04-Feb-2021	✗
H5 0.2	Soil Glass Jar - Unpreserved	03-Feb-2021	15-Mar-2021	22-Jan-2021	✓	04-Feb-2021	✗
H5 0.9	Soil Glass Jar - Unpreserved	03-Feb-2021	15-Mar-2021	22-Jan-2021	✓	04-Feb-2021	✗
H6 0.4	Soil Glass Jar - Unpreserved	03-Feb-2021	15-Mar-2021	22-Jan-2021	✓	04-Feb-2021	✗

Matrix: **WATER** Evaluation: ✗ = Holding time breach ; ✓ = Within holding time.

Method / Client Sample ID(s)	Container	Due for extraction	Due for analysis	Samples Received Date	Samples Received Evaluation	Instructions Received Date	Instructions Received Evaluation
EP075(SIM): PAH/Phenols (GC/MS - SIM)							
Rinsate	Amber Glass Bottle - Unpreserv	27-Jan-2021	08-Mar-2021	22-Jan-2021	✓	04-Feb-2021	✗

Requested Deliverables

All Invoices		
- A4 - AU Tax Invoice (INV)	Email	smcintosh@geosolutions.net.au
JOHN PAUL CUMMING		
- *AU Certificate of Analysis - NATA (COA)	Email	jcumming@geosolutions.net.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	jcumming@geosolutions.net.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	jcumming@geosolutions.net.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	jcumming@geosolutions.net.au
- A4 - AU Tax Invoice (INV)	Email	jcumming@geosolutions.net.au
- Chain of Custody (CoC) (COC)	Email	jcumming@geosolutions.net.au
- EDI Format - ENMRG (ENMRG)	Email	jcumming@geosolutions.net.au
- EDI Format - ESDAT (ESDAT)	Email	jcumming@geosolutions.net.au
M IRAN		
- A4 - AU Tax Invoice (INV)	Email	miran@geosolutions.net.au
MARK DOWNIE		
- *AU Certificate of Analysis - NATA (COA)	Email	mdownie@geosolutions.net.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	mdownie@geosolutions.net.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	mdownie@geosolutions.net.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	mdownie@geosolutions.net.au
- Chain of Custody (CoC) (COC)	Email	mdownie@geosolutions.net.au
- EDI Format - ENMRG (ENMRG)	Email	mdownie@geosolutions.net.au
- EDI Format - ESDAT (ESDAT)	Email	mdownie@geosolutions.net.au
SARAH JOYCE		
- *AU Certificate of Analysis - NATA (COA)	Email	sjoyce@geosolutions.net.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	sjoyce@geosolutions.net.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	sjoyce@geosolutions.net.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	sjoyce@geosolutions.net.au
- A4 - AU Tax Invoice (INV)	Email	sjoyce@geosolutions.net.au
- Chain of Custody (CoC) (COC)	Email	sjoyce@geosolutions.net.au
- EDI Format - ENMRG (ENMRG)	Email	sjoyce@geosolutions.net.au
- EDI Format - ESDAT (ESDAT)	Email	sjoyce@geosolutions.net.au

Rebatch

Client / Client code: GEOENVSOL
Project: Collins Molle
Project Manager: JP Cumming, Mark Downie, Sarah Joyce
Date /time sample rec: Friday, 22 January 2021
Date/time instructions rec: 4/02/2021 12:10
Due date: Standard
Due date surcharge:

CS Contact:
Additional Information:
Please use previous TPH extract

Environmental Division
Melbourne
Work Order Reference
EM2101307

	New Lab ID	Sample information: Client ID	Sampling Date / Time	Previous Work Order Reference	Previous ALS ID	Tray Number(s)	Container	Number of Containers	An: Standard: PAH										Shortest Holding time expiry
1		H1 0.4	20/01/2021 0:00	EM2100914	1	Extract	Jar	1	X										
2		H2 0.4	20/01/2021 0:00	EM2100914	2	Extract	Jar	1	X										
3		H3 0.4	20/01/2021 0:00	EM2100914	3	Extract	Jar	1	X										
4		H4 0.8	20/01/2021 0:00	EM2100914	4	Extract	Jar	1	X										
5		H5 0.2	20/01/2021 0:00	EM2100914	5	Extract	Jar	1	X										
6		H5 0.9	20/01/2021 0:00	EM2100914	6	Extract	Jar	1	X										
7		H6 0.4	20/01/2021 0:00	EM2100914	7	Extract	Jar	1	X										
8		Duplicate	20/01/2021 0:00	EM2100914	8	Extract	Jar	1	X										
9		Rinsate	20/01/2021 0:00	EM2100914	9	Extract	Amber	1	X										
							TOTAL	9											

BC7

ALS Environmental

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EM2102079**		
Client	: **GEO-ENVIRONMENTAL SOLUTIONS**	Laboratory	: Environmental Division Melbourne
Contact	: DR JOHN PAUL CUMMING	Contact	: Shirley LeCornu
Address	: 29 KIRKSWAY PLACE BATTERY POINT TASMANIA, AUSTRALIA 7004	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: jcumming@geosolutions.net.au	E-mail	: shirley.lecornu@Alsglobal.com
Telephone	: +61 03 6223 1839	Telephone	: +6138549 9630
Facsimile	: +61 03 6223 4539	Facsimile	: +61-3-8549 9626
Project	: Collins Molle	Page	: 1 of 3
Order number	: ----	Quote number	: EB2017GEOENVSOL0001 (EN/222)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	:		

Dates

Date Samples Received	: 22-Jan-2021 09:25	Issue Date	: 11-Feb-2021
Client Requested Due Date	: 15-Feb-2021	Scheduled Reporting Date	: **15-Feb-2021**

Delivery Details

Mode of Delivery	: Samples On Hand	Security Seal	: Not Available
No. of coolers/boxes	: ----	Temperature	: ----
Receipt Detail	:	No. of samples received / analysed	: 2 / 2

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 absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- This is a rebatch of EM2100914
- 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.

RIGHT SOLUTIONS | RIGHT PARTNER

Issue Date	: 11-Feb-2021
Page	: 2 of 3
Work Order	: EM2102079 Amendment 0
Client	: GEO-ENVIRONMENTAL SOLUTIONS

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 - EN60a-G ASLP Leachate Procedure - Glass Leaching	SOIL - EP075 SIM PAH only SIM - PAH only
EM2102079-001	20-Jan-2021 00:00	H1 0.4	✓	✓
EM2102079-002	20-Jan-2021 00:00	H3 0.4	✓	✓

Proactive Holding Time Report

The following table summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory.

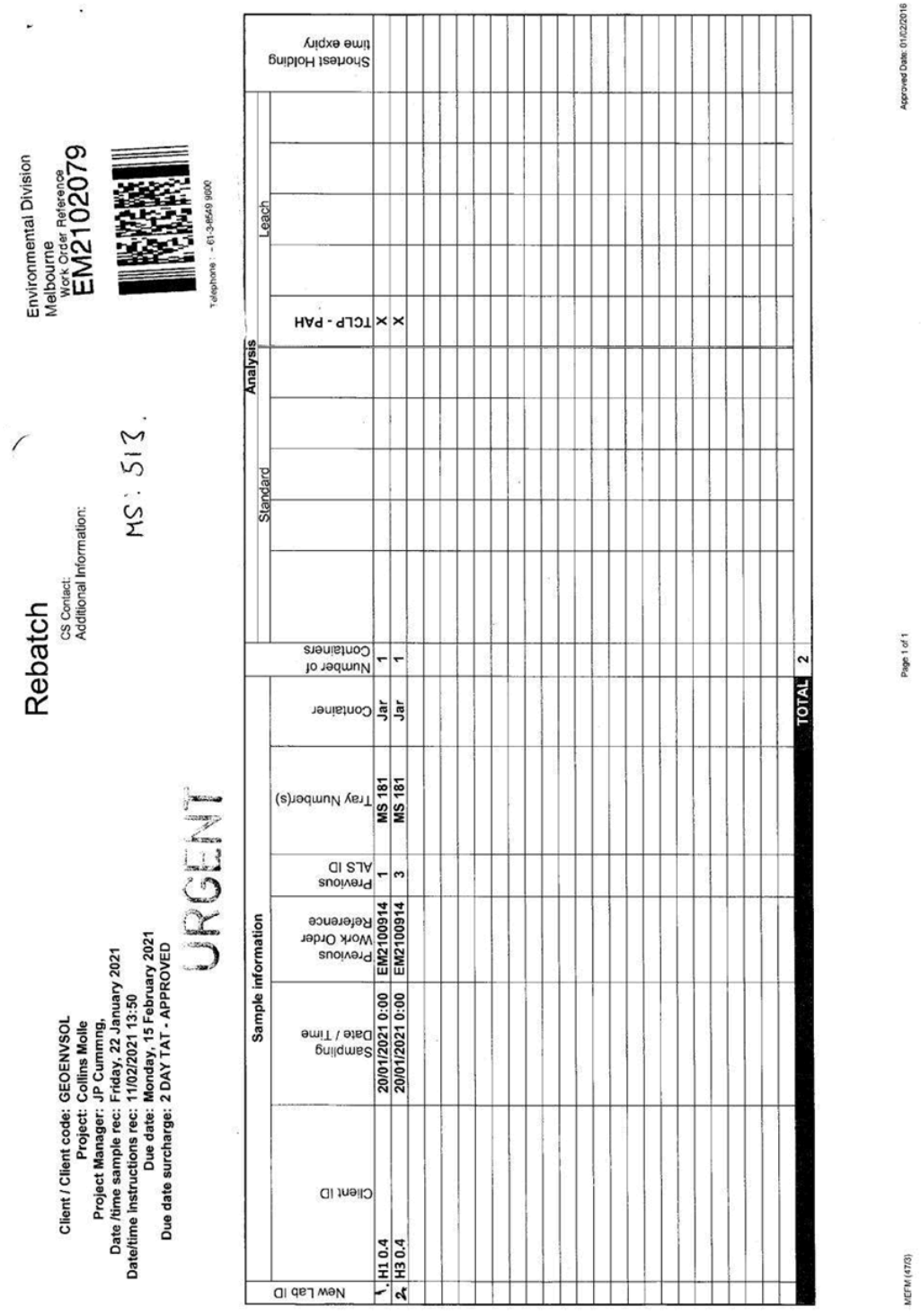
Matrix: **SOIL** Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Client Sample ID(s)	Container	Due for extraction	Due for analysis	Samples Received Date	Samples Received Evaluation	Instructions Received Date	Instructions Received Evaluation
EN60a-G: ASLP for Non & Semivolatile Analytes - Glass Leaching Vessel							
H1 0.4	Non-Volatile Leach: 14 day HT((	03-Feb-2021	----	22-Jan-2021	✓	11-Feb-2021	×
H3 0.4	Non-Volatile Leach: 14 day HT((	03-Feb-2021	----	22-Jan-2021	✓	11-Feb-2021	×

Issue Date	: 11-Feb-2021
Page	: 3 of 3
Work Order	: EM2102079 Amendment 0
Client	: GEO-ENVIRONMENTAL SOLUTIONS

Requested Deliverables

All Invoices		
- A4 - AU Tax Invoice (INV)	Email	smcintosh@geosolutions.net.au
JOHN PAUL CUMMING		
- *AU Certificate of Analysis - NATA (COA)	Email	jcumming@geosolutions.net.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	jcumming@geosolutions.net.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	jcumming@geosolutions.net.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	jcumming@geosolutions.net.au
- A4 - AU Tax Invoice (INV)	Email	jcumming@geosolutions.net.au
- Attachment - Report (SUBCO)	Email	jcumming@geosolutions.net.au
- Chain of Custody (CoC) (COC)	Email	jcumming@geosolutions.net.au
- EDI Format - ENMRG (ENMRG)	Email	jcumming@geosolutions.net.au
- EDI Format - ESDAT (ESDAT)	Email	jcumming@geosolutions.net.au
M IRAN		
- A4 - AU Tax Invoice (INV)	Email	miran@geosolutions.net.au
MARK DOWNIE		
- *AU Certificate of Analysis - NATA (COA)	Email	mdownie@geosolutions.net.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	mdownie@geosolutions.net.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	mdownie@geosolutions.net.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	mdownie@geosolutions.net.au
- Attachment - Report (SUBCO)	Email	mdownie@geosolutions.net.au
- Chain of Custody (CoC) (COC)	Email	mdownie@geosolutions.net.au
- EDI Format - ENMRG (ENMRG)	Email	mdownie@geosolutions.net.au
- EDI Format - ESDAT (ESDAT)	Email	mdownie@geosolutions.net.au
SARAH JOYCE		
- *AU Certificate of Analysis - NATA (COA)	Email	sjoyce@geosolutions.net.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	sjoyce@geosolutions.net.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	sjoyce@geosolutions.net.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	sjoyce@geosolutions.net.au
- A4 - AU Tax Invoice (INV)	Email	sjoyce@geosolutions.net.au
- Chain of Custody (CoC) (COC)	Email	sjoyce@geosolutions.net.au
- EDI Format - ENMRG (ENMRG)	Email	sjoyce@geosolutions.net.au
- EDI Format - ESDAT (ESDAT)	Email	sjoyce@geosolutions.net.au



Environmental Division
Melbourne
Work Order Reference
EM2102079

Telephone : - 61-3-8549 9600

Rebatch

CS Contact:
Additional Information:

MS: 513.

Client / Client code: GEOENVSOL
Project: Collins Molle
Project Manager: JP Cumming,
Date /time sample rec: Friday, 22 January 2021
Date/time instructions rec: 11/02/2021 13:50
Due date: Monday, 15 February 2021
Due date surcharge: 2 DAY TAT - APPROVED

URGENT

New Lab ID	Client ID	Sampling Date / Time	Previous Work Order Reference	Previous ALS ID	Tray Number(s)	Container	Number of Containers	Analysis: Standard							Analysis: Leach				Shortest Holding time expiry
														TCLP - PAH					
1.	H1 0.4	20/01/2021 0:00	EM2100914	1	MS 181	Jar	1							X					
2.	H3 0.4	20/01/2021 0:00	EM2100914	3	MS 181	Jar	1							X					
							TOTAL	2											

Approved Date: 01/02/2016

Page 1 of 1

MEFM (47/3)

Gemma Smeaton

From: Peter Ravlic
Sent: Thursday, 11 February 2021 4:24 PM
To: COC Melbourne
Cc: Samantha Smith
Subject: REBATCH - EM2100914 - GEOENVSOL - URGENT 2 DAY TAT - APPROVED
Attachments: [EXTERNAL] - RE: RESULTS & EDD for ALS Workorder : EM2101307 | Overall Description: Rebatch of EM2100914. ; GEOENV - EM2100914 (1).xlsm

Categories: Rebatch

TAT APPROVED

Peter Ravlic
Client Services – Springvale
Environmental

T +61 3 8549 9600
F +61 3 8549 9626
Peter.Ravlic@alsglobal.com
2-4 Westall Rd
Springvale Vic 3171
Australia

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Gemma Smeaton

From: Mark Downie <mdownie@geosolutions.net.au>
Sent: Thursday, 11 February 2021 1:50 PM
To: Peter Ravlic
Cc: JP Cumming
Subject: [EXTERNAL] - RE: RESULTS & EDD for ALS Workorder : EM2101307 | Overall Description: Rebatch of EM2100914.

CAUTION: This email originated from outside of ALS. Do not click links or open attachments unless you recognize the sender and are sure content is relevant to you.

Hi Peter,
Regarding this job that we requested the rebatch for PAH.
Can we get a leachate done on PAH for the following samples;
H1 0.4
And
H3 0.4

Regards,
Mark

From: angel-no-reply@alsglobal.com <angel-no-reply@alsglobal.com>
Sent: Monday, 8 February 2021 4:08 PM
To: Mark Downie <mdownie@geosolutions.net.au>
Subject: RESULTS & EDD for ALS Workorder : EM2101307 | Overall Description: Rebatch of EM2100914.

Deliverables for ALS Workorder EM2101307

Project: Collins Molle

Overall Description: Rebatch of EM2100914.

Dear MARK DOWNIE,

Please find enclosed the following deliverables for **EM2101307**:

- EM2101307_0_COA.pdf

1

- EM2101307_0_ENMRG.CSV
- Collins Molle.ESDAT_EM2101307_0.Chemistry2e.CSV
- Collins Molle.ESDAT_EM2101307_0.Header.XML
- Collins Molle.ESDAT_EM2101307_0.Sample2e.CSV
- EM2101307_0_QC.pdf
- EM2101307_0_QCI.pdf
- EM2101307_COC(1).pdf
- EM2101307_COC.pdf

Report Recipients

- MARK DOWNIE
  - EM2101307_COC.pdf (Email)
  - EM2101307_COC(1).pdf (Email)
  - EM2101307_0_QCI.pdf (Email)
  - EM2101307_0_QC.pdf (Email)
  - EM2101307_0_ENMRG.CSV
  - EM2101307_0_COA.pdf (Email)
  - Collins Molle.ESDAT_EM2101307_0.Sample2e.CSV
  - Collins Molle.ESDAT_EM2101307_0.Header.XML
  - Collins Molle.ESDAT_EM2101307_0.Chemistry2e.CSV
- All Invoices
  - EM2101307_COC(1)
  - EM2101307_COC
- SARAH JOYCE
  - EM2101307_COC(1)
  - EM2101307_COC
  - EM2101307_0_QCI
  - EM2101307_0_QC
  - EM2101307_0_ENMRG
  - EM2101307_0_COA
  - Collins Molle.ESDAT_EM2101307_0.Sample2e
  - Collins Molle.ESDAT_EM2101307_0.Header
  - Collins Molle.ESDAT_EM2101307_0.Chemistry2e
- JOHN PAUL CUMMING
  - EM2101307_COC(1)
  - EM2101307_COC
  - EM2101307_0_QCI
  - EM2101307_0_QC
  - EM2101307_0_ENMRG
  - EM2101307_0_COA
  - Collins Molle.ESDAT_EM2101307_0.Sample2e
  - Collins Molle.ESDAT_EM2101307_0.Header
  - Collins Molle.ESDAT_EM2101307_0.Chemistry2e
- M IRAN
  - EM2101307_COC(1)
  - EM2101307_COC

Appendix 8 Quality Assurance and Quality Control

Duplicate Comparrison	Sample	Arsenic	Barium	Beryllium	Cadmium	Chromium Total	Cobalt	Copper	Lead	Manganese	Nickel	Vanadium	Zinc	Mercury	Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benz[a]anthracene	Chrysene	Benzo[b]fluoranthene	Benzo[k]fluoranthene	Benzo[a]pyrene	Indeno(1.2.3.cd)pyrene	Dibenz(a.h)anthracene	Benzo(g. h.i)perylene	Sum of polycyclic aromatic hydr	Benzo(a)pyrene TEQ (WHO)
Unit		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR		5	10	1	1	2	2	5	5	5	2	5	5	0.1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
20/01/2021	H1 0.4	<5	20	<1	<1	<2	10	95	17	157	10	49	90	<0.1	0.9	3.9	<0.5	1	26.5	7	35.5	34.8	16.4	14.9	15.4	6.4	15.6	6.1	1.7	7.8	194	22
20/01/2021	Duplicate	<5	50	<1	<1	2	10	104	16	186	10	41	212	<0.1	4	10.2	8.5	13.2	216	48.9	235	217	74.9	69.4	75.3	29.9	74.7	33.8	6.8	45.3	1160	104
Relative Percentage Difference (RPD) %		NA	85.7	NA	NA	NA	0.0	9.0	6.1	16.9	0.0	17.8	80.8	NA	126.5	89.4	NA	171.8	156.3	149.9	147.5	144.7	128.1	129.3	132.1	129.5	130.9	138.8	120.0	141.2	142.7	130.2
RPD Compliance Limit %		NA	50	NA	NA	NA	50	50	50	30	50	50	30	NA	50	50	50	50	15	30	15	15	30	30	30	30	30	30	50	30	15	15
Method Detection Limit (MDL)		NA	200	NA	NA	NA	40	100	100	500	40	100	500	NA	10	10	10	10	>50	50	>50	>50	50	50	50	50	50	50	10	50	>50	>50
MDL Class		NONE	LOW	NONE	NONE	NONE	LOW	LOW	LOW	MED	LOW	LOW	MED	NONE	LOW	LOW	LOW	LOW	HIGH	MED	HIGH	HIGH	MED	MED	MED	MED	MED	MED	LOW	MED	HIGH	HIGH
RPD Compliance With MDL?	29/56 (52%)	YES	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

Duplicate Comparrison	Sample	Benzene	Toluene	Ethylbenzene	meta- & para-Xylene	ortho-Xylene	Sum of BTEX	Total Xylenes	Naphthalene	C6 - C9 Fraction	C10 - C14 Fraction	C15 - C28 Fraction	C29 - C36 Fraction	C10 - C36 Fraction (sum)	C6 - C10 Fraction	F1	>C10 - C16 Fraction	>C16 - C34 Fraction	>C34 - C40 Fraction	>C10 - C40 Fraction (sum)	F2	Benzo(a)pyrene TEQ (half LOR)	Benzo(a)pyrene TEQ (LOR)
Unit		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR		0.2	0.5	0.5	0.5	0.5	0.2	0.5	1	10	50	100	100	50	10	10	50	100	100	50	50	0.5	0.5
20/01/2021	H1 0.4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	<1	<10	<50	520	170	690	<10	<10	<50	640	<100	640	<50	22	22
20/01/2021	Duplicate	<0.2	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	<1	<10	<50	1300	530	1830	<10	<10	60	1640	230	1930	60	104	104
Relative Percentage Difference (RPD) %		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	85.7	102.9	90.5	NA	NA	NA	87.7	NA	100.4	NA	130.2	130.2
RPD Compliance Limit %		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	50	50	30	NA	NA	NA	50	NA	30	NA	15	15
Method Detection Limit (MDL)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2000	2000	5000	NA	NA	NA	2000	NA	5000	NA	>50	>50
MDL Class		NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	LOW	LOW	MED	NONE	NONE	NONE	LOW	NONE	MED	NONE	HIGH	HIGH
RPD Compliance With MDL?	29/56 (52%)	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO	NO	YES	YES	YES	NO	YES	NO	YES	NO	NO

***Footnote: For H1 0.4 and Duplicate pairs, 52% of analytes complied. Non compliances include: an RPD of 86% for Barium where <50% was expected; an RPD of 81% for Zinc where <30% was expected; an RPD of 127% for Naphthalene where <50% was expected; an RPD of 89% for Acenaphthylene where <50% was expected; Inconsistent Detection for Acenaphthene an RPD of 172% for Fluorene where <50% was expected; an RPD of 156% for Phenanthrene where <15% was expected; an RPD of 150% for Anthracene where <30% was expected; an RPD of 148% for Fluoranthene where <15% was expected; an RPD of 145% for Pyrene where <15% was expected; an RPD of 128% for Benz[a]anthracene where <30% was expected; an RPD of 129% for Chrysene where <30% was expected; an RPD of 132% for Benzo(b)fluoranthene where <30% was expected; an RPD of 129% for Benzo(k)fluoranthene where <30% was expected; an RPD of 131% for Benzo(a)pyrene where <30% was expected; an RPD of 139% for Indeno(1.2.3.cd)pyrene where <30% was expected; an RPD of 120% for Dibenz(a.h)anthracene where <50% was expected; an RPD of 141% for Benzo(g.h.i)perylene where <30% was expected; an RPD of 143% for Sum of polycyclic aromatic hydrocarbons where <15% was expected; an RPD of 130% for Benzo(a)pyrene TEQ (WHO) where <15% was expected; an RPD of 86% for C15 - C28 Fraction where <50% was expected; an RPD of 103% for C29 - C36 Fraction where <50% was expected; an RPD of 90% for C10 - C36 Fraction (sum) where <30% was expected; an RPD of 88% for >C16 - C34 Fraction where <50% was expected; an RPD of 100% for >C10 - C40 Fraction (sum) where <30% was expected; an RPD of 130% for Benzo(a)pyrene TEQ (half LOR) where <15% was expected; an RPD of 130% for Benzo(a)pyrene TEQ (LOR) where <15% was expected;**

Quality Control Blanks		Arsenic	Beryllium	Barium	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Nickel	Selenium	Vanadium	Zinc	Boron	Mercury	Benzene	Toluene	Ethylbenzene	meta- & para-Xylene	ortho-Xylene	Total Xylenes	Sum of BTEX	Naphthalene	C6 - C9 Fraction	C10 - C14 Fraction	C15 - C28 Fraction	C29 - C36 Fraction	C10 - C36 Fraction (sum)	C6 - C10 Fraction	C6 - C10 Fraction minus BTEX (F1)	>C10 - C16 Fraction	>C16 - C34 Fraction	>C34 - C40 Fraction	>C10 - C40 Fraction (sum)	>C10 - C16 Fraction minus Naphthalene (F2)
Unit		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR		0.001	0.001	0.001	0.0001	0.001	0.001	0.001	0.001	0.001	0.001	0.01	0.01	0.005	0.05	0.0001	1	2	2	2	2	2	1	5	20	50	100	50	50	20	20	100	100	100	100	100
Date	Sample																																			
20/01/2021	Rinsate	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.005	0.09	<0.0001	<1	<2	<2	<2	<2	<2	<1	<5	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: EM2100914	Page	: 1 of 11
Client	: GEO-ENVIRONMENTAL SOLUTIONS	Laboratory	: Environmental Division Melbourne
Contact	: DR JOHN PAUL CUMMING	Contact	: Shirley LeCornu
Address	: 29 KIRKSWAY PLACE BATTERY POINT TASMANIA, AUSTRALIA 7004	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: +61 03 6223 1839	Telephone	: +6138549 9630
Project	: Collins Molle	Date Samples Received	: 22-Jan-2021
Order number	: ---	Date Analysis Commenced	: 22-Jan-2021
C-O-C number	: ---	Issue Date	: 29-Jan-2021
Sampler	: MARK DOWNIE		
Site	: ---		
Quote number	: EN/222		
No. of samples received	: 9		
No. of samples analysed	: 9		

ilac-MRA NATA

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
Aneta Vijayaratnam	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Eric Chau	Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC
Nikki Stapniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC

ALS

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

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

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Laboratory Duplicate (DUP) Report: Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 3476795)									
EM2100914-002	H2 0.4	EG005T: Manganese	7439-96-5	5	mg/kg	488	# 1100	80.7	0% - 20%
EM2100866-004	Anonymous	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	20	20	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	14	14	0.00	No Limit
		EG005T: Cobalt	7440-48-4	2	mg/kg	3	3	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	9	9	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	9	9	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	62	64	2.47	0% - 50%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	21	20	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	8	8	0.00	No Limit
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.00	No Limit
EM2100914-002	H2 0.4	EG005T: Beryllium	7440-41-7	1	mg/kg	1	1	0.00	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	150	120	22.7	0% - 50%
		EG005T: Chromium	7440-47-3	2	mg/kg	18	17	7.83	No Limit
		EG005T: Cobalt	7440-48-4	2	mg/kg	30	22	32.7	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	19	16	16.6	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	8	8	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	26	26	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	20	27	27.8	No Limit
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.00	No Limit

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Work Order : EM2100914
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : Collins Molle

Sub-Matrix: SOIL

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Laboratory Duplicate (DUP) Report: Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG035(ED093)T: Total Metals by ICP-AES (QC Lot: 3476785) - continued									
EM2100914-002	H2 0.4	EG005T: Vanadium	7440-62-2	5	mg/kg	79	76	3.07	0% - 50%
		EG005T: Zinc	7440-66-6	5	mg/kg	148	147	0.00	0% - 20%
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.00	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3476670)									
EM2100666-016	Anonymous	EA055: Moisture Content	---	0.1	%	9.4	9.2	2.71	0% - 20%
EM2100666-090	Anonymous	EA055: Moisture Content	---	0.1	%	3.5	3.9	10.7	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3479671)									
EM2100914-006	H5 0.9	EA055: Moisture Content	---	0.1	%	28.2	28.1	0.376	0% - 20%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3476791)									
EB2101261-007	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EM2100666-004	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3476794)									
EM2100914-002	H2 0.4	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.1	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3476230)									
EM2100803-021	Anonymous	EP080: C6 - C9 Fraction	---	10	mg/kg	<10	<10	0.00	No Limit
EM2100666-081	Anonymous	EP080: C6 - C9 Fraction	---	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3477170)									
EM2100914-007	H6 0.4	EP080: C6 - C9 Fraction	---	10	mg/kg	<10	<10	0.00	No Limit
EM2100667-010	Anonymous	EP080: C6 - C9 Fraction	---	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3479824)									
EM2100666-004	Anonymous	EP071: C15 - C28 Fraction	---	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	---	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	---	50	mg/kg	<50	<50	0.00	No Limit
		EP071: C10 - C36 Fraction (sum)	---	50	mg/kg	<50	<50	0.00	No Limit
EM2100914-001	H1 0.4	EP071: C15 - C28 Fraction	---	100	mg/kg	520	990	5.77	No Limit
		EP071: C29 - C36 Fraction	---	100	mg/kg	170	310	16.5	No Limit
		EP071: C10 - C14 Fraction	---	50	mg/kg	<50	<50	0.00	No Limit
		EP071: C10 - C36 Fraction (sum)	---	50	mg/kg	690	770	11.0	0% - 50%
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3476230)									
EM2100803-021	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EM2100666-081	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3477170)									
EM2100914-007	H6 0.4	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EM2100667-010	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3479824)									
EM2100666-004	Anonymous	EP071: >C16 - C34 Fraction	---	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	---	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	---	50	mg/kg	<50	<50	0.00	No Limit

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Work Order : EM2100914
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : Collins Molle

Sub-Matrix: SOIL

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Laboratory Duplicate (DUP) Report: Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3479824) - continued									
EM2100666-004	Anonymous	EP071: >C10 - C40 Fraction (sum)	---	50	mg/kg	<50	<50	0.00	No Limit
EM2100914-001	H1 0.4	EP071: >C16 - C34 Fraction	---	100	mg/kg	840	690	8.27	No Limit
		EP071: >C34 - C40 Fraction	---	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	---	50	mg/kg	<50	<50	0.00	No Limit
		EP071: >C10 - C40 Fraction (sum)	---	50	mg/kg	840	690	7.52	0% - 50%
EP080: BTEXN (QC Lot: 3476230)									
EM2100803-021	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EM2100666-081	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EP080: BTEXN (QC Lot: 3477170)									
EM2100914-007	H6 0.4	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EM2100667-010	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit

Sub-Matrix: WATER

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Laboratory Duplicate (DUP) Report: Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG020F: Dissolved Metals by ICP-MS (QC Lot: 3480317)									
EM2100656-008	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit

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Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : Collins Molle

Sub-Matrix: WATER

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG020F: Dissolved Metals by ICP-MS (QC Lot: 3480317) - continued									
EM2100656-008	Anonymous	EG020A-F: Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Barium	7440-39-3	0.001	mg/L	0.015	0.015	0.00	0% - 50%
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	0.006	0.006	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.184	0.184	0.00	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.019	0.019	0.00	0% - 50%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.012	0.011	8.56	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Boron	7440-42-8	0.05	mg/L	0.07	0.07	0.00	No Limit
EM2100652-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Barium	7440-39-3	0.001	mg/L	0.014	0.014	0.00	0% - 50%
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.124	0.128	2.18	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.009	0.008	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.013	0.012	0.00	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Boron	7440-42-8	0.05	mg/L	0.24	0.24	0.00	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 3480316)									
EM2100696-003	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM2100656-001	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3476166)									
EM2100906-004	Anonymous	EP080: C6 - C9 Fraction	---	20	µg/L	<20	<20	0.00	No Limit
EM2100737-002	Anonymous	EP080: C6 - C9 Fraction	---	20	µg/L	<20	<20	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3476166)									
EM2100906-004	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EM2100737-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EP080: BTEXN (QC Lot: 3476166)									
EM2100906-004	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit

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Work Order : EM2100914
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : Collins Molle

Sub-Matrix: WATER

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080: BTEXN (QC Lot: 3476166) - continued									
EM2100906-004	Anonymous	EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
EM2100737-002	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit

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Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : Collins Molle

Method Blank (MB) and Laboratory Control Spike (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 Spike (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**

Method/ Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3476703)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	123 mg/kg	104	70.0	130
EG005T: Barium	7440-39-3	10	mg/kg	<10	99.3 mg/kg	94.6	70.0	130
EG005T: Beryllium	7440-41-7	1	mg/kg	<1	0.67 mg/kg	98.0	70.0	130
EG005T: Boron	7440-42-8	50	mg/kg	<50	---	---	---	---
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	1.23 mg/kg	59.8	50.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	20.2 mg/kg	111	70.0	130
EG005T: Cobalt	7440-48-4	2	mg/kg	<2	11.2 mg/kg	96.6	70.0	130
EG005T: Copper	7440-50-8	5	mg/kg	<5	55.9 mg/kg	99.0	70.0	130
EG005T: Lead	7439-92-1	5	mg/kg	<5	62.4 mg/kg	103	70.0	130
EG005T: Manganese	7439-96-5	5	mg/kg	<5	590 mg/kg	96.0	70.0	130
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.4 mg/kg	105	70.0	130
EG005T: Selenium	7782-49-2	5	mg/kg	<5	---	---	---	---
EG005T: Vanadium	7440-62-2	5	mg/kg	<5	61.3 mg/kg	106	70.0	130
EG005T: Zinc	7440-66-6	5	mg/kg	<5	162 mg/kg	78.1	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3476701)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.5 mg/kg	120	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3476704)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.5 mg/kg	124	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3476230)								
EP080: C6 - C9 Fraction	---	10	mg/kg	<10	36 mg/kg	91.4	58.6	131
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3477170)								
EP080: C6 - C9 Fraction	---	10	mg/kg	<10	36 mg/kg	95.0	58.6	131
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3479924)								
EP071: C10 - C14 Fraction	---	50	mg/kg	<50	900 mg/kg	82.6	75.0	128
EP071: C15 - C28 Fraction	---	100	mg/kg	<100	3030 mg/kg	97.3	82.0	123
EP071: C29 - C36 Fraction	---	100	mg/kg	<100	1520 mg/kg	84.0	82.4	121
EP071: C10 - C36 Fraction (sum)	---	50	mg/kg	<50	---	---	---	---
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3476230)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	45 mg/kg	96.4	59.3	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3477170)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	45 mg/kg	99.2	59.3	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3479924)								
EP071: >C10 - C16 Fraction	---	50	mg/kg	<50	1160 mg/kg	104	77.0	130

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Work Order : EM2100914
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : Collins Molle

Sub-Matrix: **SOIL**

Method/ Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3479924) - continued								
EP071: >C16 - C34 Fraction	---	100	mg/kg	<100	4020 mg/kg	92.8	81.5	120
EP071: >C34 - C40 Fraction	---	100	mg/kg	<100	280 mg/kg	95.6	73.5	137
EP071: >C10 - C40 Fraction (sum)	---	50	mg/kg	<50	---	---	---	---
EP080: BTEXN (QCLot: 3476230)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	2 mg/kg	88.8	61.6	117
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	2 mg/kg	102	65.8	126
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	2 mg/kg	102	65.8	124
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	4 mg/kg	100	64.8	134
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	2 mg/kg	105	68.7	132
EP080: Naphthalene	91-20-3	1	mg/kg	<1	0.5 mg/kg	106	61.8	123
EP080: BTEXN (QCLot: 3477170)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	2 mg/kg	90.5	61.6	117
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	2 mg/kg	104	65.8	126
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	2 mg/kg	102	65.8	124
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	4 mg/kg	88.1	64.8	134
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	2 mg/kg	101	68.7	132
EP080: Naphthalene	91-20-3	1	mg/kg	<1	0.5 mg/kg	113	61.8	123

Sub-Matrix: **WATER**

Method/ Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EG020F: Dissolved Metals by ICP-MS (QCLot: 3480317)								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	108	89.0	111
EG020A-F: Beryllium	7440-41-7	0.001	mg/L	<0.001	0.1 mg/L	97.0	85.0	112
EG020A-F: Barium	7440-39-3	0.001	mg/L	<0.001	0.1 mg/L	93.2	83.6	113
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	101	83.5	111
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	96.4	83.2	109
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	105	84.3	110
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	101	83.1	107
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	96.9	84.6	108
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	95.0	84.8	110
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	102	84.3	110
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	89.4	82.3	113
EG020A-F: Vanadium	7440-62-2	0.01	mg/L	<0.01	0.1 mg/L	99.3	83.7	110
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	109	86.3	112
EG020A-F: Boron	7440-42-8	0.05	mg/L	<0.05	0.5 mg/L	97.0	85.4	115
EG035F: Dissolved Mercury by FIMS (QCLot: 3480316)								

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Project : Collins Molle

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	LCS	Recovery Limits (%): Low	High
EG035F: Dissolved Mercury by FIMS (QCLot: 3480316) - continued								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	97.0	71.6	116
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3476166)								
EP080: C6 - C9 Fraction	---	20	µg/L	<20	360 µg/L	101	66.2	134
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3476749)								
EP071: C10 - C14 Fraction	---	50	µg/L	<50	4600 µg/L	110	44.2	140
EP071: C15 - C28 Fraction	---	100	µg/L	<100	16100 µg/L	111	46.9	127
EP071: C29 - C36 Fraction	---	50	µg/L	<50	8130 µg/L	109	47.4	128
EP071: C10 - C36 Fraction (sum)	---	---	µg/L	---	28830 µg/L	110	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3476166)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	102	66.2	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3476749)								
EP071: >C10 - C16 Fraction	---	100	µg/L	<100	6070 µg/L	107	43.0	127
EP071: >C16 - C34 Fraction	---	100	µg/L	<100	21200 µg/L	112	48.6	129
EP071: >C34 - C40 Fraction	---	100	µg/L	<100	1500 µg/L	110	42.2	133
EP071: >C10 - C40 Fraction (sum)	---	---	µg/L	---	28770 µg/L	111	70.0	130
EP080: BTEXN (QCLot: 3476166)								
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	96.4	68.8	127
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	96.0	72.9	129
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	95.1	71.7	130
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	40 µg/L	96.5	72.3	136
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	101	75.6	134
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	96.5	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**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Spike Recovery (%): MS	Recovery Limits (%): Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3479703)							
EM2100866-019	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	91.3	79.0	124
		EG005T: Cadmium	7440-43-9	50 mg/kg	91.0	79.7	116
		EG005T: Chromium	7440-47-3	50 mg/kg	91.8	79.0	121
		EG005T: Copper	7440-50-8	250 mg/kg	101	80.0	120
		EG005T: Lead	7439-92-1	250 mg/kg	93.7	80.0	120
		EG005T: Nickel	7440-02-0	50 mg/kg	94.7	79.0	120

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Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Spike Recovery (%): MS	Recovery Limits (%): Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3476703) - continued							
EM2100866-019	Anonymous	EG005T: Zinc	7440-66-6	250 mg/kg	84.9	80.0	120
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3476701)							
EB2101261-015	Anonymous	EG035T: Mercury	7439-97-6	0.5 mg/kg	102	76.0	116
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3476704)							
EM2100914-003	HG 0.4	EG035T: Mercury	7439-97-6	0.5 mg/kg	113	76.0	116
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3476230)							
EM2100903-022	Anonymous	EP080: C6 - C9 Fraction	---	29 mg/kg	59.4	33.4	124
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3477178)							
EM2100914-009	Duplicate	EP080: C6 - C9 Fraction	---	29 mg/kg	66.6	33.4	124
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3479924)							
EM2100866-019	Anonymous	EP071: C10 - C14 Fraction	---	900 mg/kg	93.2	71.2	125
		EP071: C15 - C28 Fraction	---	3030 mg/kg	96.9	75.6	122
		EP071: C29 - C36 Fraction	---	1520 mg/kg	93.1	79.0	120
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3476230)							
EM2100903-022	Anonymous	EP080: C6 - C10 Fraction	C6_C10	33 mg/kg	58.0	30.8	120
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3477178)							
EM2100914-009	Duplicate	EP080: C6 - C10 Fraction	C6_C10	33 mg/kg	62.6	30.8	120
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3479924)							
EM2100866-019	Anonymous	EP071: >C10 - C16 Fraction	---	1160 mg/kg	104	72.2	126
		EP071: >C16 - C34 Fraction	---	4020 mg/kg	92.2	76.5	119
		EP071: >C34 - C40 Fraction	---	280 mg/kg	93.6	66.8	136
EP080: BTEXN (QCLot: 3476230)							
EM2100903-022	Anonymous	EP080: Benzene	71-43-2	2 mg/kg	77.3	54.4	127
		EP080: Toluene	108-88-3	2 mg/kg	90.2	57.1	131
EP080: BTEXN (QCLot: 3477178)							
EM2100914-009	Duplicate	EP080: Benzene	71-43-2	2 mg/kg	83.6	54.4	127
		EP080: Toluene	108-88-3	2 mg/kg	88.0	57.1	131

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Spike Recovery (%): MS	Recovery Limits (%): Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 3480317)							
EM2100886-005	Anonymous	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	105	78.6	124
		EG020A-F: Beryllium	7440-41-7	0.2 mg/L	95.6	73.0	120
		EG020A-F: Barium	7440-39-3	0.2 mg/L	93.3	75.0	127
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	99.7	74.6	118

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Client : GEO-ENVIRONMENTAL SOLUTIONS
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Sub-Matrix: WATER

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: Spike Recovery (%) MS	Recovery Limits (%): Low	Recovery Limits (%): High
EG020F: Dissolved Metals by ICP-MS (QCLot: 3480317) - continued							
EM2100898-008	Anonymous	EG020A-F: Chromium	7440-47-3	0.2 mg/L	98.7	71.0	135
		EG020A-F: Cobalt	7440-48-4	0.2 mg/L	103	78.0	132
		EG020A-F: Copper	7440-50-8	0.2 mg/L	100	76.0	130
		EG020A-F: Lead	7439-92-1	0.2 mg/L	95.8	75.0	133
		EG020A-F: Manganese	7439-96-5	0.2 mg/L	96.8	64.0	134
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	100	73.0	131
		EG020A-F: Vanadium	7440-62-2	0.2 mg/L	104	73.0	131
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	104	75.0	131
EG035F: Dissolved Mercury by FIMS (QCLot: 3480316)							
EM2100836-002	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	85.2	70.0	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3476166)							
EM2100737-003	Anonymous	EP080: C6 - C9 Fraction	---	280 µg/L	88.8	33.9	126
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3476166)							
EM2100737-003	Anonymous	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	83.4	34.0	122
EP080: BTEXN (QCLot: 3476166)							
EM2100737-003	Anonymous	EP080: Benzene	71-43-2	20 µg/L	96.1	58.3	133
		EP080: Toluene	108-88-3	20 µg/L	97.6	60.4	132

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EM2100914	Page	: 1 of 8
Client	: GEO-ENVIRONMENTAL SOLUTIONS	Laboratory	: Environmental Division Melbourne
Contact	: DR JOHN PAUL CUMMING	Telephone	: +61385499630
Project	: Collins Molle	Date Samples Received	: 22-Jan-2021
Site	: ----	Issue Date	: 29-Jan-2021
Sampler	: MARK DOWNIE	No. of samples received	: 9
Order number	: ----	No. of samples analysed	: 9

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 Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **Duplicate 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

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

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Work Order : EM2100914
Client : GEO-ENVIRONMENTAL SOLUTIONS
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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
Duplicate (DUP) RPDs							
EG005(ED093)T: Total Metals by ICP-AES	EM2100914-002	H2 0.4	**Manganese**	7439-96-5	80.7 %	0% - 20%	**RPD exceeds LOR based limits**

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)					
TRH - Semivolatile Fraction	0	13	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
TRH - Semivolatile Fraction	0	13	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 summarises 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 re Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL** Evaluation: ✗ = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Evaluation	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055)							
H1 0.4, H2 0.4, H3 0.4, H4 0.8, H5 0.2, H5 0.8, H6 0.4, Duplicate	**20-Jan-2021**	---	---	---	**23-Jan-2021**	03-Feb-2021	✓
EG005(ED093)T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T)							
H1 0.4, H2 0.4, H3 0.4, H4 0.8, H5 0.2, H5 0.8, H6 0.4, Duplicate	**20-Jan-2021**	**23-Jan-2021**	19-Jul-2021	✓	**25-Jan-2021**	19-Jul-2021	✓

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Project : Collins Molle

Matrix: **SOIL** Evaluation: ✗ = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Evaluation	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Evaluation
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T)							
H1 0.4, H2 0.4, H3 0.4, H4 0.8, H5 0.2, H5 0.8, H6 0.4, Duplicate	**20-Jan-2021**	**25-Jan-2021**	17-Feb-2021	✓	**25-Jan-2021**	17-Feb-2021	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080)							
H1 0.4, H2 0.4, H3 0.4, H4 0.8, H3 0.2, H5 0.8	**20-Jan-2021**	**22-Jan-2021**	03-Feb-2021	✓	**27-Jan-2021**	03-Feb-2021	✓
Soil Glass Jar - Unpreserved (EP080)							
H6 0.4, Duplicate	**20-Jan-2021**	**23-Jan-2021**	03-Feb-2021	✓	**27-Jan-2021**	03-Feb-2021	✓
Soil Glass Jar - Unpreserved (EP071)							
H1 0.4, H2 0.4, H3 0.4, H4 0.8, H5 0.2, H5 0.8, H6 0.4, Duplicate	**20-Jan-2021**	**20-Jan-2021**	03-Feb-2021	✓	**26-Jan-2021**	09-Mar-2021	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP080)							
H1 0.4, H2 0.4, H3 0.4, H4 0.8, H5 0.2, H5 0.8	**20-Jan-2021**	**22-Jan-2021**	03-Feb-2021	✓	**27-Jan-2021**	03-Feb-2021	✓
Soil Glass Jar - Unpreserved (EP080)							
H6 0.4, Duplicate	**20-Jan-2021**	**23-Jan-2021**	03-Feb-2021	✓	**27-Jan-2021**	03-Feb-2021	✓
Soil Glass Jar - Unpreserved (EP071)							
H1 0.4, H2 0.4, H3 0.4, H4 0.8, H5 0.2, H5 0.8, H6 0.4, Duplicate	**20-Jan-2021**	**20-Jan-2021**	03-Feb-2021	✓	**26-Jan-2021**	09-Mar-2021	✓
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080)							
H1 0.4, H2 0.4, H3 0.4, H4 0.8, H5 0.2, H5 0.8	**20-Jan-2021**	**22-Jan-2021**	03-Feb-2021	✓	**27-Jan-2021**	03-Feb-2021	✓
Soil Glass Jar - Unpreserved (EP080)							
H6 0.4, Duplicate	**20-Jan-2021**	**23-Jan-2021**	03-Feb-2021	✓	**27-Jan-2021**	03-Feb-2021	✓

Matrix: **WATER** Evaluation: ✗ = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Evaluation	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Evaluation

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Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : Collins Molle

Matrix: **WATER** Evaluation: × = Holding time breach ; ✓ = Within holding time

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation: Date extracted	Due for extraction	Evaluation	Analysis: Date analysed	Due for analysis	Evaluation
EG035F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Filtered; Lab-acidified (EG020A-F)							
Rinsate	30-Jan-2021	---	---	---	27-Jan-2021	19-Jul-2021	✓
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Filtered; Lab-acidified (EG035F)							
Rinsate	30-Jan-2021	---	---	---	27-Jan-2021	17-Feb-2021	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071)							
Rinsate	30-Jan-2021	25-Jan-2021	27-Jan-2021	✓	27-Jan-2021	06-Mar-2021	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
Rinsate	30-Jan-2021	27-Jan-2021	03-Feb-2021	✓	27-Jan-2021	03-Feb-2021	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071)							
Rinsate	30-Jan-2021	25-Jan-2021	27-Jan-2021	✓	27-Jan-2021	06-Mar-2021	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
Rinsate	30-Jan-2021	27-Jan-2021	03-Feb-2021	✓	27-Jan-2021	03-Feb-2021	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080)							
Rinsate	30-Jan-2021	27-Jan-2021	03-Feb-2021	✓	27-Jan-2021	03-Feb-2021	✓

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Client : GEO-ENVIRONMENTAL SOLUTIONS
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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 / Analytical Methods	Method	Count: QC	Count: Reference	Rate (%): Actual	Rate (%): Expected	Evaluation	Quality Control Specification
Laboratory Duplicates (DUP)							
Moisture Content	EA055	3	25	12.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	3	28	10.71	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	3	19	15.79	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	4	39	10.26	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Total Mercury by FIMS	EG035T	2	28	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	39	5.13	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Total Mercury by FIMS	EG035T	2	28	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	39	5.13	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Total Mercury by FIMS	EG035T	2	28	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	39	5.13	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 / Analytical Methods	Method	Count: QC	Count: Reference	Rate (%): Actual	Rate (%): Expected	Evaluation	Quality Control Specification
Laboratory Duplicates (DUP)							
Dissolved Mercury by FIMS	EG035F	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	13	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Dissolved Mercury by FIMS	EG035F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Dissolved Mercury by FIMS	EG035F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard

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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	Reactor	Actual	Expected	Evaluation	
Method Blanks (MB) - Continued							
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Dissolved Mercury by FIMS	EG035F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	13	0.00	5.00	✖	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard

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Work Order : EM2100914
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : Collins Molle

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
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).
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 (SnCl2) (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 SnCl2 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	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).
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.
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020. ALS QWI-ENVEG020. 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 (SnCl2)(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 SnCl2 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)
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 GC/MS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Preparation Methods	Method	Matrix	Method Descriptions

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Preparation Method	Method	Matrix	Method Descriptions
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).
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, Na2SO4 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.
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.

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: EM2101307	Page	: 1 of 4
Client	: GEO-ENVIRONMENTAL SOLUTIONS	Laboratory	: Environmental Division Melbourne
Contact	: DR JOHN PAUL CUMMING	Contact	: Shirley LeCornu
Address	: 29 KIRKSWAY PLACE BATTERY POINT TASMANIA, AUSTRALIA 7004	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: +61 03 6223 1839	Telephone	: +6138549 9630
Project	: Collins Molle	Date Samples Received	: 22-Jan-2021
Order number	: ---	Date Analysis Commenced	: 23-Jan-2021
C-O-C number	: ---	Issue Date	: 08-Feb-2021
Sampler	:		
Site	: ---		
Quote number	: EN/222		
No. of samples received	: 9		
No. of samples analysed	: 9		

ilac-MRA NATA

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
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, 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

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%.

- **No Laboratory Duplicate (DUP) Results are required to be reported.**

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Method Blank (MB) and Laboratory Control Spike (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 Spike (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**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3495553)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	3 mg/kg	105	85.7	123
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	3 mg/kg	99.4	81.0	123
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	3 mg/kg	104	83.6	120
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	3 mg/kg	97.8	81.3	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	3 mg/kg	107	79.4	123
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	3 mg/kg	112	81.7	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	3 mg/kg	107	78.5	124
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	3 mg/kg	112	79.9	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	3 mg/kg	104	76.9	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	3 mg/kg	113	80.9	130
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	3 mg/kg	87.8	70.0	121
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	3 mg/kg	101	80.4	130
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	3 mg/kg	86.7	70.2	123
EP075(SIM): Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	<0.5	3 mg/kg	92.9	67.9	122
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	3 mg/kg	83.6	65.8	123
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	3 mg/kg	84.9	65.8	127

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3495038)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	95.3	42.8	114
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	106	48.6	119
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	104	47.0	117
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	106	48.5	119
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	110	49.4	121
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	107	48.4	122
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	115	50.3	124
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	118	50.0	126
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	114	49.4	127
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	113	48.7	126
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	110	54.5	134
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	114	56.1	134

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Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : Collins Molle

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3495038) - continued								
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	124	55.6	135
EP075(SIM): Indeno(1,2,3-cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	116	54.4	126
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	118	54.5	126
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	118	54.4	126

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). Wider recovery ranges stated may be waived in the event of sample matrix interference.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EM2101307	Page	: 1 of 5
Client	: GEO-ENVIRONMENTAL SOLUTIONS	Laboratory	: Environmental Division Melbourne
Contact	: DR JOHN PAUL CUMMING	Telephone	: +61385499630
Project	: Collins Molle	Date Samples Received	: 22-Jan-2021
Site	: ----	Issue Date	: 08-Feb-2021
Sampler	:	No. of samples received	: 9
Order number	: ----	No. of samples analysed	: 9

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

- **Analysis Holding Time Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

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Outliers : Analysis Holding Time Compliance

Matrix: **SOIL**

Method	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons						
Soil Glass Jar - Unpreserved						
HT 0.4, H3 0.4, H3 0.2, H2 0.4, H2 0.4, H4 0.8, H5 0.8, Duplicate	04-Feb-2021	03-Feb-2021	1	---	---	---

Outliers : Frequency of Quality Control Samples

Matrix: **SOIL**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
PAH/Phenols (SIM)	0	9	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (SIM)	0	9	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

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	1	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	1	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 summarises 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 data 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 as 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

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Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : Collins Molle

Matrix: **SOIL** Evaluation: ♦ = Holding time breach ; ✓ = Within holding time

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Evaluation	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055)							
H1 0.4, H2 0.4, H3 0.4, H4 0.8, H5 0.2, H6 0.8, H6 0.4, Duplicate	20-Jan-2021	---	---	---	25-Jan-2021	03-Feb-2021	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM))							
H1 0.4, H2 0.4, H3 0.4, H4 0.8, H5 0.2, H5 0.8, H6 0.4, Duplicate	20-Jan-2021	04-Feb-2021	03-Feb-2021	♦	05-Feb-2021	16-Mar-2021	✓

Matrix: **WATER** Evaluation: ♦ = Holding time breach ; ✓ = Within holding time

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Evaluation	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Evaluation
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM))							
Rinsate	20-Jan-2021	25-Jan-2021	27-Jan-2021	✓	05-Feb-2021	06-Mar-2021	✓

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Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical batch(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 / Analytical Methods	Method	Count: QC	Count: Reactor	Rate (%): Actual	Rate (%): Expected	Evaluation	Quality Control Specification
Laboratory Duplicates (DUP)							
PAH/Phenols (SIM)	EP075(SIM)	0	9	0.00	10.00	♦	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	8	12.50	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	8	12.50	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	0	8	0.00	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 / Analytical Methods	Method	Count: QC	Count: Reactor	Rate (%): Actual	Rate (%): Expected	Evaluation	Quality Control Specification
Laboratory Duplicates (DUP)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	1	0.00	10.00	♦	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	1	100.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	1	100.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	1	0.00	5.00	♦	NEPM 2013 B3 & ALS QC Standard

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Work Order : EM2101307
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : Collins Molle

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
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).
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)
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)
Preparation Methods	**Method**	**Matrix**	**Method Descriptions**
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 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.
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.

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: EM2102079	Page	: 1 of 3
Client	: GEO-ENVIRONMENTAL SOLUTIONS	Laboratory	: Environmental Division Melbourne
Contact	: DR JOHN PAUL CUMMING	Contact	: Shirley LeCornu
Address	: 29 KIRKSWAY PLACE BATTERY POINT TASMANIA, AUSTRALIA 7004	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: +61 03 6223 1839	Telephone	: +6138549 9630
Project	: Collins Molle	Date Samples Received	: 22-Jan-2021
Order number	: ---	Date Analysis Commenced	: 11-Feb-2021
C-O-C number	: ---	Issue Date	: 15-Feb-2021
Sampler	: ---		
Site	: ---		
Quote number	: EN/222		
No. of samples received	: 2		
No. of samples analysed	: 2		

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 Wong	2IC 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

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

						Laboratory Duplicate (DUP) Report			
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3508455)									
EM2102035-001	Anonymous	EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Indeno(1,2,3-cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	<1.0	0.00	No Limit

Page	: 3 of 3
Work Order	: EM2102079
Client	: GEO-ENVIRONMENTAL SOLUTIONS
Project	: Collins Molle

Method Blank (MB) and Laboratory Control Spike (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 Spike (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**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP075(SIM): Polynuclear Aromatic Hydrocarbons (QCLot: 3508400)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	95.1	42.8	114
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	95.7	48.6	119
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	99.8	47.0	117
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	98.9	48.5	119
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	101	49.4	121
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	99.7	48.4	122
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	101	50.3	124
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	102	50.0	126
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	98.8	49.4	127
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	102	48.7	126
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	98.8	54.5	134
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	99.6	56.1	134
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	98.3	55.6	135
EP075(SIM): Indeno(1,2,3-cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	99.8	54.4	129
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	99.0	54.5	126
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	100	54.4	126

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an interlaboratory 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.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EM2102079	Page	: 1 of 4
Client	: GEO-ENVIRONMENTAL SOLUTIONS	Laboratory	: Environmental Division Melbourne
Contact	: DR JOHN PAUL CUMMING	Telephone	: +61385499630
Project	: Collins Molle	Date Samples Received	: 22-Jan-2021
Site	: ----	Issue Date	: 15-Feb-2021
Sampler	: ----	No. of samples received	: 2
Order number	: ----	No. of samples analysed	: 2

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

- **Analysis Holding Time Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

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Page : 2 of 4
Work Order : EM2102079
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : Collins Molle

Outliers : Analysis Holding Time Compliance

Matrix: **SOIL**

Method / Container / Client Sample ID(s)	Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Days overdue	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Days overdue
EN60: ASLP Leaching Procedure - Inorganics/Non-Volatile Organics (Glass Vessel)						
Non-Volatile Leach: 14 day HT(e.g. SV organics)						
H1 0.4, H3 0.4	11-Feb-2021	03-Feb-2021	8	---	---	---

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count: QC	Count: Regular	Rate (%): Actual	Rate (%): Expected	Quality Control Specification
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	5	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 as Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL** Evaluation: ✦ = Holding time breach ; ✓ = Within holding time

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Evaluation	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Evaluation
EN60: ASLP Leaching Procedure - Inorganics/Non-Volatile Organics (Glass Vessel)							
Non-Volatile Leach: 14 day HT(e.g. SV organics) (EN60a-G)							
H1 0.4, H3 0.4	20-Jan-2021	11-Feb-2021	03-Feb-2021	✦	---	---	---

Matrix: **WATER** Evaluation: ✦ = Holding time breach ; ✓ = Within holding time

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Evaluation	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Evaluation
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM))							
H1 0.4, H3 0.4	11-Feb-2021	12-Feb-2021	18-Feb-2021	✓	13-Feb-2021	24-Mar-2021	✓

Page : 3 of 4
Work Order : EM2102079
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : Collins Molle

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 / Analytical Methods	Method	Count: QC	Count: Reference	Rate (%): Actual	Rate (%): Expected	Evaluation	Quality Control Specification
Laboratory Duplicates (DUP)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	3	20.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	3	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	3	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	3	0.00	5.00	✦	NEPM 2013 B3 & ALS QC Standard

Page : 4 of 4
Work Order : EM2102079
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : Collins Molle

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
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	SOIL	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)

Preparation Methods	Method	Matrix	Method Descriptions
ASLP for Non & Semivolatile Analytes - Glass Leaching Vessel	EN69a-G	SOIL	In house QWI-EN/60 referenced to AS4439.3 Preparation of Leachates
Separatory Funnel Extraction of Liquids	ORG14	SOIL	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.

Appendix 9 Certificate of Analysis

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: EM2100914	Page	: 1 of 9
Client	: GEO-ENVIRONMENTAL SOLUTIONS	Laboratory	: Environmental Division Melbourne
Contact	: DR JOHN PAUL CUMMING	Contact	: Shirley LeCornu
Address	: 29 KIRKSWAY PLACE BATTERY POINT TASMANIA, AUSTRALIA 7004	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: +61 03 6223 1839	Telephone	: +6138549 9630
Project	: Collins Molle	Date Samples Received	: 22-Jan-2021 09:25
Order number	: ---	Date Analysis Commenced	: 22-Jan-2021
C-O-C number	: ---	Issue Date	: 29-Jan-2021 15:11
Sampler	: MARK DOWNIE		
Site	: ---		
Quote number	: EN/222		
No. of samples received	: 9		
No. of samples analysed	: 9		

ilac-MRA NATA

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
Arenie Vijayaratnam	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Eric Chau	Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC
Nikki Slepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC

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ALS

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.

- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EG020-F : EM2100914 #9 results for dissolved Boron have been confirmed by re-preparation and re-analysis.
- EG035F: EM2100927 #2 Poor matrix spike recovery for dissolved mercury due to sample matrix. Confirmed by re-extraction and re-analysis.
- EG005T: EM2100914 #2 Poor duplicate precision for manganese due to sample heterogeneity. Confirmed by re-extraction and re-analysis. Manganese results of 1770mg/kg, 440mg/kg, 468mg/kg, 936mg/kg, 434mg/kg and 1100mg/kg was obtained.

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Work Order : EM2100914
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : Collins Molle

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	H1 0.4	H2 0.4	H3 0.4	H4 0.8	H5 0.2
				Sampling date / time	20-Jan-2021 00:00	20-Jan-2021 00:00	20-Jan-2021 00:00	20-Jan-2021 00:00	20-Jan-2021 00:00
Compound	CAS Number	LOR	Unit		EM2100914-001	EM2100914-002	EM2100914-003	EM2100914-004	EM2100914-005
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	---	0.1	%		14.5	29.6	23.2	20.2	7.5
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	8	<5	<5	<5
Barium	7440-39-3	10	mg/kg		20	150	80	40	20
Beryllium	7440-41-7	1	mg/kg		<1	1	<1	<1	<1
Boron	7440-42-8	50	mg/kg		<50	<50	<50	<50	<50
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		<2	19	10	5	<2
Cobalt	7440-48-4	2	mg/kg		10	30	13	8	11
Copper	7440-50-8	5	mg/kg		95	26	52	29	118
Lead	7439-92-1	5	mg/kg		17	20	183	<5	<5
Manganese	7439-96-5	5	mg/kg		157	468	258	160	197
Nickel	7440-02-0	2	mg/kg		10	19	11	10	7
Selenium	7782-49-2	5	mg/kg		<5	<5	<5	<5	<5
Vanadium	7440-62-2	5	mg/kg		49	79	65	48	57
Zinc	7440-66-6	5	mg/kg		90	148	123	25	36
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	0.3	<0.1	<0.1
EP060/071: 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		520	<100	140	<100	<100
C29 - C36 Fraction	---	100	mg/kg		170	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	---	50	mg/kg		690	<50	140	<50	<50
EP060/071: 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		640	<100	220	<100	<100
>C34 - C40 Fraction	---	100	mg/kg		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	---	50	mg/kg		640	<50	220	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	---	50	mg/kg		<50	<50	<50	<50	<50

Page : 4 of 9
Work Order : EM2100914
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : Collins Molle

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	H1 0.4	H2 0.4	H3 0.4	H4 0.8	H5 0.2
				Sampling date / time	20-Jan-2021 00:00	20-Jan-2021 00:00	20-Jan-2021 00:00	20-Jan-2021 00:00	20-Jan-2021 00:00
Compound	CAS Number	LOR	Unit		EM2100914-001	EM2100914-002	EM2100914-003	EM2100914-004	EM2100914-005
					Result	Result	Result	Result	Result
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
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		93.5	91.1	86.7	90.6	87.7
Toluene-D8	2037-26-5	0.2	%		79.5	79.4	80.3	80.6	78.1
4-Bromofluorobenzene	460-00-4	0.2	%		83.6	85.0	87.8	83.6	89.9

Page : 5 of 9
Work Order : EM2100914
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : Collins Molle

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	HS 0.9	HS 0.4	Duplicate	---	---
				Sampling date / time	20-Jan-2021 00:00	20-Jan-2021 00:00	20-Jan-2021 00:00	---	---
Compound	CAS Number	LOR	Unit		EM2100914-006	EM2100914-007	EM2100914-008	------	------
					Result	Result	Result	---	---
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	---	0.1	%		26.2	20.2	17.7	---	---
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	<5	<5	---	---
Barium	7440-39-3	10	mg/kg		410	70	50	---	---
Beryllium	7440-41-7	1	mg/kg		<1	<1	<1	---	---
Boron	7440-42-8	50	mg/kg		<50	<50	<50	---	---
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	---	---
Chromium	7440-47-3	2	mg/kg		8	6	2	---	---
Cobalt	7440-48-4	2	mg/kg		27	13	10	---	---
Copper	7440-50-8	5	mg/kg		18	30	104	---	---
Lead	7439-92-1	5	mg/kg		7	8	16	---	---
Manganese	7439-96-5	5	mg/kg		212	93	186	---	---
Nickel	7440-02-0	2	mg/kg		14	10	10	---	---
Selenium	7782-49-2	5	mg/kg		<5	<5	<5	---	---
Vanadium	7440-62-2	5	mg/kg		70	56	41	---	---
Zinc	7440-66-6	5	mg/kg		5	9	213	---	---
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	0.2	<0.1	---	---
EP060/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	---	10	mg/kg		<10	<10	<10	---	---
C10 - C14 Fraction	---	50	mg/kg		<50	<50	<50	---	---
C15 - C28 Fraction	---	100	mg/kg		<100	<100	1300	---	---
C29 - C36 Fraction	---	100	mg/kg		<100	<100	530	---	---
* C10 - C36 Fraction (sum)	---	50	mg/kg		<50	<50	1830	---	---
EP060/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	---	---
* C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	---	---
>C10 - C16 Fraction	---	50	mg/kg		<50	<50	80	---	---
>C16 - C34 Fraction	---	100	mg/kg		<100	<100	1640	---	---
>C34 - C40 Fraction	---	100	mg/kg		<100	<100	230	---	---
* >C10 - C40 Fraction (sum)	---	50	mg/kg		<50	<50	1930	---	---
* >C10 - C16 Fraction minus Naphthalene (F2)	---	50	mg/kg		<50	<50	60	---	---

Page : 6 of 9
Work Order : EM2100914
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : Collins Molle

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	HS 0.9	HS 0.4	Duplicate	---	---
				Sampling date / time	20-Jan-2021 00:00	20-Jan-2021 00:00	20-Jan-2021 00:00	---	---
Compound	CAS Number	LOR	Unit		EM2100914-006	EM2100914-007	EM2100914-008	------	------
					Result	Result	Result	---	---
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	---	---
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	---	---
Ethylbenzene	100-41-4	0.5	mg/kg		<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	---	---
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	---	---
* Sum of BTEX	---	0.2	mg/kg		<0.2	<0.2	<0.2	---	---
* Total Xylenes	---	0.5	mg/kg		<0.5	<0.5	<0.5	---	---
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	---	---
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		78.4	104	103	---	---
Toluene-D8	2037-26-5	0.2	%		66.7	83.7	82.0	---	---
4-Bromofluorobenzene	460-00-4	0.2	%		77.9	96.5	87.1	---	---

Page : 7 of 9
Work Order : EM2100914
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : Collins Molle

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	Rinsate	—	—	—	—
				Sampling date / time	20-Jan-2021 00:00	—	—	—	—
Compound	CAS Number	LOR	Unit		EM2100914-008	—	—	—	—
					Result	—	—	—	—
EG020F: Dissolved Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	—	—	—	—
Boron	7440-42-8	0.05	mg/L		0.09	—	—	—	—
Barium	7440-39-3	0.001	mg/L		<0.001	—	—	—	—
Beryllium	7440-41-7	0.001	mg/L		<0.001	—	—	—	—
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	—	—	—	—
Cobalt	7440-48-4	0.001	mg/L		<0.001	—	—	—	—
Chromium	7440-47-3	0.001	mg/L		<0.001	—	—	—	—
Copper	7440-50-8	0.001	mg/L		<0.001	—	—	—	—
Manganese	7439-96-5	0.001	mg/L		<0.001	—	—	—	—
Nickel	7440-02-0	0.001	mg/L		<0.001	—	—	—	—
Lead	7439-92-1	0.001	mg/L		<0.001	—	—	—	—
Selenium	7782-49-2	0.01	mg/L		<0.01	—	—	—	—
Vanadium	7440-62-2	0.01	mg/L		<0.01	—	—	—	—
Zinc	7440-66-6	0.005	mg/L		<0.005	—	—	—	—
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	—	—	—	—
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	—	—	—	—
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	—	—	—	—

Page : 8 of 9
Work Order : EM2100914
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : Collins Molle

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	Rinsate	—	—	—	—
				Sampling date / time	20-Jan-2021 00:00	—	—	—	—
Compound	CAS Number	LOR	Unit		EM2100914-008	—	—	—	—
					Result	—	—	—	—
EP080: BTEXN - Continued									
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	%		100	—	—	—	—
Toluene-D8	2037-26-5	2	%		96.4	—	—	—	—
4-Bromofluorobenzene	460-00-4	2	%		101	—	—	—	—

Page	9 of 9
Work Order	EM2100914
Client	GEO-ENVIRONMENTAL SOLUTIONS
Project	Collins Molle

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
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		Recovery Limits (%)	
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

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: EM2101307	Page	: 1 of 8
Client	: GEO-ENVIRONMENTAL SOLUTIONS	Laboratory	: Environmental Division Melbourne
Contact	: DR JOHN PAUL CUMMING	Contact	: Shirley LeCornu
Address	: 29 KIRKSWAY PLACE BATTERY POINT TASMANIA, AUSTRALIA 7004	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: +61 03 6223 1839	Telephone	: +6138549 9630
Project	: Collins Molle	Date Samples Received	: 22-Jan-2021 09:25
Order number	: ----	Date Analysis Commenced	: 23-Jan-2021
C-O-C number	: ----	Issue Date	: 08-Feb-2021 16:04
Sampler	:		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 9		
No. of samples analysed	: 9		

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
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC

RIGHT SOLUTIONS | RIGHT PARTNER

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
a = 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(e)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.
- 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(e)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.
- 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.
- This is a rebatch of EM2100914.

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Work Order : EM2101307
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : Collins Molle

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	H1 0.4	H2 0.4	H3 0.4	H4 0.8	H5 0.2
				Sampling date / time	20-Jan-2021 00:00	20-Jan-2021 00:00	20-Jan-2021 00:00	20-Jan-2021 00:00	20-Jan-2021 00:00
Compound	CAS Number	LOR	Unit		EM2101307-001	EM2101307-002	EM2101307-003	EM2101307-004	EM2101307-005
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		14.5	29.6	23.2	20.2	7.5
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		0.9	<0.5	0.9	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		3.9	<0.5	3.9	<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		1.9	<0.5	2.0	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		26.5	<0.5	26.1	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		7.0	<0.5	7.2	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		35.5	<0.5	41.8	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		34.8	<0.5	40.8	<0.5	<0.5
Benz[a]anthracene	56-55-3	0.5	mg/kg		16.4	<0.5	17.8	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		14.9	<0.5	16.1	<0.5	<0.5
Benzo[b+j]fluoranthene	205-99-2 205-82-3	0.5	mg/kg		15.4	<0.5	17.3	<0.5	<0.5
Benzo[k]fluoranthene	207-08-9	0.5	mg/kg		6.4	<0.5	7.5	<0.5	<0.5
Benzo[a]pyrene	50-32-8	0.5	mg/kg		15.6	<0.5	18.4	<0.5	<0.5
Indeno[1,2,3-cd]pyrene	193-39-5	0.5	mg/kg		6.1	<0.5	7.6	<0.5	<0.5
Dibenz[a,h]anthracene	53-70-3	0.5	mg/kg		1.7	<0.5	1.9	<0.5	<0.5
Benzo[g,h,i]perylene	191-24-2	0.5	mg/kg		7.8	<0.5	9.7	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		194	<0.5	228	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		22.0	<0.5	25.6	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		22.0	0.6	25.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		22.0	1.2	25.6	1.2	1.2
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		89.4	90.4	86.5	112	85.0
2-Chlorophenol-D4	93951-73-6	0.5	%		95.0	92.0	91.3	104	90.0
2,4,6-Tribromophenol	118-79-6	0.5	%		85.7	75.7	83.9	80.0	71.2
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		96.6	96.0	95.2	116	93.5
Anthracene-d10	1719-06-8	0.5	%		105	116	103	112	110
4-Terphenyl-d14	1718-51-0	0.5	%		99.2	108	96.8	130	102

Page : 4 of 6
Work Order : EM2101307
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : Collins Molle

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	H5 0.9	H6 0.4	Duplicate	---	---
				Sampling date / time	20-Jan-2021 00:00	20-Jan-2021 00:00	20-Jan-2021 00:00	---	---
Compound	CAS Number	LOR	Unit		EM2101307-006	EM2101307-007	EM2101307-008	----	----
					Result	Result	Result	---	---
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		26.2	29.2	17.7	---	---
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	4.0	---	---
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	10.2	---	---
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	8.5	---	---
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	13.2	---	---
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	216	---	---
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	48.9	---	---
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	1.6	235	---	---
Pyrene	129-00-0	0.5	mg/kg		<0.5	1.6	217	---	---
Benz[a]anthracene	56-55-3	0.5	mg/kg		<0.5	1.1	74.9	---	---
Chrysene	218-01-9	0.5	mg/kg		<0.5	1.8	69.4	---	---
Benzo[b+j]fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	1.2	75.3	---	---
Benzo[k]fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	26.9	---	---
Benzo[a]pyrene	50-32-8	0.5	mg/kg		<0.5	1.1	74.7	---	---
Indeno[1,2,3-cd]pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	33.8	---	---
Dibenz[a,h]anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	6.8	---	---
Benzo[g,h,i]perylene	191-24-2	0.5	mg/kg		<0.5	0.6	45.3	---	---
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	8.2	1160	---	---
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	1.3	104	---	---
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		0.6	1.6	104	---	---
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		1.2	1.9	104	---	---
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		91.3	91.7	83.4	---	---
2-Chlorophenol-D4	93951-73-6	0.5	%		96.5	94.6	86.4	---	---
2,4,6-Tribromophenol	118-79-6	0.5	%		75.8	75.2	65.9	---	---
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		99.7	99.0	92.0	---	---
Anthracene-d10	1719-06-8	0.5	%		117	116	113	---	---
4-Terphenyl-d14	1718-51-0	0.5	%		109	112	104	---	---

Page: 5 of 6
Work Order: EM2101307
Client: GEO-ENVIRONMENTAL SOLUTIONS
Project: Collins Molle

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	Rinsate	—	—	—	—
				Sampling date / time	20-Jan-2021 00:00	—	—	—	—
Compound	CAS Number	LOR	Unit	EM2101307-008					
				Result		—	—	—	—
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	—	—	—	—	
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%	28.0	—	—	—	—	
2-Chlorophenol-D4	93951-73-6	1.0	%	69.1	—	—	—	—	
2,4,6-Tribromophenol	118-79-6	1.0	%	74.3	—	—	—	—	
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%	79.0	—	—	—	—	
Anthracene-d10	1719-06-8	1.0	%	74.5	—	—	—	—	
4-Terphenyl-d14	1718-51-0	1.0	%	77.5	—	—	—	—	

Page: 6 of 6
Work Order: EM2101307
Client: GEO-ENVIRONMENTAL SOLUTIONS
Project: Collins Molle

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

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

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: EM2102079	Page	: 1 of 5
Client	: GEO-ENVIRONMENTAL SOLUTIONS	Laboratory	: Environmental Division Melbourne
Contact	: DR JOHN PAUL CUMMING	Contact	: Shirley LeCornu
Address	: 29 KIRKSWAY PLACE BATTERY POINT TASMANIA, AUSTRALIA 7004	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: +61 03 6223 1839	Telephone	: +6138549 9630
Project	: Collins Molle	Date Samples Received	: 22-Jan-2021 09:25
Order number	: ----	Date Analysis Commenced	: 11-Feb-2021
C-O-C number	: ----	Issue Date	: 15-Feb-2021 11:52
Sampler	: ----		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 2		
No. of samples analysed	: 2		

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

RIGHT SOLUTIONS | RIGHT PARTNER

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
a = 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(e)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.
- 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.
- This is a rebatch of EM2100914

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Work Order : EM2102079
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : Collins Molle

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	H1 0.4	H3 0.4	---	---	---
				Sampling date / time	20-Jan-2021 00:00	20-Jan-2021 00:00	---	---	---
Compound	CAS Number	LOR	Unit		EM2102079-001	EM2102079-002	----	----	----
					Result	Result	---	---	---
EN60: ASLP Leaching Procedure - Inorganics/Non-Volatile Organics (Glass Vessel)									
Initial pH	---	0.1	pH Unit		8.6	7.9	---	---	---
After HCl pH	---	0.1	pH Unit		2.2	2.2	---	---	---
Extraction Fluid pH	---	0.1	pH Unit		5.0	5.0	---	---	---
Final pH	---	0.1	pH Unit		5.1	5.1	---	---	---

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Work Order : EM2102079
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : Collins Molle

Analytical Results

Sub-Matrix: TCLP LEACHATE (Matrix: WATER)				Sample ID	H1 0.4	H3 0.4	---	---	---
				Sampling date / time	20-Jan-2021 00:00	20-Jan-2021 00:00	---	---	---
Compound	CAS Number	LOR	Unit		EM2102079-001	EM2102079-002	----	----	----
					Result	Result	---	---	---
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		3.5	<1.0	---	---	---
Acenaphthylene	208-96-8	1.0	µg/L		6.7	1.2	---	---	---
Acenaphthene	83-32-9	1.0	µg/L		1.9	2.8	---	---	---
Fluorene	86-73-7	1.0	µg/L		4.9	1.7	---	---	---
Phenanthrene	85-01-8	1.0	µg/L		37.4	8.8	---	---	---
Anthracene	120-12-7	1.0	µg/L		6.9	1.5	---	---	---
Fluoranthene	206-44-0	1.0	µg/L		12.1	3.3	---	---	---
Pyrene	129-00-0	1.0	µg/L		10.4	2.8	---	---	---
Benz[a]anthracene	56-55-3	1.0	µg/L		2.5	<1.0	---	---	---
Chrysene	218-01-9	1.0	µg/L		2.0	<1.0	---	---	---
Benzo[b+j]fluoranthene	205-99-2 205-82-3	1.0	µg/L		1.7	<1.0	---	---	---
Benzo[k]fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	---	---	---
Benzo[a]pyrene	50-32-8	0.5	µg/L		1.8	<0.5	---	---	---
Indeno[1,2,3-cd]pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	---	---	---
Dibenz[a,h]anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	---	---	---
Benzo[g,h,i]perylene	191-24-2	1.0	µg/L		<1.0	<1.0	---	---	---
^ Sum of polycyclic aromatic hydrocarbons	---	0.5	µg/L		91.8	21.1	---	---	---
^ Benzo(a)pyrene TEQ (zero)	---	0.5	µg/L		2.2	<0.5	---	---	---
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		92.6	89.5	---	---	---
Anthracene-d10	1719-06-8	1.0	%		100	96.4	---	---	---
4-Terphenyl-d14	1718-51-0	1.0	%		101	94.6	---	---	---

Page	5 of 5
Work Order	EM2102079
Client	GEO-ENVIRONMENTAL SOLUTIONS
Project	Collins Molle

Surrogate Control Limits

Sub-Matrix: TCLP LEACHATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
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

Proposed Traffic Signal Installation Project Junction Of Collins Street and Molle Street

Statement of Archaeological Potential Final Version 1

AUTHOR: Stuart Huys
27 Apsley St South Hobart, TAS 7004

CLIENT:
Hobart City council

14.3.2021

CULTURAL HERITAGE MANAGEMENT AUSTRALIA

Table of Contents

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List of Plates

Executive Summary

Project Background

The Hobart City Council (HCC) is proposing to install traffic signals at the junction of Collins Street and Molle Street in the Hobart CBD (see Figures 1 and 2). The works will involve the following components:

The proposed works area at the junction of Collins and Molle Streets is situated within land that is governed by the Hobart Interim Planning Scheme 2015 (HIPS) and is located within the area defined as a Place of Archaeological Potential (under Table E13.4). The HCC has advised that the proposed traffic signal installation works are not exempt. In order to assess the works application in relation to the relevant provisions of the Historic Heritage Code of the *Hobart Interim Planning Scheme 2015* (HIPS 2015), the HCC has requested the preparation of a Statement of Archaeological Potential as defined in Table E`13.3.1 of the Historic Heritage Code. CHMA Pty Ltd have been engaged by the HCC to prepare this Statement of Archaeological Potential.

Statement of Archaeological Potential and Recommendations

The proposed traffic signal installation works at the junctions of Collins and Molle Street will be entirely confined to within the existing road and footpath alignments of these two streets. Any excavation works associated with the installation of the traffic signals will be confined to a maximum depth of 800mm. The area where the excavation works are to occur has been subject to very levels of existing disturbances associated not only with the construction of the roads and footpaths, but also the installation of a series of existing underground infrastructure services such as storm water pipes, power cables and optic fibre cables.

As detailed in section 3 of this report, the road easements for the Hobart CBD, including Collins Street and Molle Street, were established and built as part of the very early planning development process for the town of Hobart. The current alignment and width of the road easements of Collins Street and Molle Street appears to be very much the same as the original gazetted road easement shown in the early planning maps for the town of Hobart. As such, it is considered very unlikely that there were any early dwellings or other infrastructure ever constructed within the alignment of of Molle and Collins Streets, around their junction, where the proposed traffic signal works are to take place.

If any heritage structures or features were present within the road easements in this area, they are likely to have been completely destroyed or at the least very heavily impacted. Any structural features that may still survive within the road easement are likely to be buried under road base and fill extending to a depth of at least 1m. On the basis of the above, the archaeological potential of the proposed traffic installation works area is assessed as being low to very low.

Management Recommendations

It is assessed that the proposed installation of the traffic signals at the junction of Collins Street and Molle Street has a very low potential for impacting on any historic heritage feature. On this basis it is recommended that there should be no heritage constraints to these works proceeding. However, as per the Practice Note No 2 by the Tasmanian Heritage Council, processes must be followed should any unexpected archaeological features and/or deposits be revealed during works.

1.0 Project Background

1.1 Project Description

The Hobart City Council (HCC) is proposing to install traffic signals at the junction of Collins Street and Molle Street in the Hobart CBD (see Figures 1 and 2). The works will involve the following components:

- installation of six new traffic signals;
- the installation of a power cable trench between the new traffic signals;
- the removal and/or replacement of existing road signage;
- the repair and/or replacement of existing curbing, gutters and pedestrian walkways around the junction of the two new streets.

All excavation works associated with the installation of the new traffic signals will be confined to a maximum depth of 800mm. The detailed concept drawings for the works outline above are provided in Appendix 1.

The proposed works area at the junction of Collins and Molle Streets is situated within land that is governed by the Hobart Interim Planning Scheme 2015 (HIPS) and is located within the area defined as a Place of Archaeological Potential (under Table E13.4). Under the General exemptions for E.13.0 (Historic Heritage Code) excavation in a Place of Archaeological Potential is exempt if:

(y) maintenance and repair by or on behalf of the State Government, a Council, a statutory authority, or a corporation all the shares of which are held by or on behalf of the State or by a statutory authority, of infrastructure such as roads, rail lines, footpaths, cycle paths, drains, sewers, power lines and pipelines, where like for like materials and finishes are used for reinstatement.

The HCC has advised that the proposed traffic signal installation works are not exempt. In order to assess the works application in relation to the relevant provisions of the Historic Heritage Code of the *Hobart Interim Planning Scheme 2015* (HIPS 2015), the HCC has requested the preparation of a Statement of Archaeological Potential as defined in Table E`13.3.1 of the Historic Heritage Code. CHMA Pty Ltd have been engaged by the HCC to prepare this Statement of Archaeological Potential.

The works area is also situated within a designated Heritage Precinct (HR1), as defined under Table E13.2 (Heritage Precincts). In addition, there are a number of heritage places included on the Heritage Places schedule of the scheme along both Collins Street and Molle Street, in the immediate vicinity of the proposed works area. As per Part E.13.4, within a Heritage Place, Heritage Precinct or Cultural Landscape Precinct, no permit is required for;

> *minor upgrades by or on behalf of the State government, a Council, or a statutory authority or a corporation all the shares of which are held by or on behalf of the State or by a statutory authority, of infrastructure such as roads, rail lines, footpaths, cycle paths, drains, sewers, power lines and pipelines including:*

minor widening or narrowing of existing carriageways; or making, placing or upgrading kerbs, gutters, footpaths, roadsides, traffic control devices; and
markings, street lighting and landscaping, except where any of those elements are specifically part of the General Description column in Table E13.1;

The HCC has advised that the proposed traffic signal installation works are exempt from requiring a planning permit under the Historic Heritage Code of the Scheme and will not need to be assessed (advice provided on the 2-3-2021).

1.2 Project Methodology

This Statement of Archaeological Potential has been implemented in three broad stages.

Stage 1 (Background Research and Project Liaison)

Contact with Hobart City Council

On the 2-3-2021, Stuart Huys (CHMA) met with Stuart Baird (Senior Transport Engineer) and Sarah Waight, the Senior Cultural Heritage Officer from the Hobart City Council. The purpose of the meeting was to discuss the details of the development proposal and to generate an understanding as to the likely heritage assessment requirements for the project. At this meeting. As part of this initial contact, the HCC provided concept plans for the proposed traffic signal installation works, as well as heritage information pertinent to these works.

Collation of Background Information

As part of Stage 1 the following research was carried out and background information collated for this project.

- A review of the relevant heritage registers and the collation of information pertaining to heritage register entries for the study area and surrounds.
- Historic literature, site plans and records for the for the study area.
- Documentation and plans relating to the proposed installation of infrastructure associated with the Project.
- Planning and Regulatory requirements for heritage sites in Tasmania and the Hobart City Council Municipality.

Stage 2 (Field Inspection)

Stage 2 entailed the fieldwork component of the Assessment. The field inspection was undertaken on the 10-3-2021 by Stuart Huys (CHMA archaeologist). The primary purpose of the field inspection was to confirm the specific locations for the installation of the proposed traffic signal facilities and associated infrastructure, to ascertain the extent of potential impacts that these installations may have on heritage values, and to determine the potential archaeological sensitivity of these works. As part of the

inspection process, all areas where installations and alterations would occur were photographed.

Stage 3 (Preparation of Report)

Stage three of the project involved the production of this report which details the findings of the assessment and includes a Statement of Archaeological Potential for the proposed scope of works specified in section 1.1. The report has been prepared by Stuart Huys from CHMA Pty Ltd.

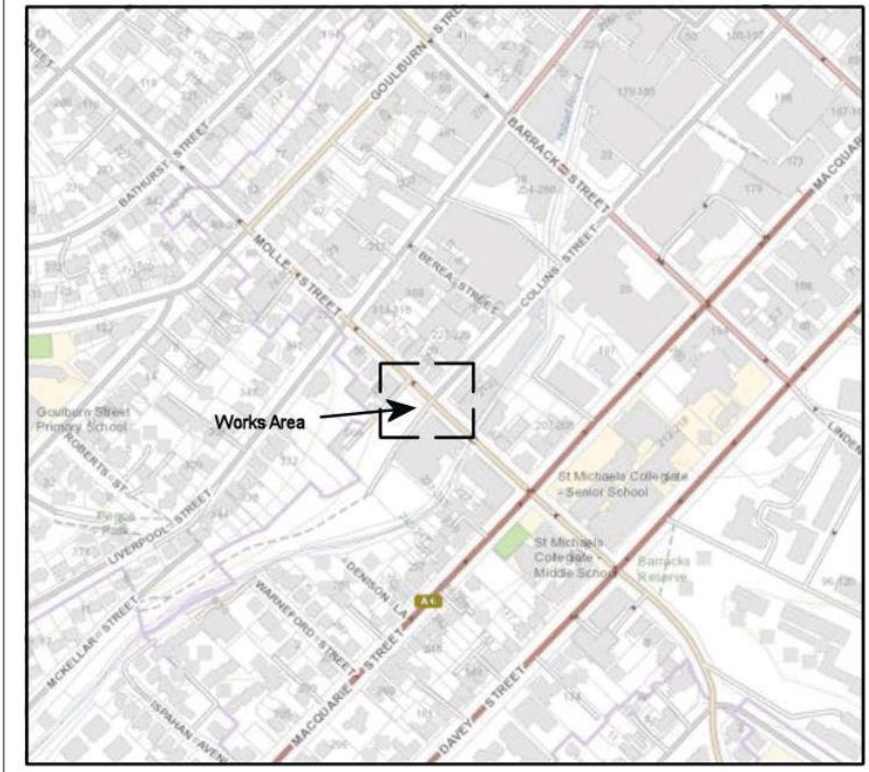

Figure 1: The location of the proposed traffic signal installation works at the junction of Collins Street and Molle Street in the Hobart CBD

Figure 2: Aerial image showing the location of the works area at the junction of Collins Street and Molle Street

2.0 Statutory Controls and Legislative Requirements

In accordance with the requirements of the *Land Use Planning and Approvals Act 1993* (LUPAA), Local Planning Schemes have been established throughout Tasmania in accordance with regional divisions of the state.

Development activities in Hobart is governed by two planning schemes: *the Hobart Interim Planning Scheme 2015* (HIPS 2015) and *the Sullivans Cove Planning Scheme 1997* (SCPS 1997). Both schemes are overseen by the Hobart City Council. The proposed works area at the junction of Collins and Molle Streets is situated within land that is governed by the HIPS (2015).

The Hobart Interim Planning Scheme 2015 (HIPS)
Notice of the declaration of the Hobart Interim Planning Scheme 2015 was published in the Tasmanian Government Gazette on 13 May 2015 and it came into operation on Wednesday 20 May 2015. The Minister for Planning has declared that the HIPS applies to all of the land in the City of Hobart except for that covered by *the Sullivans Cove Planning Scheme1997*.

Historic heritage within the City of Hobart is addressed by the Historic Heritage Code (HIPS clause E13). The Purpose of the Historic Heritage Code is:

> *To recognise and protect the historic cultural heritage significance of places, precincts, landscapes and areas of archaeological potential by regulating development that may impact on their values, features and characteristics (13.1.1).*

This code applies to development involving land defined in this code as any of the following:

(a) a Heritage Place;
(b) a Heritage Precinct;
(c) a Cultural Landscape Precinct;
(d) a Place of Archaeological Potential.

A Place of Archaeological Potential
Table E13.4 lists Central Hobart, the extent of which is shown in Figure 3 (Plan E13.4.1), as a Place of Archaeological Potential. The traffic signal installation works area at the junction of Collins and Molle Streets is situated within this Place of Archaeological Potential.

Places of Archaeological Potential are covered by the Historic Heritage Code (HIPS clause E13). The Purpose of the Historic Heritage Code is:

To recognise and protect the historic cultural heritage significance of places, precincts, landscapes and areas of archaeological potential by regulating development that may impact on their values, features and characteristics (13.1.1).

The Objective of the Development Standard as it relates to Places of Archaeological Potential is *'to ensure that building, works and demolition at a place of archaeological potential is planned and implemented in a manner that seeks to understand, retain, protect, preserve and otherwise appropriately manage significant archaeological evidence'* (HIPS clause E13.10.1). Acceptable solutions and performance criteria are shown in Table 1 below.

Table 1: Summary of performance Criteria and Acceptable Solutions for a Place of Archaeological Potential

Acceptable Solutions:	**Performance Criteria:**
A1 Building and works do not involve excavation or ground disturbance.	P1 Buildings, works and demolition must not unnecessarily impact on archaeological resources at places of archaeological potential, having regard to: (a) the nature of the archaeological evidence, either known or predicted; (b) measures proposed to investigate the archaeological evidence to confirm predictive statements of potential; (c) strategies to avoid, minimise and/or control impacts arising from building, works and demolition; (d) where it is demonstrated there is no prudent and feasible alternative to impacts arising from building, works and demolition, measures proposed to realise both the research potential in the archaeological evidence and a meaningful public benefit from any archaeological investigation; (e) measures proposed to preserve significant archaeological evidence 'in situ'.

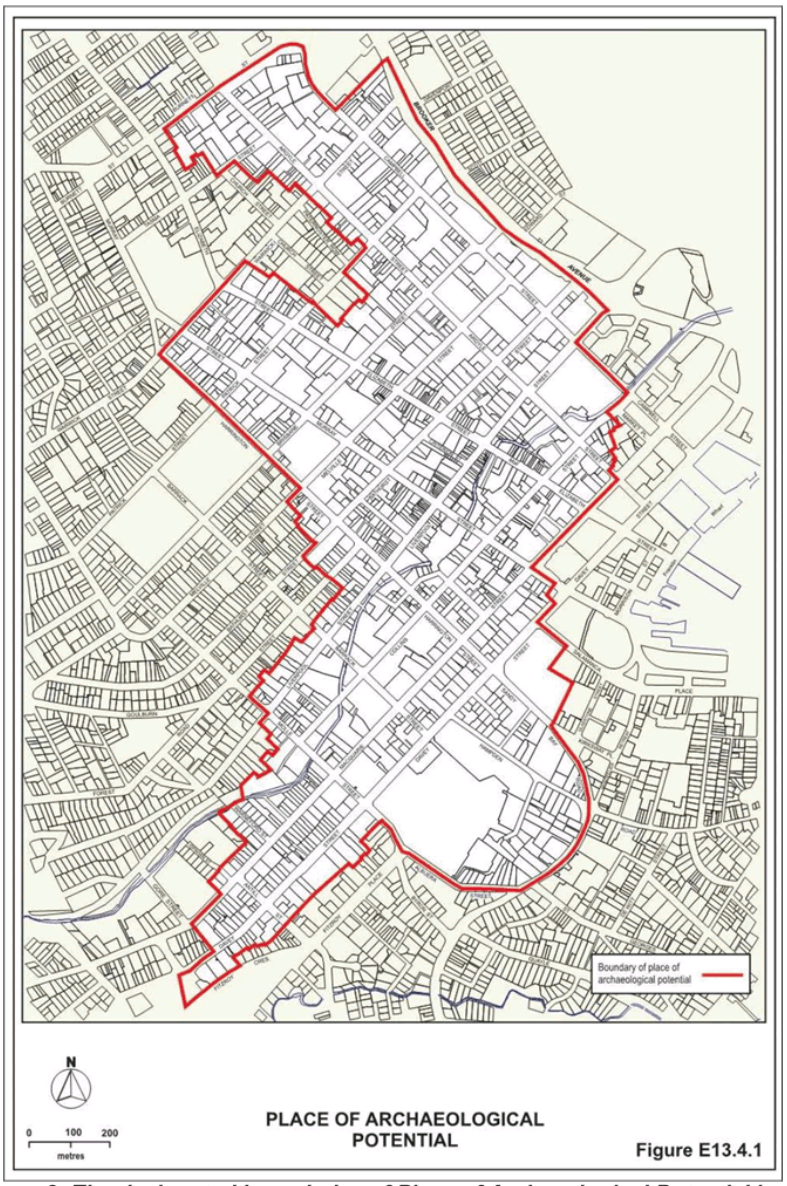

Figure 3: The designated boundaries of Place of Archaeological Potential in the Hobart City Council Area

3.0 A Brief Historic Overview

The following provides a brief historic overview for the Hobart CBD area, with specific focus of the early planning and development of the road network in the area around Collins Street and Molle Street. The historic overview is aimed at providing a historic context for assessing the archaeological potential for the proposed traffic signal installation works in this area.

The central roads in Hobart are generally formed in a grid pattern. The early planning maps for Hobart show that this grid pattern was laid out quite early in the development period of Hobart. As Robertson (1919) noted:

> *By 1811 Governor Macquarie had seen proof, in Sydney, of the need of a rectangular system of "town planning" for business purposes, and he came prepared to adopt that system in Hobart as far as possible… (1919:2).*

In 1821 Macquarie praised the 'numerous changes and improvements which Hobart Town has undergone' including the 'substantial buildings' and 'the whole laid out in regular streets' (cited in Somerville 1944:111). Additionally, he noted the erection of Government House.

The early roads were also wide which has allowed for the formation of the current road network. As Robertson (1919) explained:

> *'[a]n early Government Regulation compelled Hobart owners, in their building operations, to set back their erections to a greater distance from the kerb than now prevails in Hobart' (1919:3).*

The early roads in Hobart were constructed by convict labour. Until the 1870s all construction was undertaken by hand labour and basic tools (Newitt 1988:4). The 'making' and maintenance of good quality roads was a significant issue for the colony as they were vital for the safe and rapid travel, and allowed goods to be moved efficiently (Newitt 1988:11). There was a focus on keeping roads clear of debris (Newitt 1988:13).

The current grid alignment of the major streets in the Hobart CBD, including Collins Street and Molle Street is much the same as that shown in the early planning maps. Figure 4 shows Sprent's map (circa 1833-1847) for the area around Collins and Molle Streets, with Figure 5 providing an overlay of Sprent's map on the current alignment of the two streets.

Whilst there has clearly been some level of redevelopment along Collins and Molle Street, the width of the two streets (including footpaths) has relatively unchanged, and many of the early buildings are still in existence. Plate 1 shows a photo taken of Collins Street in 1851, showing the width of the street at the time.

Figure 4: Sprent's Map circa 1833-1847, showing the area around the junction of Collins and Molle Streets, where the proposed traffic signal works are located (The List accessed 2021)

Figure 5: Properties listed on the Tasmanian Heritage Register overlayed on Hobart's current topographic map and Sprent's Map for the area around Collins and Molle Streets (TheList accessed 2021)

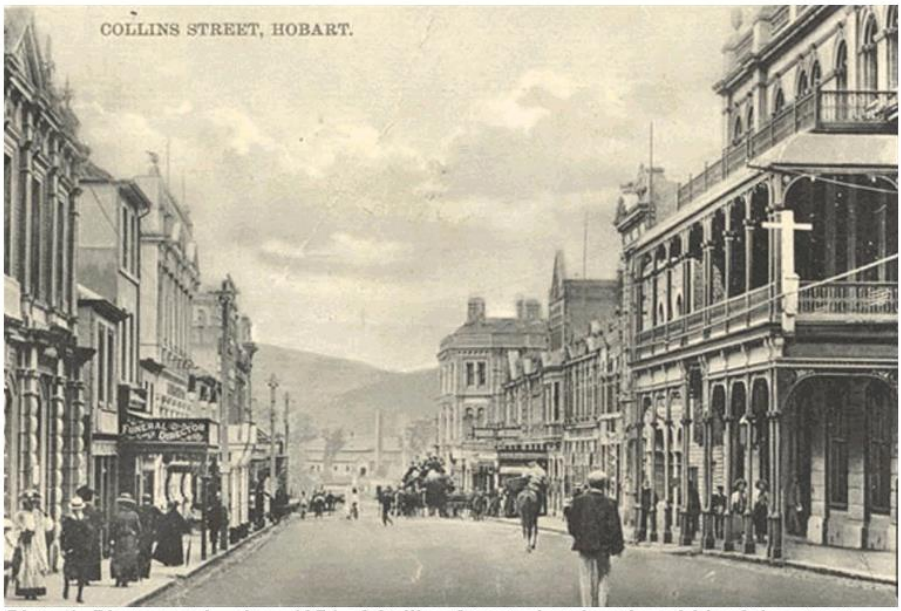

Plate 1: Photograph: circa 1851 of Collins Street showing the width of the street and footpaths at the time (TAHO)

4.0 Statement of Archaeological Potential and Management Recommendations

Statement of Archaeological Potential

The proposed traffic signal installation works at the junctions of Collins and Molle Street will be entirely confined to within the existing road and footpath alignments of these two streets. Any excavation works associated with the installation of the traffic signals will be confined to a maximum depth of 800mm. The area where the excavation works are to occur has been subject to very levels of existing disturbances associated not only with the construction of the roads and footpaths, but also the installation of a series of existing underground infrastructure services such as storm water pipes, power cables and optic fibre cables (see Plates 2 and 3).

As detailed in section 3 of this report, the road easements for the Hobart CBD, including Collins Street and Molle Street, were established and built as part of the very early planning development process for the town of Hobart. The current alignment and width of the road easements of Collins Street and Molle Street appears to be very much the same as the original gazetted road easement shown in the early planning maps for the town of Hobart. As such, it is considered very unlikely that there were any early dwellings or other infrastructure ever constructed within the alignment of of Molle and Collins Streets, around their junction, where the proposed traffic signal works are to take place.

If any heritage structures or features were present within the road easements in this area, they are likely to have been completely destroyed or at the least very heavily impacted. Any structural features that may still survive within the road easement are likely to be buried under road base and fill extending to a depth of at least 1m. On the basis of the above, the archaeological potential of the proposed traffic installation works area is assessed as being very low.

Management Recommendations

It is assessed that the proposed installation of the traffic signals at the junction of Collins Street and Molle Street has a very low potential for impacting on any historic heritage feature. On this basis it is recommended that there should be no heritage constraints to these works proceeding. However, as per the Practice Note No 2 by the Tasmanian Heritage Council, processes must be followed should any unexpected archaeological features and/or deposits be revealed during works.

Plate 2: View south-west along Collins Street, towards the junction of Molle Street, in the area where traffic signals are proposed to be installed

Plate 3: View north-west along Molle Street, towards the junction of Collins Street, in the area where traffic signals are proposed to be installed

References Cited

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Robertson, W.G. 1919. *Hobart Streets*. Manuscript held in the Tasmanian Library, Tasmanian Archive and Heritage Office.

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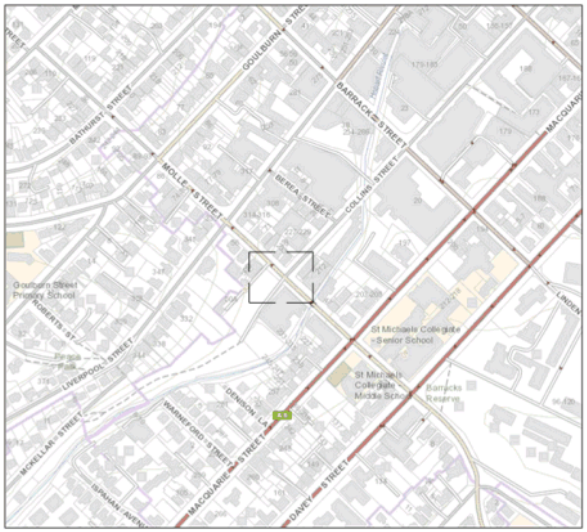
Places of Archaeological Potential in the Hobart City Council Area
http://iplan.tas.gov.au/pages/plan/book.aspx?exhibit=hobips, sourced 4/04/2018

Appendix 1

Concept Plans for the Traffic Signal Installation at the Junction of Collins Street and Molle Street

City of HOBART

HOBART CITY COUNCIL
COLLINS STREET AND MOLLE STREET SIGNILISATION



LOCALITY PLAN

Sheet List Table	
Sheet Number	Sheet Title
C1000	HCC-MSIG-C1000 - COVER PAGE
C1010	HCC-MSIG-C1010 - TYPICAL SECTIONS
C1100	HCC-MSIG-C1100 - GENERAL ARRANGEMENT
C1200	HCC-MSIG-C1200 - DRAINAGE AND SERVICES
C1300	HCC-MSIG-C1300 - SIGNALS
C1301	HCC-MSIG-C1301 - SIGNALS
C1320	HCC-MSIG-C1320 - SIGNALS FOUNDATIONS PLAN
C1350	HCC-MSIG-C1350 - SIGNALS FOUNDATIONS
C1351	HCC-MSIG-C1351 - SIGNALS FOUNDATIONS
C1400	HCC-MSIG-C1400 - SIGNS AND LINE MARKING

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Small team, big outcomes

Client	HOBART CITY COUNCIL
Project	COLLINS STREET AND MOLLE STREET SIGNILISATION
Title	COVER PAGE
Drawing Number	HCC-MSIG-C1000
Revision	A ISSUED 20/10/2020

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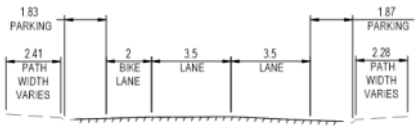
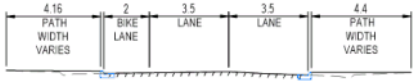


MOLLE STREET - WITH PARKING

Scale 1:200 @ A3



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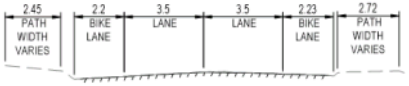
Scale 1:200 @ A3



COLLINS STREET

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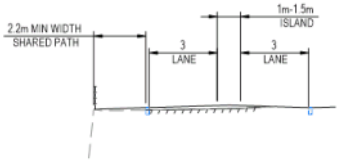

MOLLE LANE CARPARK

Scale 1:200 @ A3

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Project	COLLINS STREET AND MOLLE STREET SIGNILISATION
Title	TYPICAL SECTIONS
Drawing Number	HCC-MSIG-C1010
Revision	A ISSUED 20/10/2020

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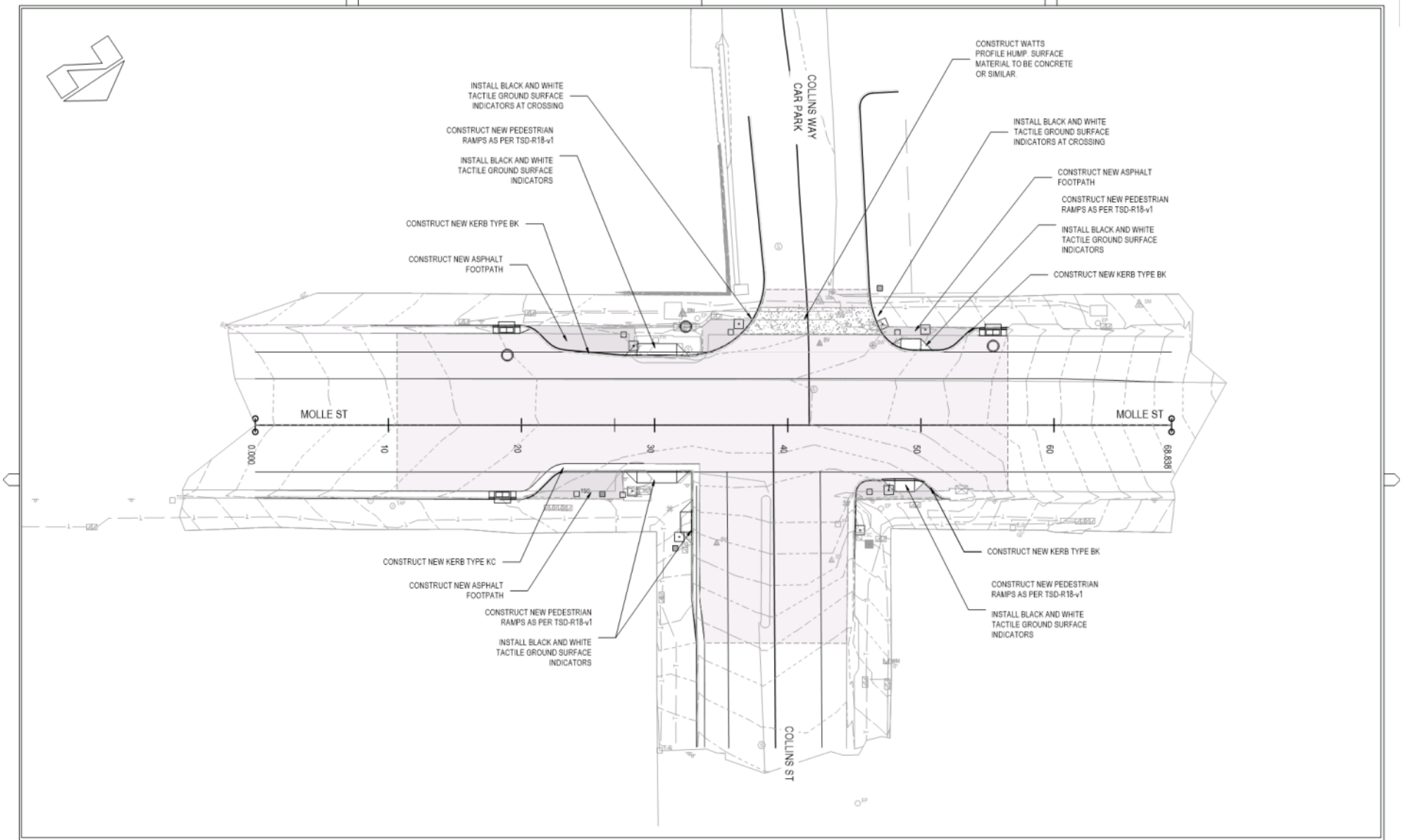

GENERAL ARRANGEMENT - MOLE STREET

Scale 1:250 @ A3

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Client	HOBART CITY COUNCIL
Project	COLLINS STREET AND MOLLE STREET SIGNILISATION
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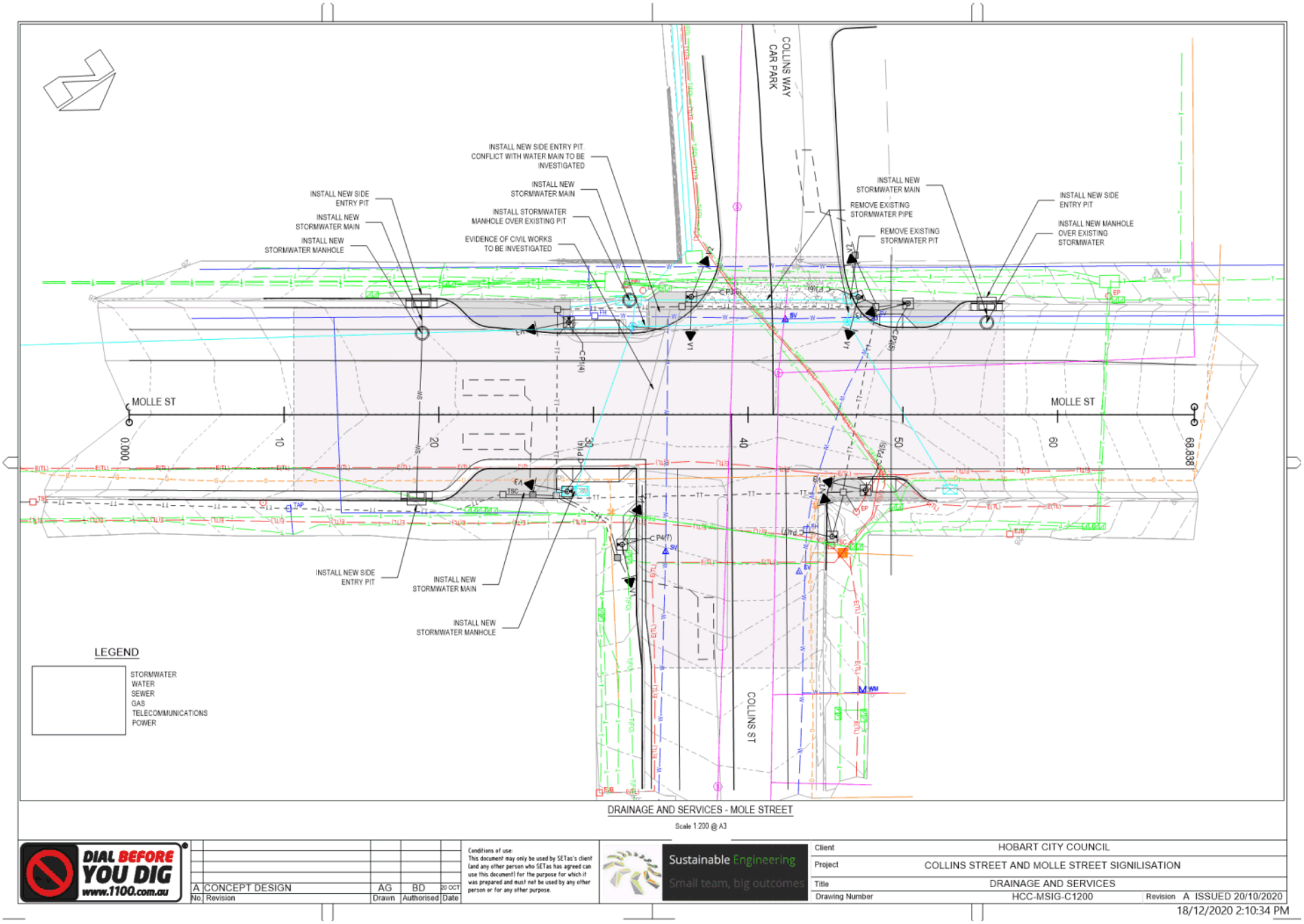

DRAINAGE AND SERVICES - MOLE STREET

Scale 1:200 @ A3

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Project	COLLINS STREET AND MOLLE STREET SIGNILISATION
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Revision	A ISSUED 20/10/2020

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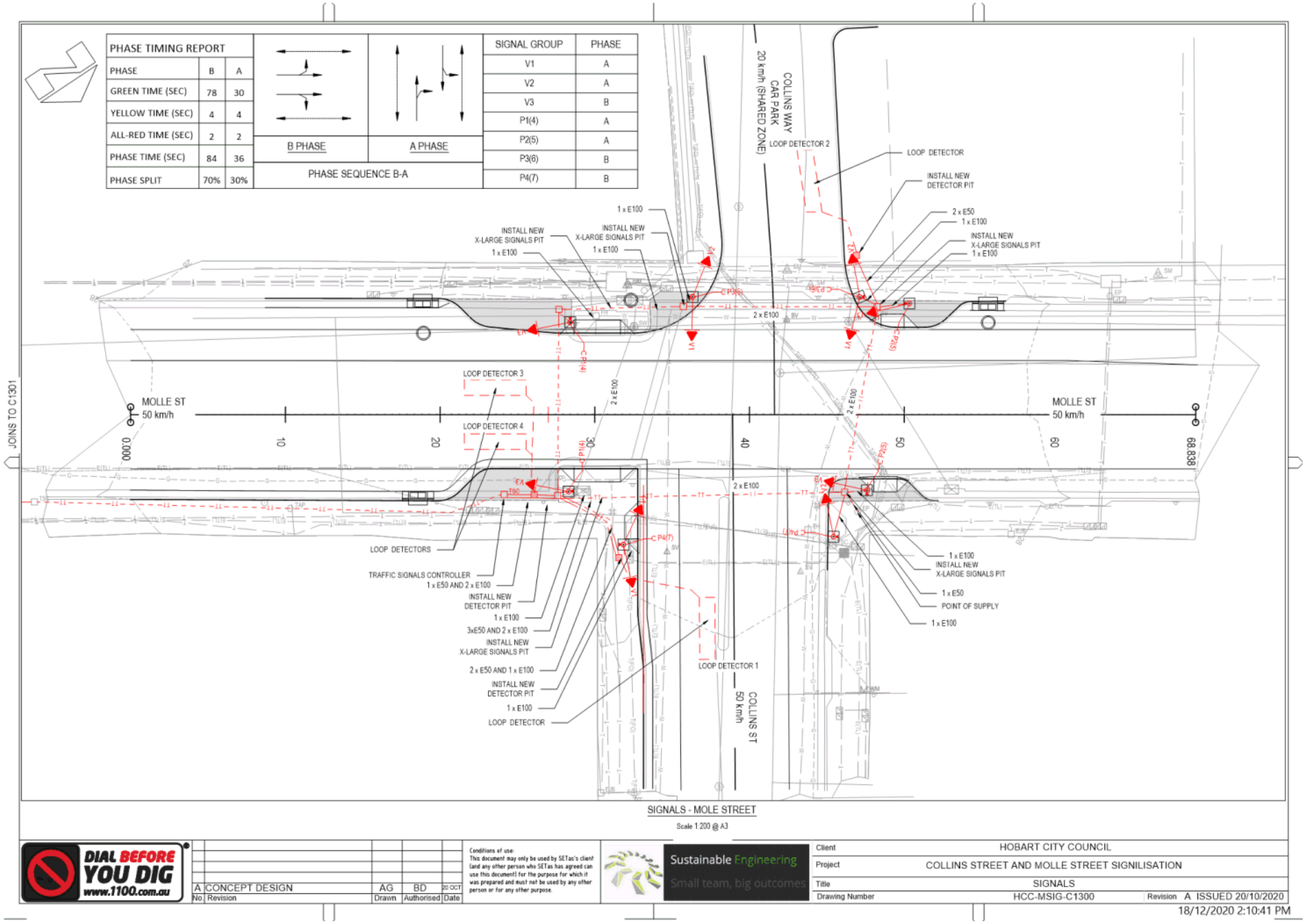
PHASE TIMING REPORT
PHASE | B | A
GREEN TIME (SEC) | 78 | 30
YELLOW TIME (SEC) | 4 | 4
ALL-RED TIME (SEC) | 2 | 2
PHASE TIME (SEC) | 84 | 36
PHASE SPLIT | 70% | 30%
B PHASE
A PHASE
PHASE SEQUENCE B-A
SIGNAL GROUP | PHASE
V1 | A
V2 | A
V3 | B
P1(4) | A
P2(5) | A
P3(6) | B
P4(7) | B
JOINS TO C1301
MOLLE ST
50 km/h
0.000
10
20
30
40
50
60
68.838
COLLINS WAY
CAR PARK
20 km/h (SHARED ZONE)
LOOP DETECTOR 2
LOOP DETECTOR
INSTALL NEW
DETECTOR PIT
2 x E50
1 x E100
INSTALL NEW
X-LARGE SIGNALS PIT
1 x E100
INSTALL NEW
X-LARGE SIGNALS PIT
1 x E100
1 x E100
INSTALL NEW
X-LARGE SIGNALS PIT
1 x E100
2 x E100
LOOP DETECTOR 3
LOOP DETECTOR 4
2 x E100
2 x E100
2 x E100
LOOP DETECTORS
TRAFFIC SIGNALS CONTROLLER
1 x E50 AND 2 x E100
INSTALL NEW
DETECTOR PIT
1 x E100
3xE50 AND 2 x E100
INSTALL NEW
X-LARGE SIGNALS PIT
2 x E50 AND 1 x E100
INSTALL NEW
DETECTOR PIT
1 x E100
LOOP DETECTOR
LOOP DETECTOR 1
COLLINS ST
50 km/h
1 x E100
INSTALL NEW
X-LARGE SIGNALS PIT
1 x E50
POINT OF SUPPLY
1 x E100
SIGNALS - MOLE STREET
Scale 1:200 @ A3
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Project COLLINS STREET AND MOLLE STREET SIGNILISATION
Title SIGNALS
Drawing Number HCC-MSIG-C1300
Revision A ISSUED 20/10/2020
18/12/2020 2:10:41 PM

SERVICES - MOLE STREET

Scale 1:200 @ A3

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Client	HOBART CITY COUNCIL
Project	COLLINS STREET AND MOLLE STREET SIGNILISATION
Title	SIGNALS
Drawing Number	HCC-MSIG-C1301
Revision	A ISSUED 20/10/2020

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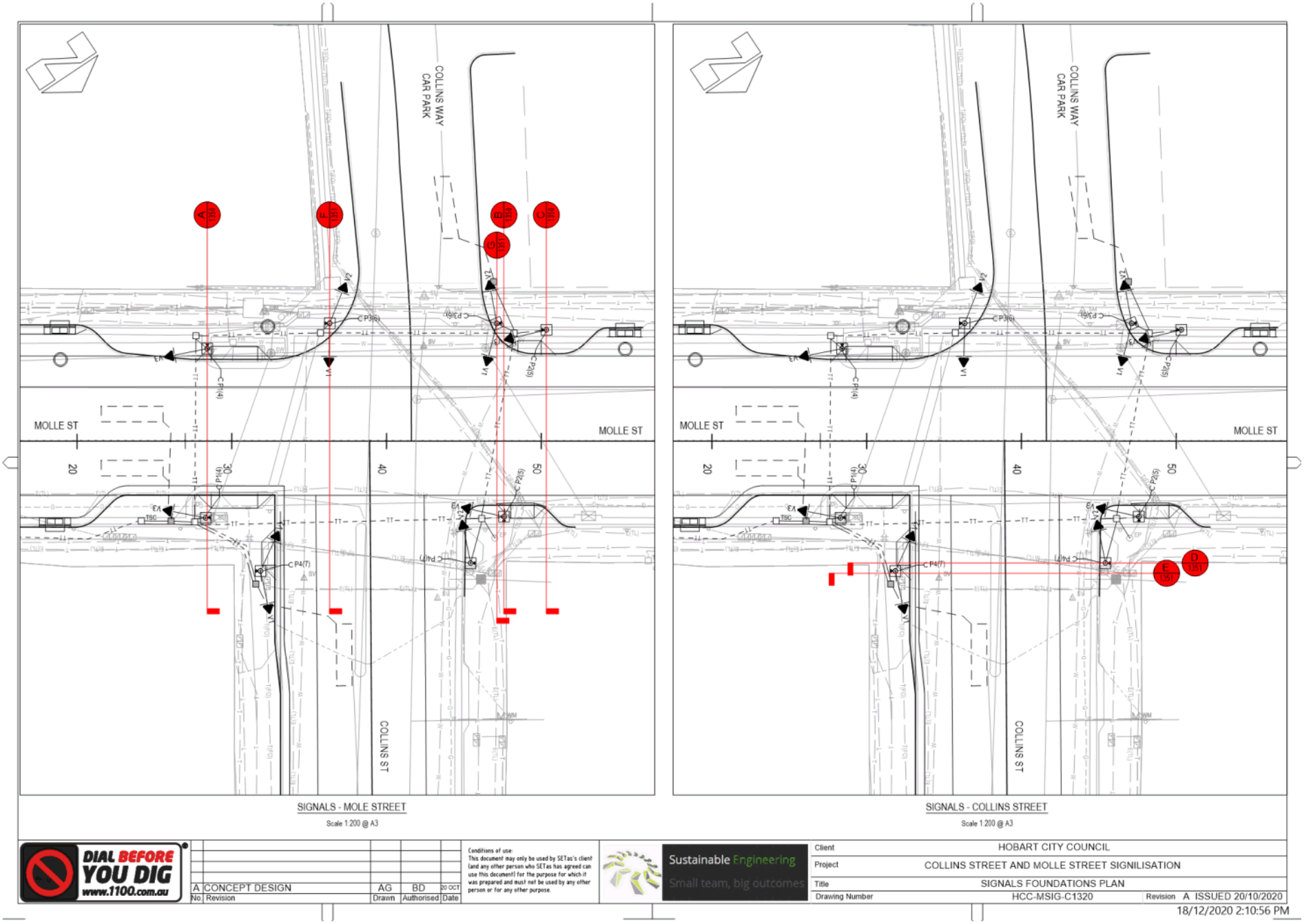
COLLINS WAY CAR PARK
MOLLE ST
MOLLE ST
COLLINS ST
SIGNALS - MOLE STREET
Scale 1:200 @ A3
COLLINS WAY CAR PARK
MOLLE ST
MOLLE ST
COLLINS ST
SIGNALS - COLLINS STREET
Scale 1:200 @ A3
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Project COLLINS STREET AND MOLLE STREET SIGNILISATION
Title SIGNALS FOUNDATIONS PLAN
Drawing Number HCC-MSIG-C1320
Revision A ISSUED 20/10/2020
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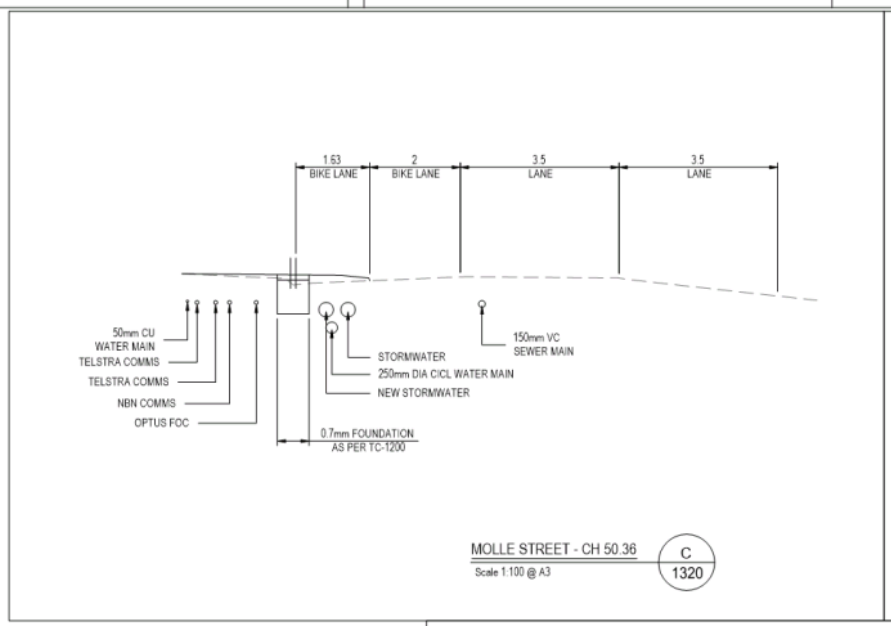

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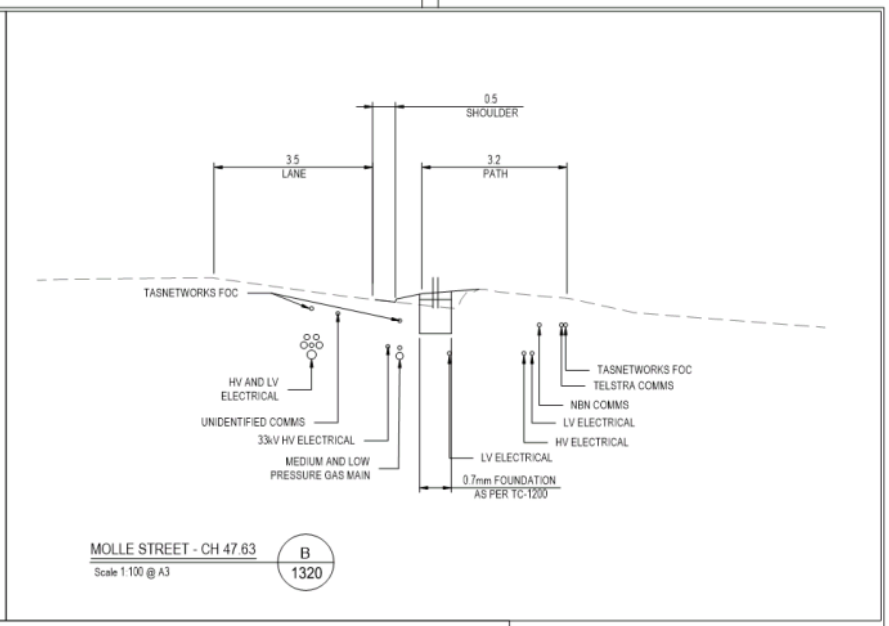

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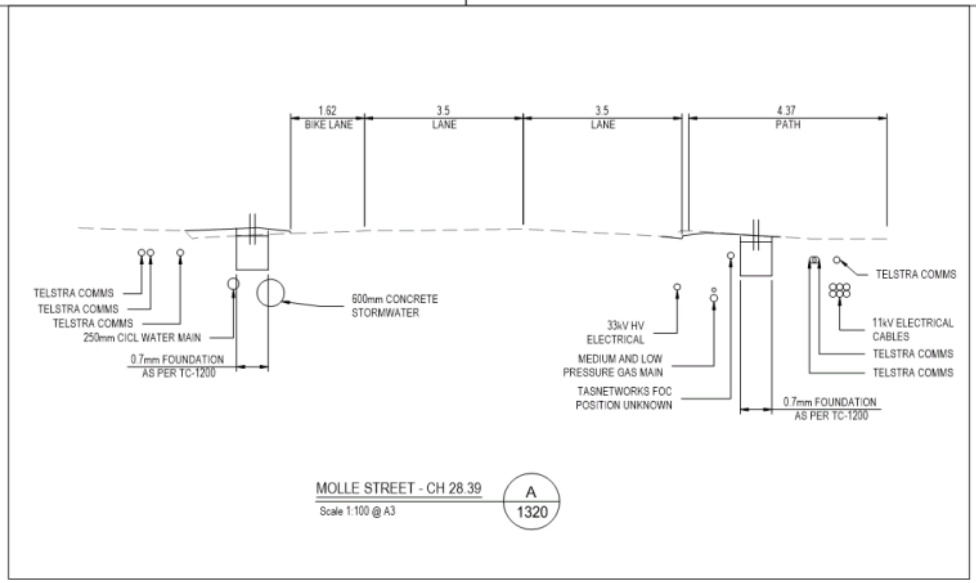

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NOTES

1. LOCATIONS OF ALL SERVICES ARE INDICATIVE ONLY. LOCATION AND DEPTH YET TO BE DETERMINED.

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Project	COLLINS STREET AND MOLLE STREET SIGNILISATION
Title	SIGNALS FOUNDATIONS DWG 1 OF 2
Drawing Number	HCC-MSIG-C1350
Revision	A ISSUED 20/10/2020

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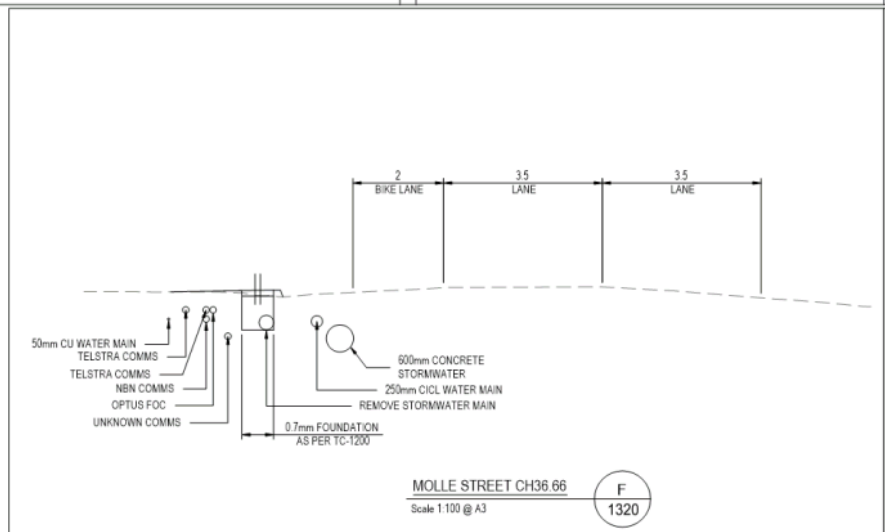

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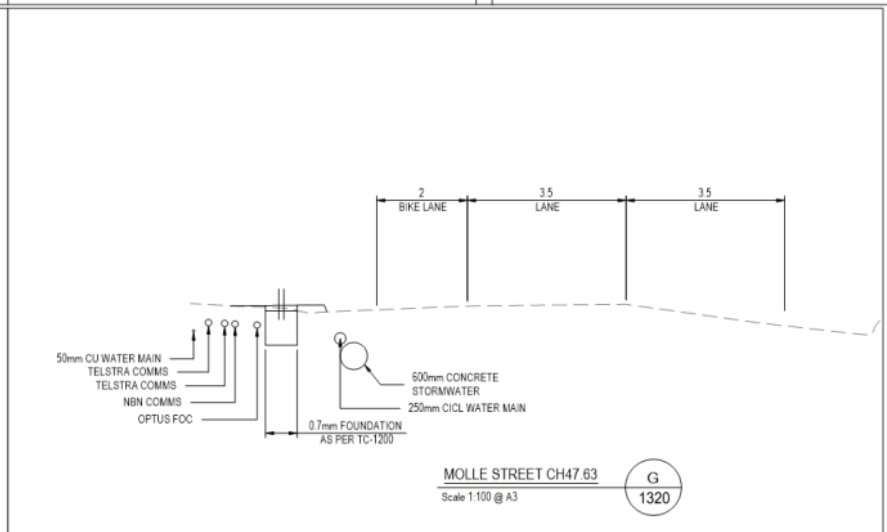

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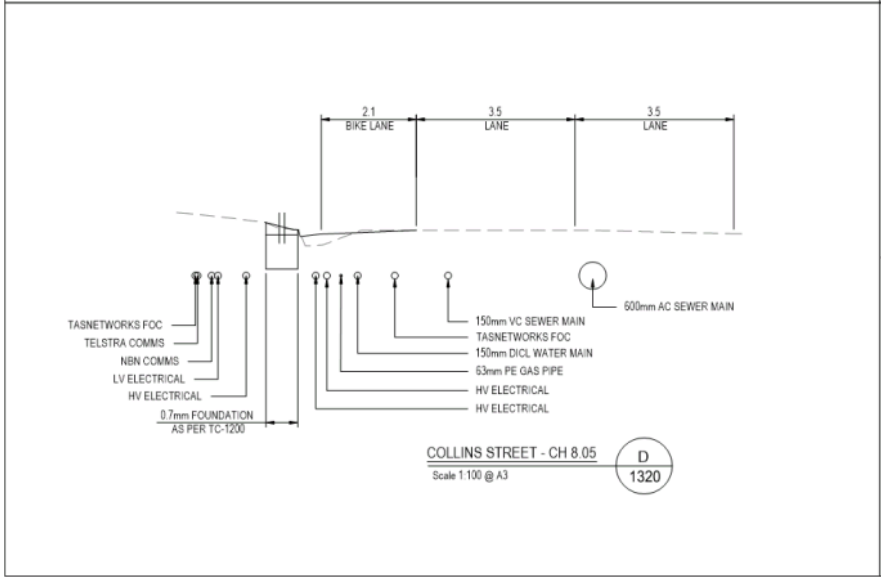

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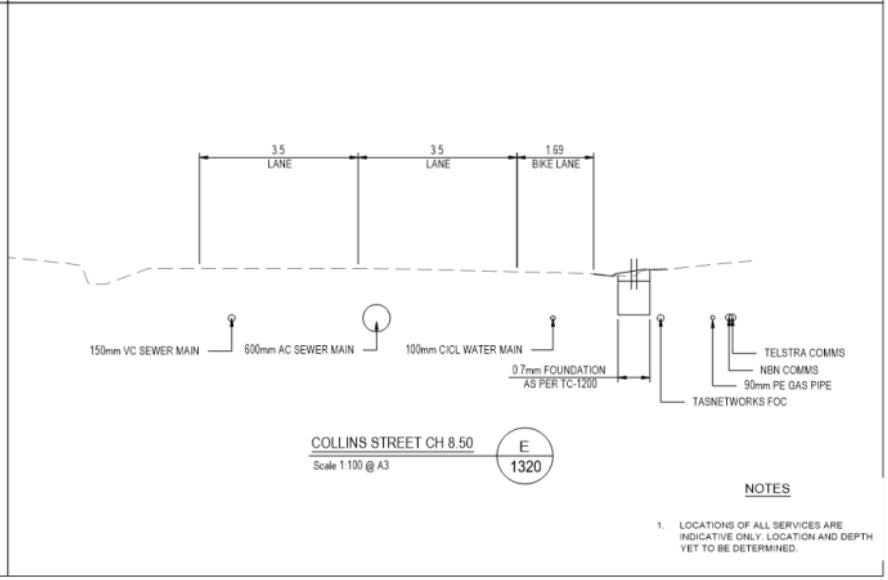

COLLINS STREET CH 8.50 — E — 1320
Scale 1:100 @ A3

NOTES

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Client	HOBART CITY COUNCIL
Project	COLLINS STREET AND MOLLE STREET SIGNILISATION
Title	SIGNALS FOUNDATIONS DWG 2 OF 2
Drawing Number	HCC-MSIG-C1351
Revision	A ISSUED 20/10/2020

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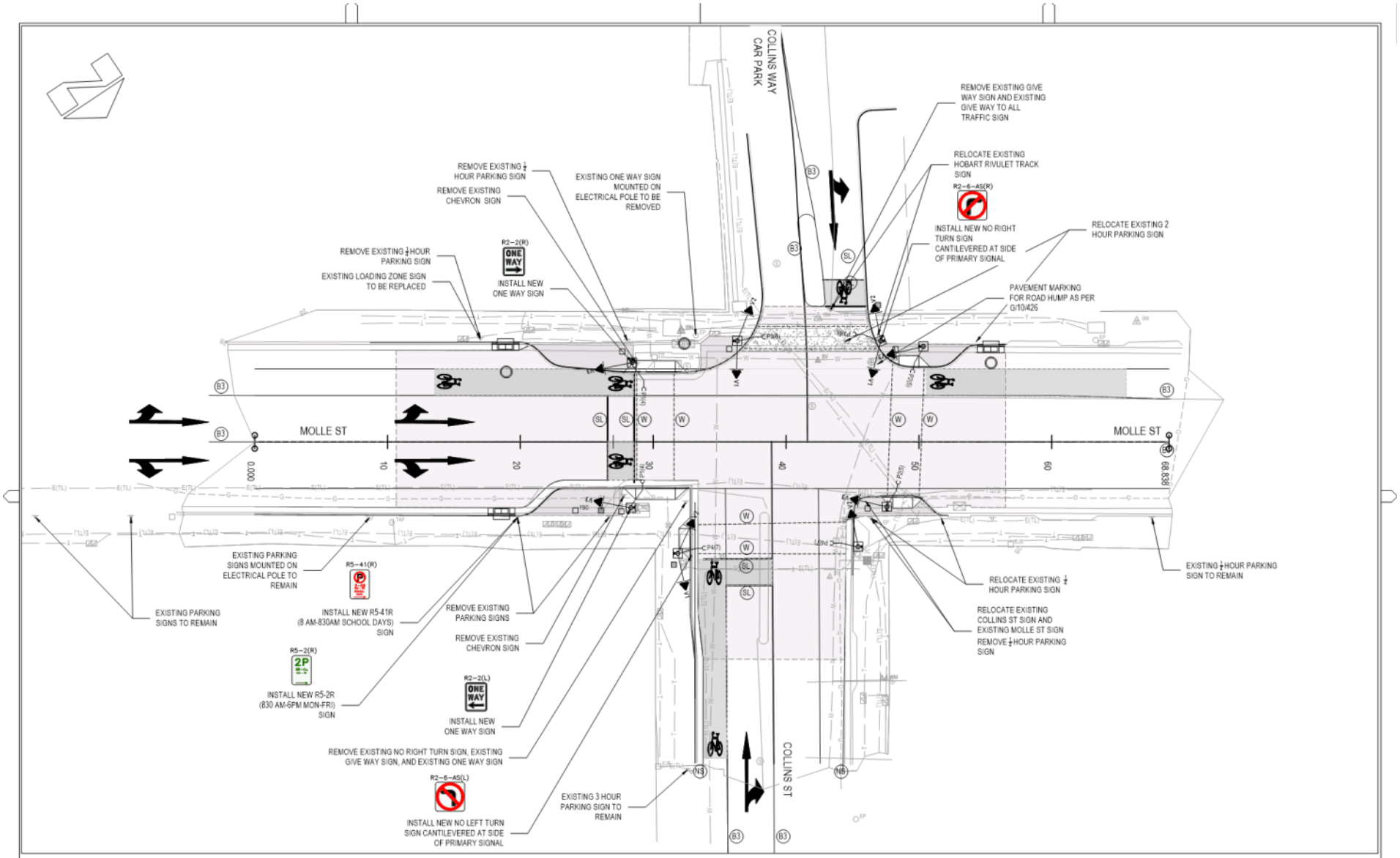

SIGNS AND LINE MARKING - MOLE STREET

Scale 1:250 @ A3

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Project	COLLINS STREET AND MOLLE STREET SIGNILISATION
Title	SIGNS AND LINE MARKING
Drawing Number	HCC-MSIG-C1400
Revision	A ISSUED 20/10/2020

18/12/2020 2:11:26 PM

City of HOBART

Enquiries to: City Planning
Phone: (03) 6238 2715
Email: coh@hobartcity.com.au

18 March 2021

Stuart Baird (City of Hobart)
16 Elizabeth Street
HOBART TAS 7000

mailto: bairds@hobartcity.com.au

Dear Sir/Madam

COLLINS STREET, HOBART & MOLLE STREET, WEST HOBART & ADJACENT ROAD RESERVE
WORKS IN ROAD RESERVE NOTICE OF LAND OWNER CONSENT TO LODGE A PLANNING APPLICATION - GMC-21-21

Site Address:

Molle and Collins Street, Hobart and Adjacent Road Reserve

Description of Proposal:

Installation of traffic signals

Applicant Name:

Stuart Baird, c/o City of Hobart

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.

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 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

(N D Heath)
GENERAL MANAGER

Relevant documents/plans:

Sustainable Engineering Concept Design - HCC-MSIG-C1351

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

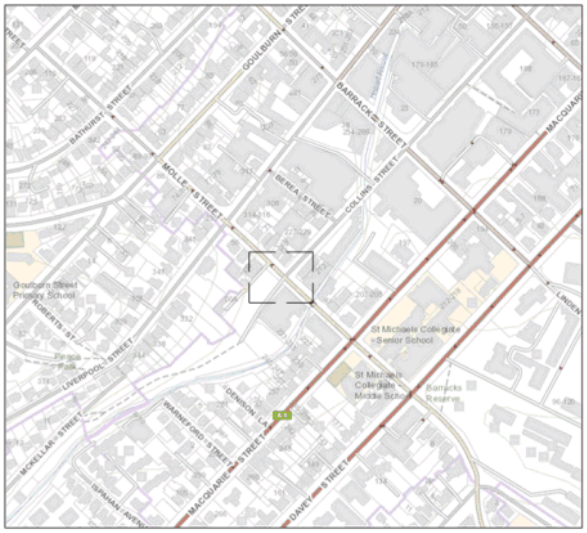
CityofHobartOfficial

ABN 39 055 343 428
Hobart City Council

Approved - General Manager Consent Only
GMC-21-21 18/03/2021

City of HOBART

HOBART CITY COUNCIL
COLLINS STREET AND MOLLE STREET SIGNILISATION



LOCALITY PLAN

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C1010	HCC-MSIG-C1010 - TYPICAL SECTIONS
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C1200	HCC-MSIG-C1200 - DRAINAGE AND SERVICES
C1300	HCC-MSIG-C1300 - SIGNALS
C1301	HCC-MSIG-C1301 - SIGNALS
C1320	HCC-MSIG-C1320 - SIGNALS FOUNDATIONS PLAN
C1350	HCC-MSIG-C1350 - SIGNALS FOUNDATIONS
C1351	HCC-MSIG-C1351 - SIGNALS FOUNDATIONS
C1400	HCC-MSIG-C1400 - SIGNS AND LINE MARKING

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Client	HOBART CITY COUNCIL
Project	COLLINS STREET AND MOLLE STREET SIGNILISATION
Title	COVER PAGE
Drawing Number	HCC-MSIG-C1000
Revision	A ISSUED 20/10/2020

18/12/2020 2:10:13 PM

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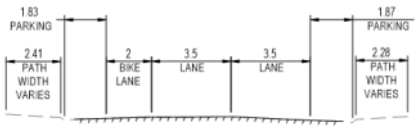
City of HOBART GMC-21-21 18/03/2021



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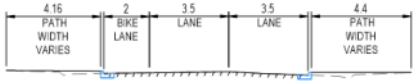

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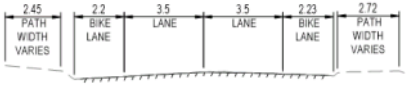

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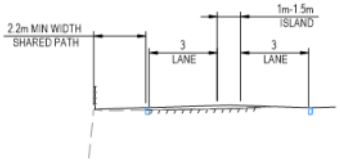

MOLLE LANE CARPARK
Scale 1:200 @ A3

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Project	COLLINS STREET AND MOLLE STREET SIGNILISATION
Title	TYPICAL SECTIONS
Drawing Number	HCC-MSIG-C1010
Revision	A ISSUED 20/10/2020

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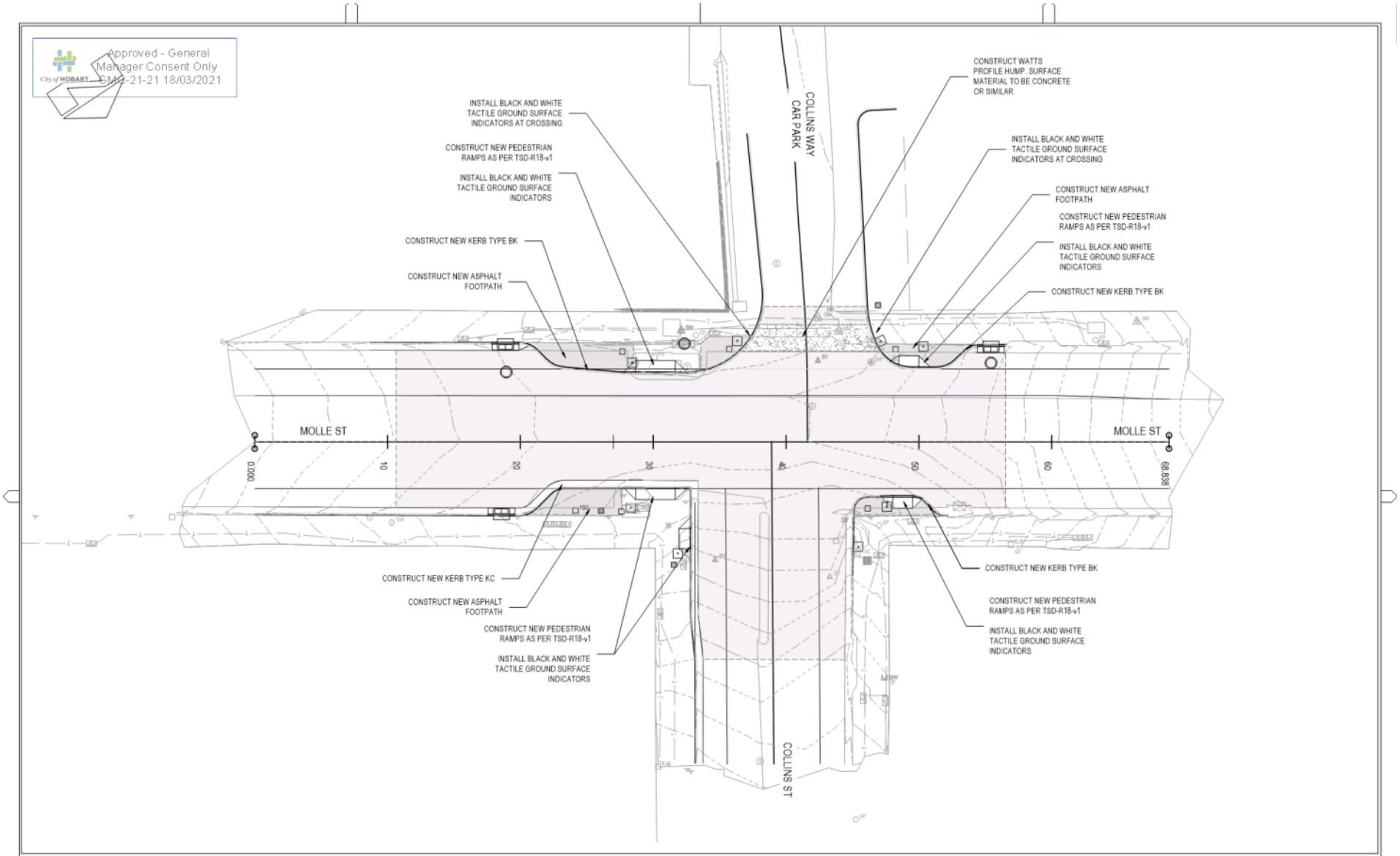

GENERAL ARRANGEMENT - MOLE STREET

Scale 1:250 @ A3

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Project	COLLINS STREET AND MOLLE STREET SIGNILISATION
Title	GENERAL ARRANGEMENT
Drawing Number	HCC-MSIG-C1100
Revision	A ISSUED 20/10/2020

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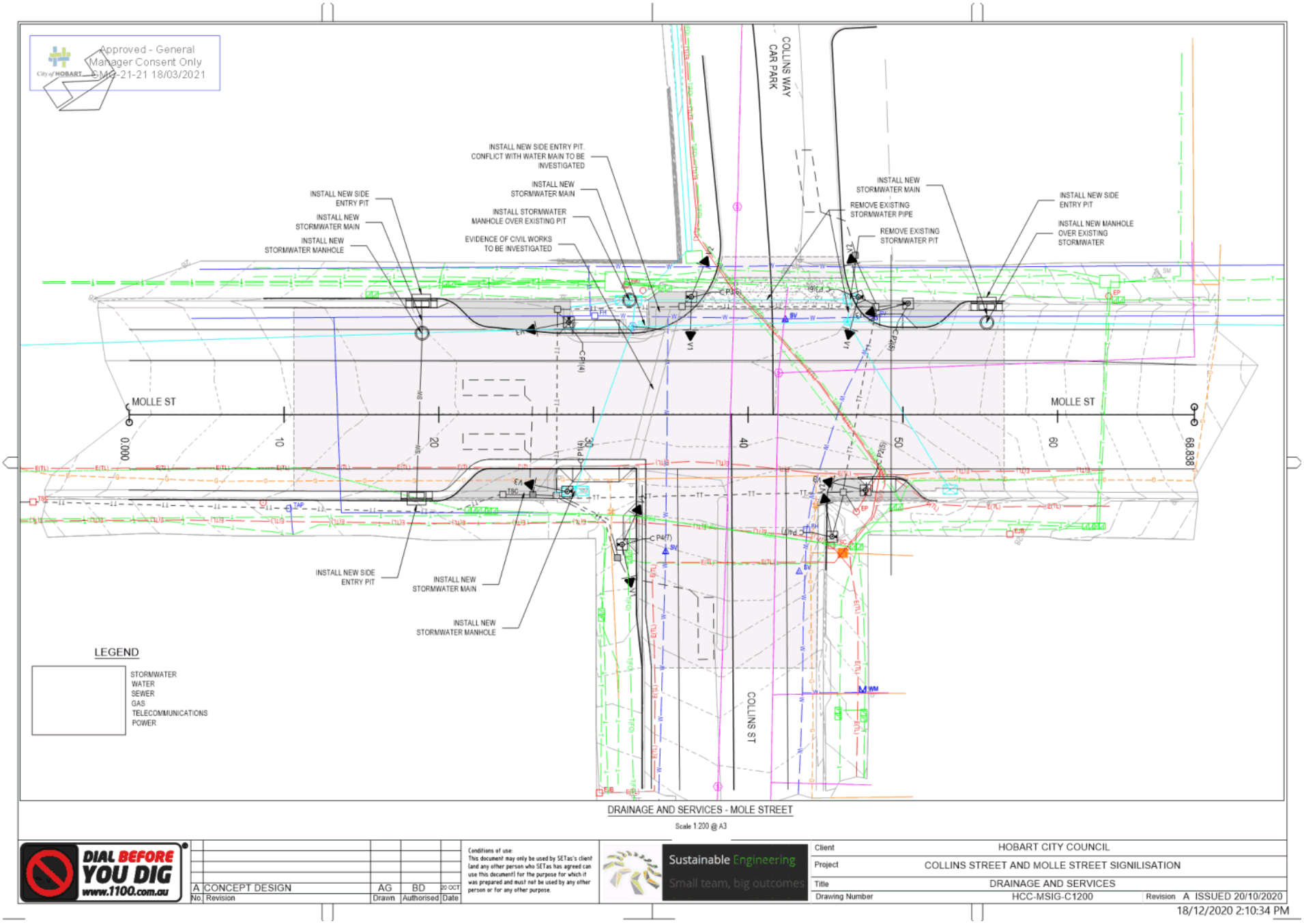

DRAINAGE AND SERVICES - MOLE STREET

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Title	DRAINAGE AND SERVICES
Drawing Number	HCC-MSIG-C1200
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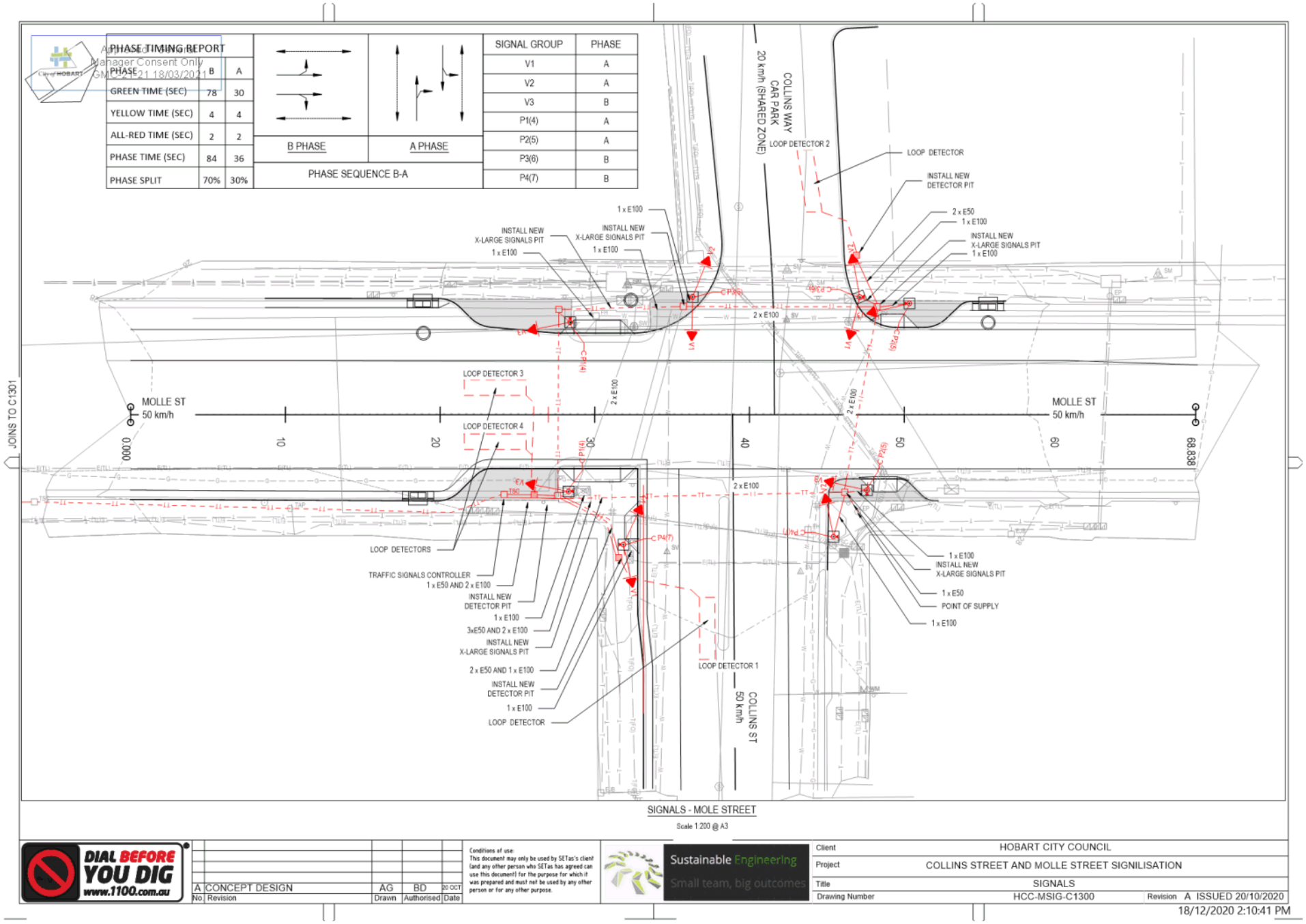
Approved Plan
Manager Consent Only
GMC-21-21 18/03/2021



SIGNALS - MOLE STREET

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Project	COLLINS STREET AND MOLLE STREET SIGNILISATION
Title	SIGNALS
Drawing Number	HCC-MSIG-C1300
Revision	A ISSUED 20/10/2020

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SERVICES - MOLLE STREET

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Drawing Number	HCC-MSIG-C1301
Revision	A ISSUED 20/10/2020

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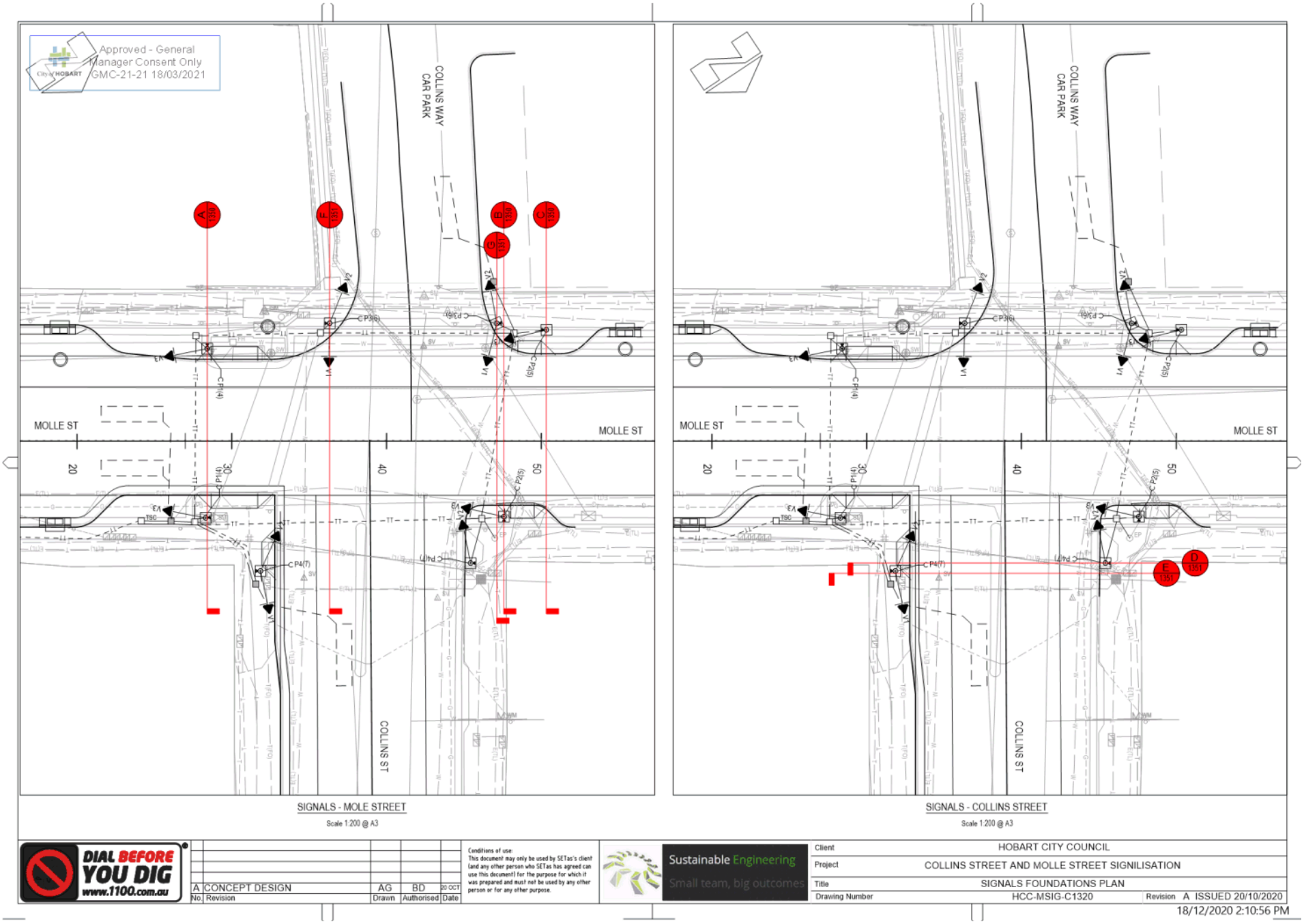
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Project COLLINS STREET AND MOLLE STREET SIGNILISATION
Title SIGNALS FOUNDATIONS PLAN
Drawing Number HCC-MSIG-C1320
Revision A ISSUED 20/10/2020
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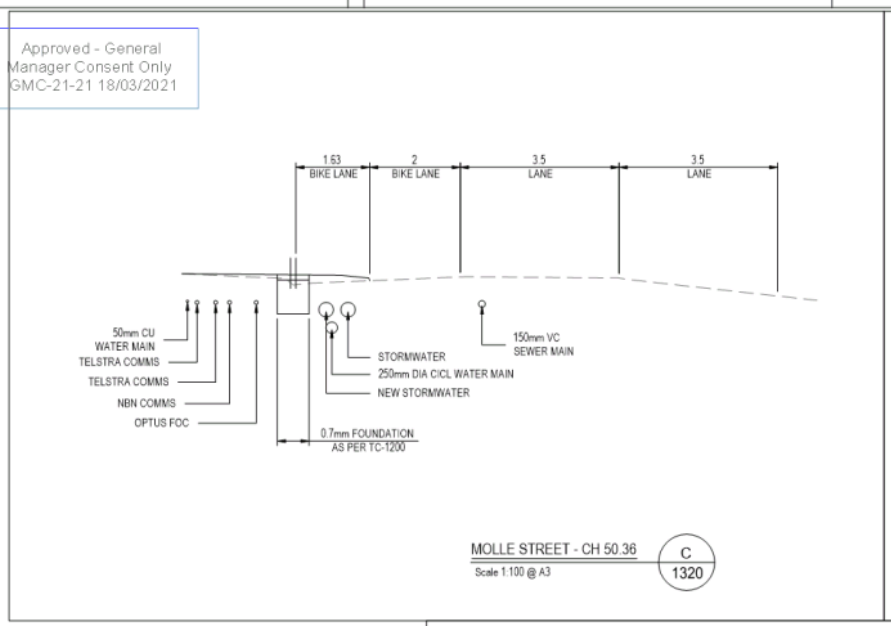

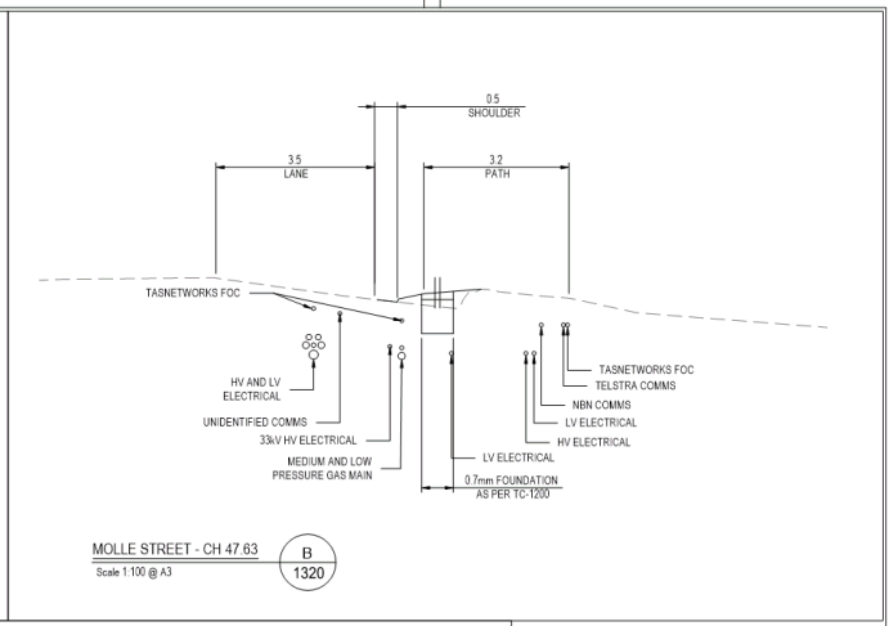

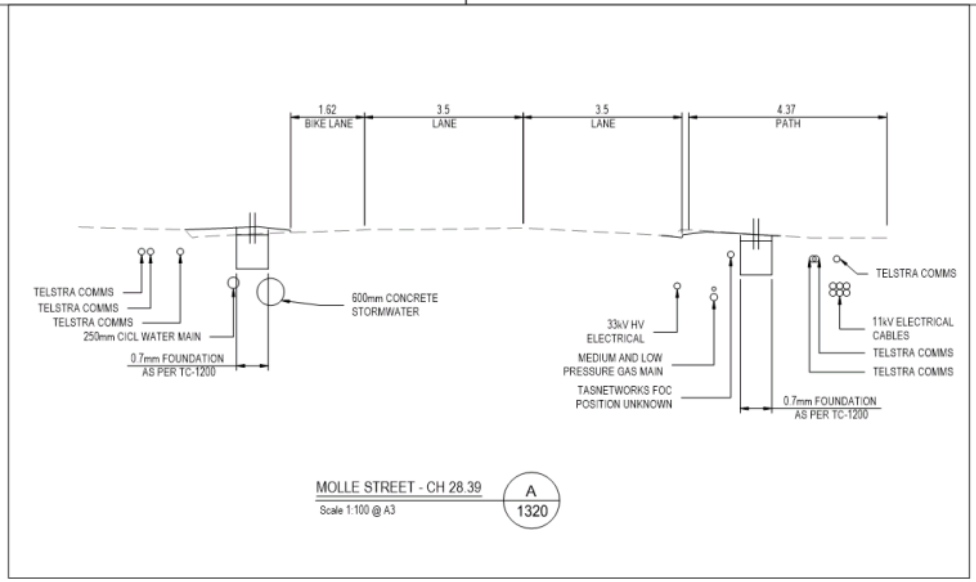

NOTES

1. LOCATIONS OF ALL SERVICES ARE INDICATIVE ONLY. LOCATION AND DEPTH YET TO BE DETERMINED.

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Project	COLLINS STREET AND MOLLE STREET SIGNILISATION
Title	SIGNALS FOUNDATIONS DWG 1 OF 2
Drawing Number	HCC-MSIG-C1350
Revision	A ISSUED 20/10/2020

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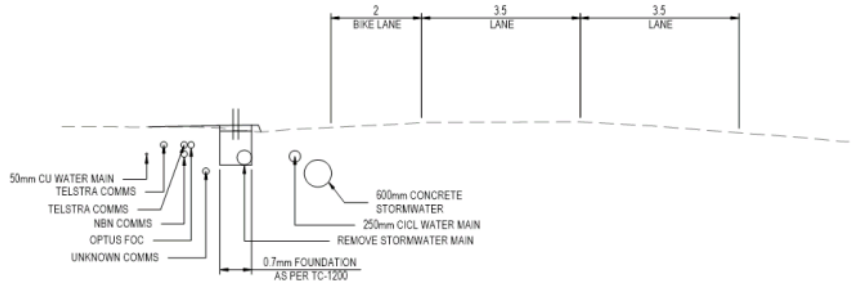

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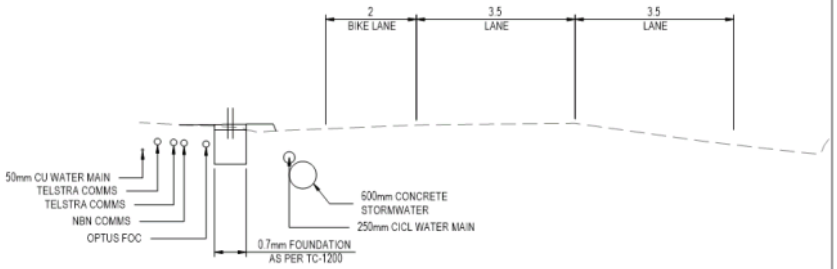

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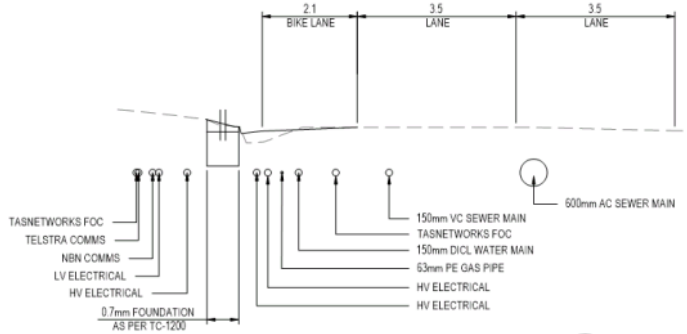

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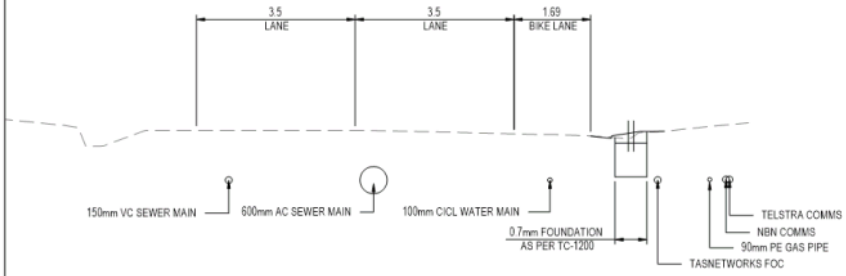

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Scale 1:100 @ A3

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Project	COLLINS STREET AND MOLLE STREET SIGNILISATION
Title	SIGNALS FOUNDATIONS DWG 2 OF 2
Drawing Number	HCC-MSIG-C1351
Revision	A ISSUED 20/10/2020

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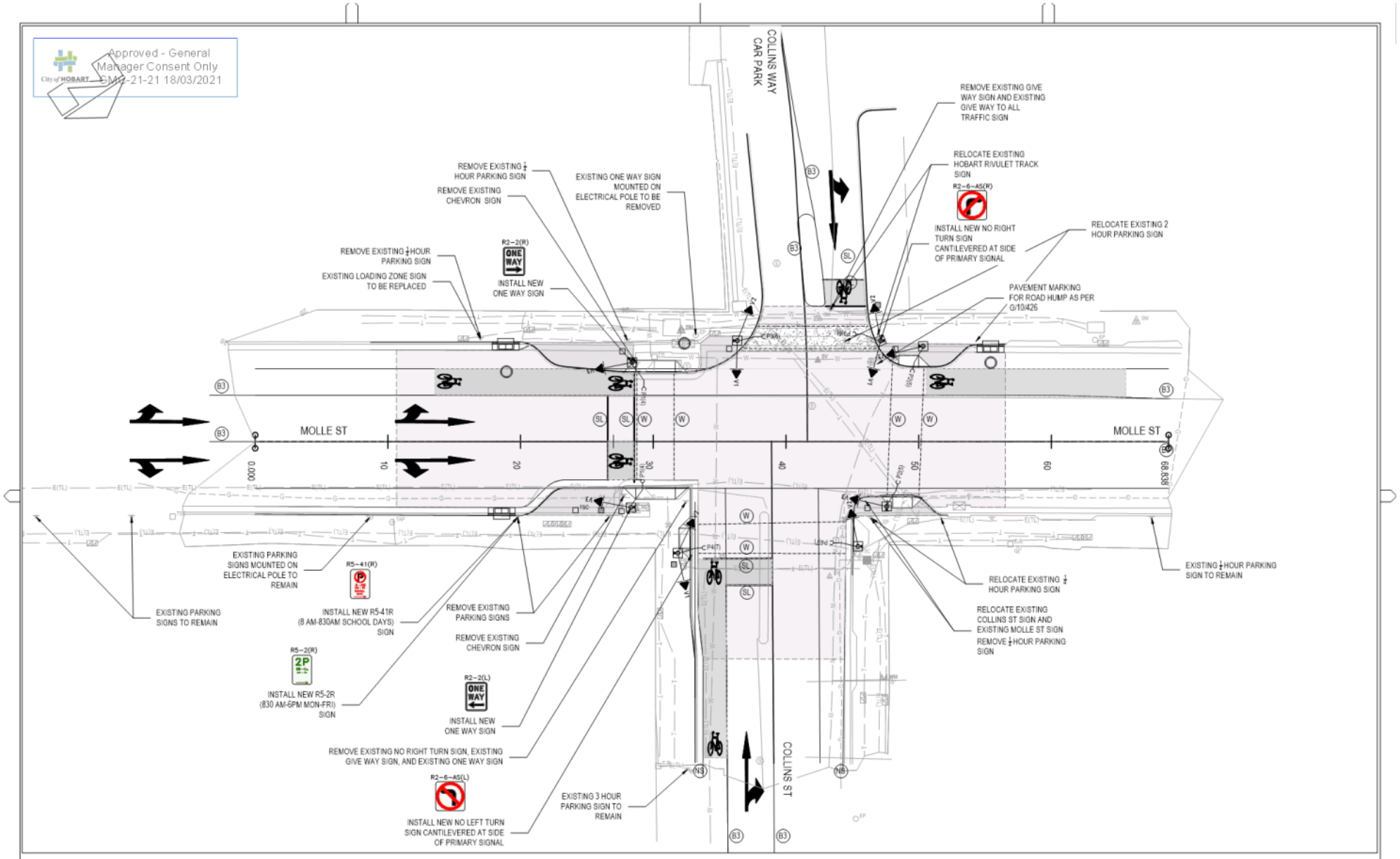

SIGNS AND LINE MARKING - MOLLE STREET

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Title	SIGNS AND LINE MARKING
Drawing Number	HCC-MSIG-C1400
Revision	A ISSUED 20/10/2020

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REPORT TITLE: **INSTALLATION OF TRAFFIC SIGNALS - INTERSECTION OF COLLINS STREET AND MOLLE STREET**

REPORT PROVIDED BY: Manager Traffic Engineering
Director City Planning

1. Report Purpose and Community Benefit

1.1. The purpose of this report is to advise the committee that a preferred concept for the treatment of the intersection of Collins Street and Molle Street has been identified.

1.2. Installing traffic signals at the intersection of Collins Street and Molle Street, would benefit the community by improving the safety and amenity for pedestrians and cyclists seeking to cross Molle Street.

2. Report Summary

2.1. A concept design for the installation of traffic signals at the intersection of Collins Street and Molle Street has been developed.

2.2. The investigation of the installation of traffic signals for the intersection of Collins Street / Molle Street is identified as an action for 2019-2020 in the City of Hobart Annual Plan. This is derived from a clear strategic focus placed on improving facilities for people walking and cycling along the Collins Street corridor to better link the Hobart Rivulet Park to the CBD in a number of strategic documents, including:

2.2.1. The Principal Bicycle Network Plan - City of Hobart – 2008;

2.2.2. The Hobart Rivulet Park Strategic Master Plan – City of Hobart – 2011;

2.2.3. The Inner City Action Plan – City of Hobart – 2012;

2.2.4. The Capital City Strategic Plan – City of Hobart – 2015.

2.3. The preferred concept design includes the installation of traffic signals at the intersection and incorporating the shared driveway to the adjacent property at 40-50 Molle Street, which is used by pedestrians and cyclists moving between the Collins Street corridor and the Hobart Rivulet Park via a right of way.

2.4. The preferred concept design, is supported by officers of the Department of State Growth (who would ultimately need to take over the operation of traffic signals installed at the site), and the landowner at 40-50 Molle Street, a portion of who's land would be required to be utilised to facilitate the traffic signals.

2.5. It is proposed that a detailed design for the signalisation be developed and implemented in the 2020-2021 financial year, utilising the existing $500,000 currently budgeted for the project in the 2019-2020 financial year.

2.6. Officers will also submit the project for the Australian Government Black Spot program for potential part funding in the 2020-2021 financial year.

3. Recommendation

That:

1. The installation of traffic signals at the intersection of Molle Street and Collins Street to improve the safety and amenity of pedestrians and cyclists be supported.

2. The General Manager be authorised to negotiate with the landowner of 40-50 Molle Street for the incorporation of the existing driveway and associated 'right of way' utilised by pedestrians and cyclists into the proposed traffic signals, including the transfer of any land necessary to facilitate that installation.

4. Background

4.1. The intersection of Collins Street and Molle Street provides a key link in the City of Hobart's pedestrian network, and currently acts as a constraint on the City of Hobart's future bicycle network.

4.2. The Hobart Rivulet Park is used by a large number of pedestrians and cyclists moving between South Hobart and the Hobart CBD via Collins Street.

4.3. When moving between the end of the Hobart Rivulet Park and Molle Street, pedestrians and cyclists travel across privately owned land at 40-50 Collins Street, via a right-of-way through the sites car park. The owner of the site has developed a plan for marking this pedestrian and cyclist path in consultation with Council officers, and this plan will be implemented by the owner in the coming months. A copy of the concept is provided below.

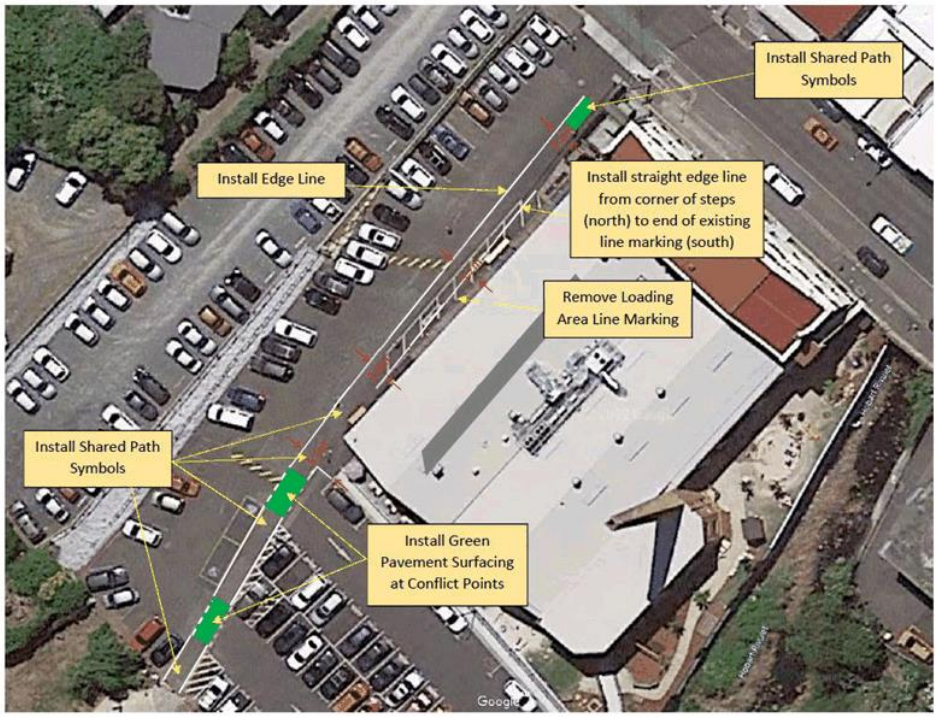


Figure 1 – Extract – Midson Traffic Concept Plan – 40-50 Molle Street

4.4. At Molle Street, pedestrians moving between the Collins Street corridor and the Hobart Rivulet Park must cross two general traffic lanes without any priority. People wanting to cross Molle Street (either walking or cycling) must wait for and judge a suitable gap in the busy and relatively quick moving traffic. This feels uncomfortable and unsafe to many people.

4.5. A review of the intersection has been undertaken and a number of improvement options have been identified. That review is included as **Attachment A** to this report.

4.6. The most suitable option is considered to be to install traffic signals at the intersection, including signal control of the driveway to 40-50 Molle Street.

4.7. A further report will be provided in late 2019 outlining options for the potential treatment of Collins Street between the Molle Street intersection and the CBD.

5. Proposal and Implementation

5.1. The proposal is to install traffic signals at the intersection of Molle Street and Collins Street, including signal control of the driveway to 40-50 Molle Street (as shown in **Attachment B**).

5.2. It is proposed that the proposed traffic signals proceed to detailed design stage, and be constructed in the 2020-2021 financial year.

6. Strategic Planning and Policy Considerations

6.1. The investigation of the installation of traffic signals for the intersection of Collins Street / Molle Street is identified as an action in the City of Hobart Annual Plan 2019-20. This is derived from a clear strategic focus placed on improving facilities for people walking and cycling along the Collins Street corridor to better link the Hobart Rivulet Park to the Hobart CBD. This is referenced in a number of strategic documents, including:

6.1.1. The Principal Bicycle Network Plan (2008);

6.1.2. The Hobart Rivulet Park Strategic Master Plan (2011);

6.1.3. The Inner City Action Plan (2012);

6.1.4. The Capital City Strategic Plan (2015-2025).

7. Financial Implications

7.1. Funding Source and Impact on Current Year Operating Result

7.1.1. The estimated cost of the basic traffic signal installation (which includes the signalisation of the shared driveway to 40-50 Molle Street) is $450,000.

7.1.2. The ongoing maintenance cost of the traffic signals at the site would be borne by the Department of State Growth, who would be responsible for operating the traffic signals.

7.1.3. The proposal will not require the removal or alteration of any metered parking spaces.

7.1.4. The City of Hobart has funding of $500,000 available for the installation of traffic signals at the intersection of Molle Street / Collins Street in the current (2019-2020) financial year.

7.1.5. With the current design and construction workload, it is not considered feasible for construction to occur in the 2019-2020 financial year. Construction is programmed to commence in late 2020 (in the 2020-2021 financial year).

7.1.6. It is also proposed that the project nominated for partial funding under the Australian Government Funded Black Spot program (for the 2020-2021 financial year).

7.2. Impact on Future Years' Financial Result

7.2.1. Nil.

7.3. Asset Related Implications

7.3.1. Nil.

8. Legal, Risk and Legislative Considerations

8.1. Final approval of the traffic signals is the responsibility of the Transport Commissioner, within the Department of State Growth. Advice from officers at the Department of State Growth is that the proposed installation of traffic signals (including signal control of the shared driveway to 40-50 Molle Street) is the option that they would be able to support.

9. Delegation

9.1. This matter is delegated to the Council.

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.

Angela Moore
MANAGER TRAFFIC ENGINEERING

Neil Noye
DIRECTOR CITY PLANNING

Date: 16 August 2019
File Reference: F19/108370; R0404

Attachment A: Review - Collins Street at Molle Street - Pedestrian and Cyclist Connection Upgrade - August 2019 ⇩

Attachment B: Proposed Plan - Option 3 - Signalisation - Collins Street at Molle Street ⇩

City of HOBART

Review
Collins Street at Molle Street
Upgraded Connection for Pedestrians and Cyclists
August 2019

Version 1.02 – 12 August 2019

Author: Owen Gervasoni
Position: Senior Engineer – Roads & Traffic

Contents

1. Introduction

This review discusses the intersection of Molle Street and Collins Street in South Hobart.

The intersection is a key part of the identified walking and cycling corridor along Collins Street between the Hobart Rivulet Shared Path and the Hobart Central Business District (CBD).

This report identifies installing traffic signals is the most appropriate means of upgrading the intersection.

A series of recommendations are made for actions to progress this upgrading.

2. Existing Conditions

Collins Street is a local highway under the management of the City of Hobart, running approximately east-west between Molle Street and the Brooker Avenue through the Hobart CBD.

Molle Street is a local highway under the management of the City of Hobart that runs approximately south to north between Davey Street and Melville Street. In the vicinity of Collins Street, Molle Street acts as the primary route for general traffic travelling north past the western side of the Hobart CBD.

Figure 2.1 (below), shows the context of the site.

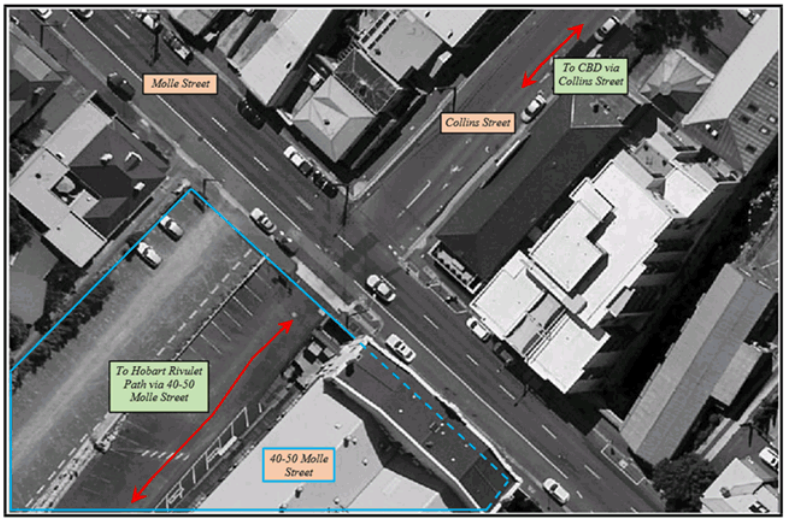


Figure 2.1 – Collins Street / Molle Street Intersection Site Context

The City of Hobart has previously identified Collins Street as a key link in its walking and cycling network. This is in large part due to its direct connection between the Hobart CBD and the Hobart Rivulet Park, via the privately owned property at 40-50 Molle Street (through which a right of way allows public access).

This report focuses on the intersection of Molle Street and Collins Street, which is seen to be a barrier to people walking and cycling on this route.

A further review of option for the potential upgrading of Collins Street (between Molle Street and the CBD) to improve its pedestrian and cycling functionality will be provided later in 2019.

Figures 2.2 to 2.8 show the context of the existing intersection.

Figure 2.2 – Molle Street looking north towards Collins Street

Figure 2.3 – Collins Street looking west towards Molle Street

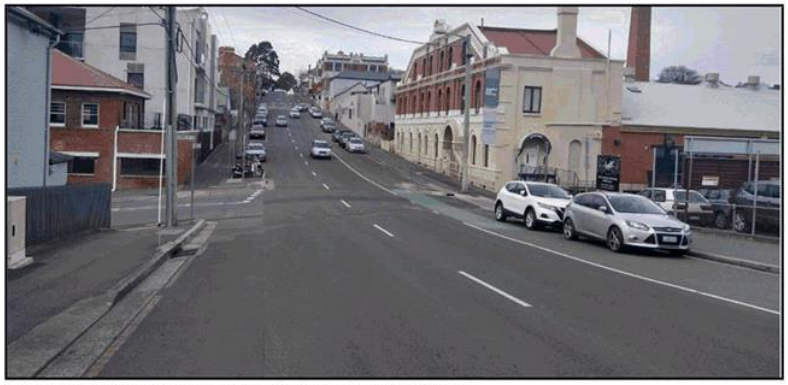


Figure 2.4 – Molle Street looking south towards Collins Street

Figure 2.5 – 40-50 Molle Street looking east towards Molle Street

Figure 2.6 –View from footpath on west side of Molle Street looking for gap in Molle Street traffic

Figure 2.7 –View from footpath on east side of Molle Street looking for gap in Molle Street traffic

3. Current Strategic Planning Framework and Documents

A number of current planning documents prepared for the City of Hobart have focused on the use of the Collins Street corridor by people walking and cycling, primarily due to its clear geographical link between the core of the Hobart CBD and the Hobart Rivulet Park.

3.1 HOBART CITY COUNCIL – PRINCIPAL BICYCLE NETWORK PLAN – 2008

The Principal Bicycle Network Plan, adopted by the City of Hobart in 2008, identified a desirable network of cycling routes that are being incrementally installed over the period since the adoption of the plan.

In the plan, Collins Street between Molle Street and Argyle Street is identified as a future proposed on-road route.

A copy of the Principle Bicycle Network Plan is reproduced as Figure 3.1.

3.2 HOBART RIVULET PARK – STRATEGIC MASTER PLAN – 2011

The Hobart Rivulet Park Strategic Master Plan (HRPSMP) was developed:

> *"to guide the future development and management of the parkland and open space along the rivulet. The project considers the entirety of the rivulet but focuses primarily on the section of the Hobart Rivulet Park between Molle Street to the Wellington Park boundary. It also considers the links in open space and use to surrounding areas such as the city centre area, Knocklofty and West Hobart."*

Collins Street, while outside the direct scope of the HRPSMP, is identified in the following actions:

> *Strategy 1.1. Develop a continuous open space corridor and shared trail along the Hobart Rivulet Park, between the Hobart CBD and Wellington Park – 'a city to the mountain' experience.*
>
> > *Action 1.1.1 (Moderate Priority) Enhance Collins Street for bicycle and pedestrian priority.*
>
> *Strategy 1.4. Actively manage road crossing points.*
>
> > *Action 1.4.1 (High Priority) Review the safety of pedestrian and cyclist crossing on Molle Street given expressed community concerns about public safety and traffic speeds.*
>
> *Strategy 1.6. Improve connectivity between the Hobart Rivulet Park and surrounding community services, facilities, amenities and residential areas.*
>
> > *Action 1.6.1 (High Priority) Improve the connectivity between the CBD, Queens Domain, Sullivans Cove and the Molle Street entrance to Hobart Rivulet Park including improved visual treatment and directional signage consistent with the recommendations in the City Plan (Gehl 2010).*
>
> *Strategy 1.7. Improve opportunities for passive recreation, including picnicking, barbeques, community gathering and events, and relaxation.*
>
> > *Action 1.7.1 (Low Priority) Implementation of the concept plans for key open space nodes along Hobart Rivulet Park….entry off Molle Street (Concept Plan 1).*

Concept Plan 1 from the HRPSMP is replicated as Figure 3.2.

3.3 INNER CITY ACTION PLAN (ICAP) –2012

The Inner City Action Plan (ICAP) contains a selection of key recommendations from the Gehl Architects Report, *'Hobart 2010 Public Spaces and Public Life – a city with people in mind'*, and identifies 15 priority projects for the City of Hobart.

One of the 15 priority projects is directly relevant:

AP04 – Linking the Hobart Rivulet Park along Collins Street to the City.

This project was identified to:

> *"Provide a suitable cycle and pedestrian link from the Hobart Rivulet Park, at Molle Street along Collins Street to Victoria Street."*

The recommended actions specific to the intersection of Collins Street and Molle Street in the ICAP are:

Action AP04.01 - Prepare a design to use much of the eastern side of Collins Street between the Hobart Rivulet Park and Victoria Street to provide improved pedestrian and cyclist access.

Action AP04.05 - Prepare a design to upgrade the intersection of Collins Street with Molle Street to ensure safe crossing places for people using the Hbart Rivulet Park to access the City. Carefully assess the requirements of pedestrians, cyclists and motorists to give equity to all users.

The concept plan from the ICAP is replicated as Figure 3.3.

3.4 CAPITAL CITY STRATEGIC PLAN 2015-2025

The City of Hobart 10-year Capital City Strategic Plan underpins the cities strategic planning framework and its purpose is to identify the community's main priorities and aspirations for the future and to plan strategies to achieve them.

The current project is most relevant to Goal 2 – Urban Management, which includes the following strategic objectives of particular note:

Strategic Objective 2.1 – A fully accessible and connected city environment;

The specific objectives relative to the intersection of Collins Street and Molle Street in the Strategic Plan are:

Objective 2.1.3 Identify and implement infrastructure improvements to enhance road safety.

Objective 2.1.6 Implement the Principal Bicycle Network.

3.5 CITY OF HOBART ANNUAL PLAN 2019-2020

The annual plan sets out the major actions and initiatives for the City of Hobart in the 2019-20 financial year. It comprises actions and initiatives that are aimed at addressing the various strategy references in the Capital City Strategic Plan 2015–25.

Three major actions and initiatives that relate to the current project are described for the 209/2020 financial year.

Strategy Reference: 2.1.2, 2.1.3, 2.1.6, 2.3.3:

"*Prepare the concept design for new traffic signals at the Collins and Molle Street intersection to improve safety for cyclists and pedestrians.*"

Strategy Reference: 2.1.6, 2.2.5, 2.3.3:

"*Finalise the concept design for improved bicycle connections along Collins Street.*"

Strategy Reference: 2.3.3:

> "*Review the status of Inner City Action Plan (ICAP) projects in the context of a Central Hobart Precinct Plan.*"

3.6 SUMMARY OF STRATEGIC PLANNING FRAMEWORK

The investigation of the installation of traffic signals for the intersection of Collins Street / Molle Street is identified as an action in the City of Hobart Annual Plan 2019-20. This is derived from a clear strategic focus placed on improving facilities for people walking and cycling along the Collins Street corridor to better link the Hobart Rivulet Park to the CBD. This is referenced in a number of strategic documents, including:

- The Principal Bicycle Network Plan - City of Hobart – 2008;
- The Hobart Rivulet Park Strategic Master Plan – City of Hobart – 2011;
- The Inner City Action Plan – City of Hobart – 2012;
- The Capital City Strategic Plan – City of Hobart – 2015.

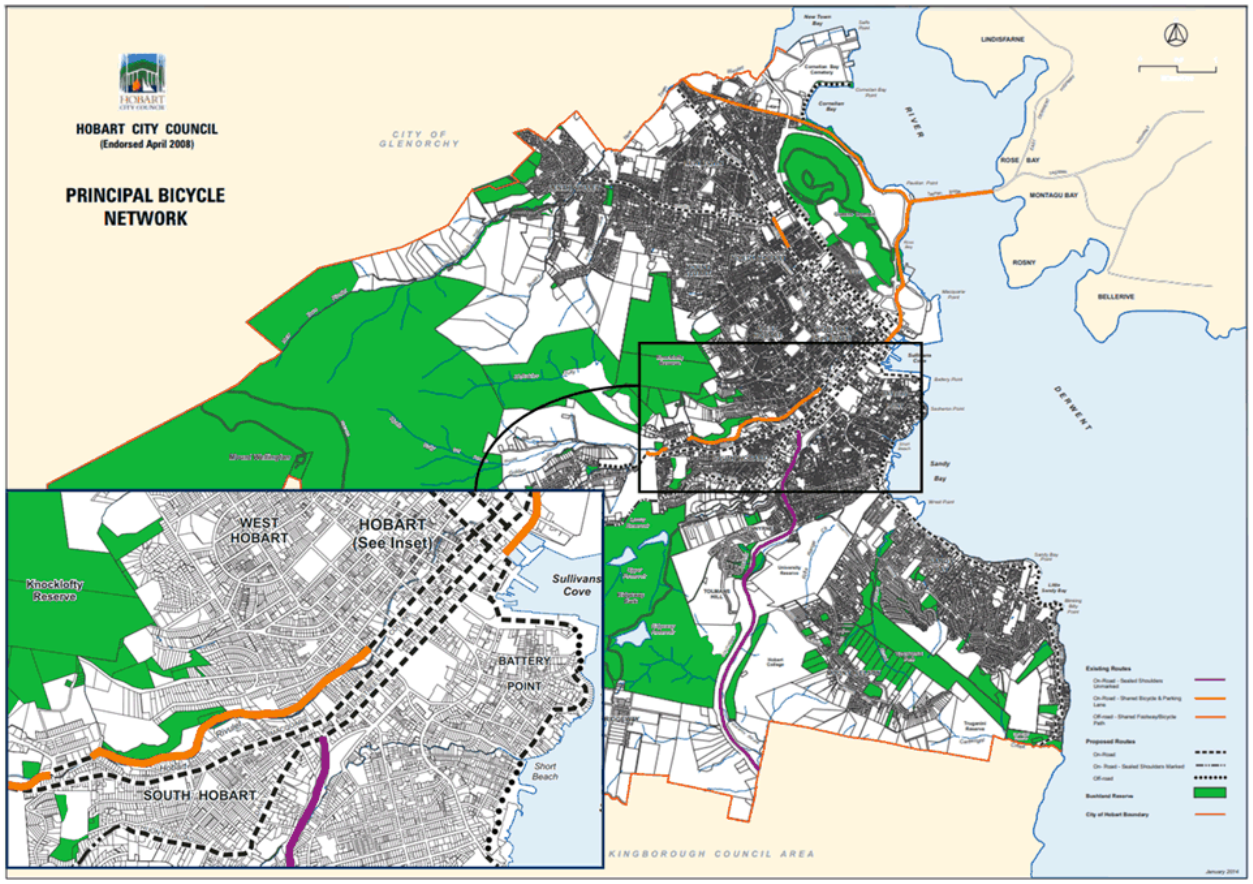


Figure 3.1 – Principal Bicycle Network Plan 2008

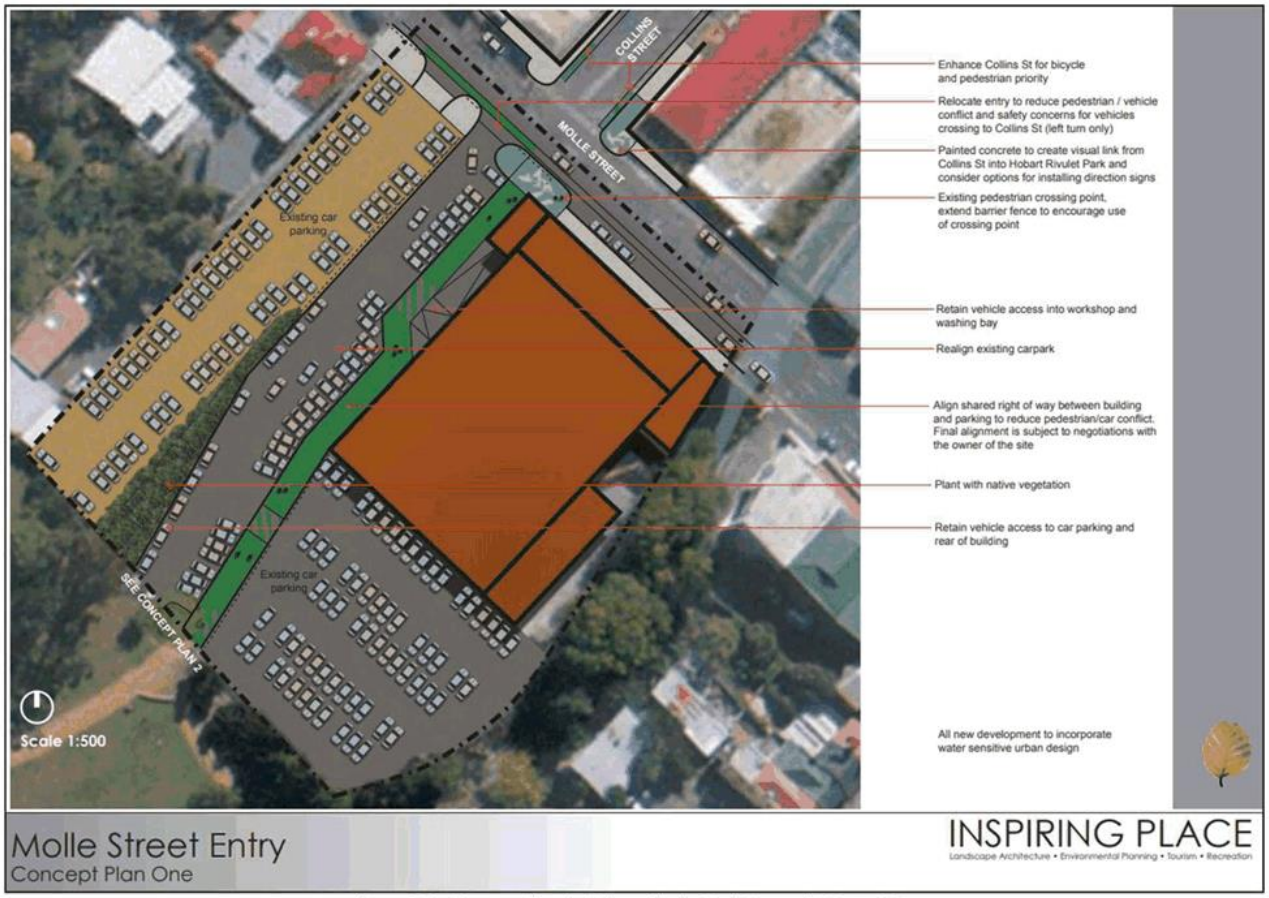


Figure 3.2 – Concept Plan 1 - Hobart Rivulet Park Strategic Master Plan

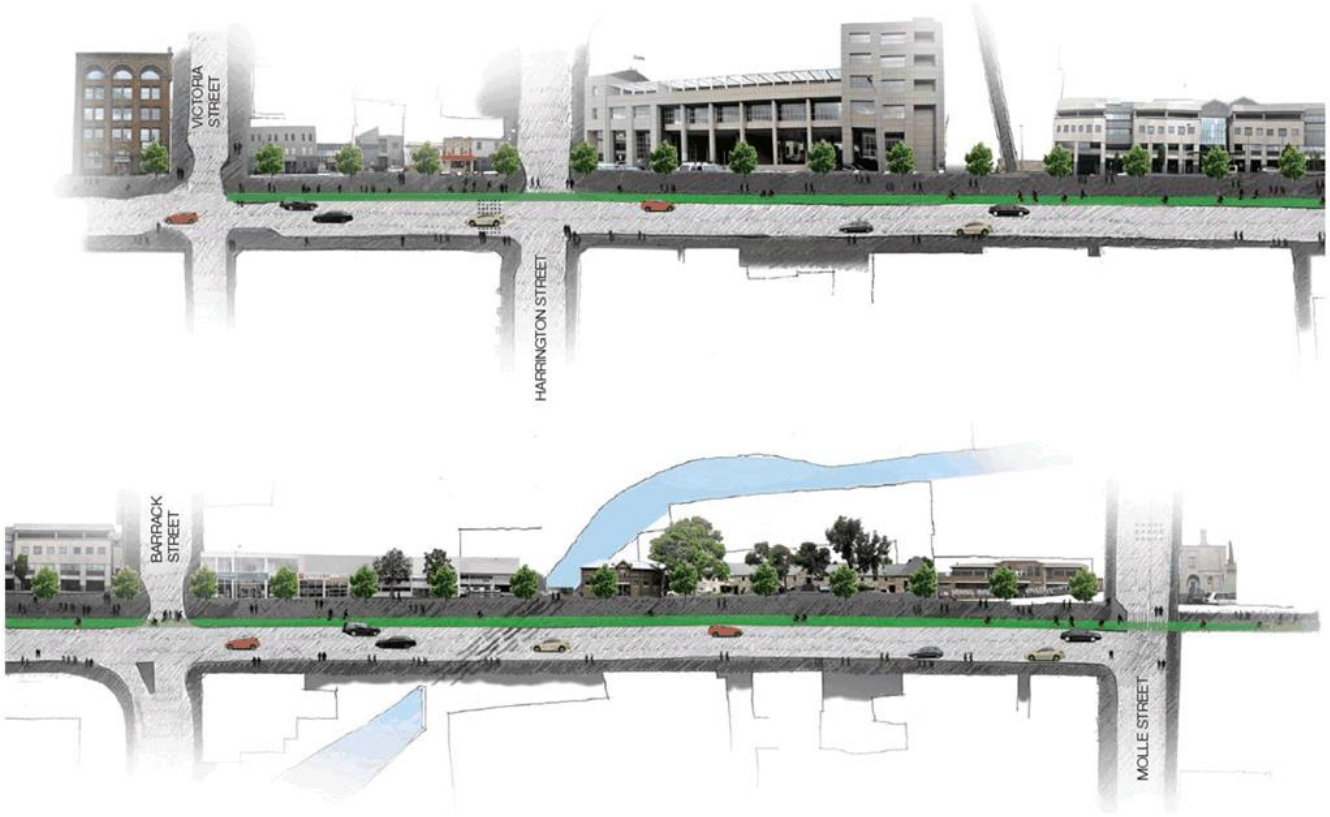


Figure 3.3 – AP4 – Linking Hobart Rivulet Park along Collins Street to the City - From Inner City Action Plan (ICAP)

4. Scope

This review only considers the potential upgrading of the intersection of Collins Street and Molle Street, to improve the amenity of pedestrians and cyclists crossing Molle Street between Collins Street and the Hobart Rivulet Shared Path. It does not directly consider other upgrades that may be possible or appropriate on the Collins Street corridor to improve facilities for people walking and cycling.

Those wider issues, in terms of the potential for upgrades to the Collins Street corridor, will be addressed in separate reviews and reports later in 2019.

5. Discussion – Intersection of Collins Street / Molle Street

The intersection of Molle Street and Collins Street is one of the key missing links in the overall path for people walking and cycling between South Hobart and the CBD.

For a person walking between the Hobart Rivulet Park and the Elizabeth Mall via Collins Street, Molle Street is the only street where a pedestrian does not have right of way over traffic when crossing. At all other intersections there are either pedestrian operated traffic signals (Barrack Street, Harrington Street, Molle Street and Elizabeth Street), or pedestrians have right of way over side road traffic (the low volume low speed Berea Street and Victoria Street).

At Molle Street however, both pedestrians and cyclists crossing between the private land at 40-50 Molle Street and Collins Street, must cross a three lane one-way arterial road.

The amenity of this crossing for pedestrians and cyclists was improved in 2010, by removing a general traffic lane and replacing it with a bicycle lane, and by installing kerb outstands to shorten the distance that pedestrians must cross.

After this change pedestrians and cyclists needed to look for gaps in only two general traffic lanes and a single bicycle lane rather than the previous three general traffic lanes, and had to cross a distance of 8.5 metres rather than the previous 13.5 metres.

While this would have made the crossing more comfortable for many users, it remains both a point of concern and a barrier for many members of the community.

Additional discussion can be found in the report prepared by engineering consultants GHD in March 2017, which can be found in Appendix A of this review.

6. Discussion – Road Safety History

The Department of State Growth maintain a database of crashes reported to the Tasmania Police. Data is available on crashes occurring between January 2000 and present.

In total there have been 45 recorded crashes at the intersection of Collins Street and Molle Street (or within 20 metres of the intersection) from the year 2000 to present.

Of these 45 crashes:

- 35 resulted in property damage only;
- 6 resulted in minor injury (taken to hospital but not kept overnight);
- 3 resulted in first aid at the scene (but no hospital visit);
- 1 resulted in serious injury (taken to hospital and kept overnight).

Figure 6.1 shows the crashes recorded and Figure 6.2 shows the cumulative crashes, from the year 2000 to 2019.

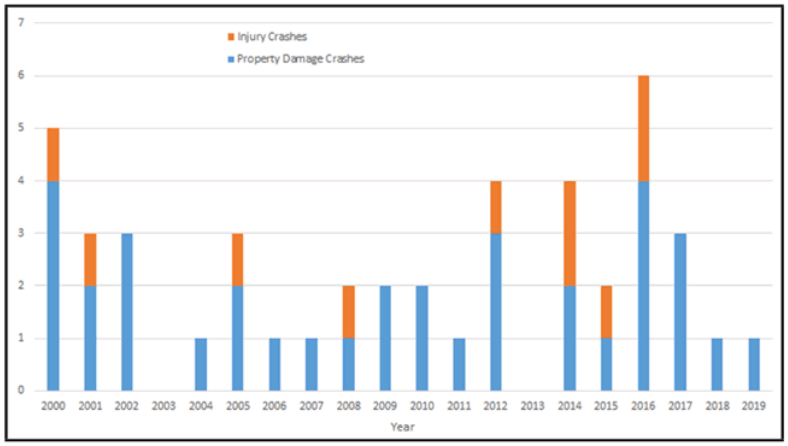


Figure 6.1 – Recorded Crashes by Year – Molle Street / Collins Street Intersection

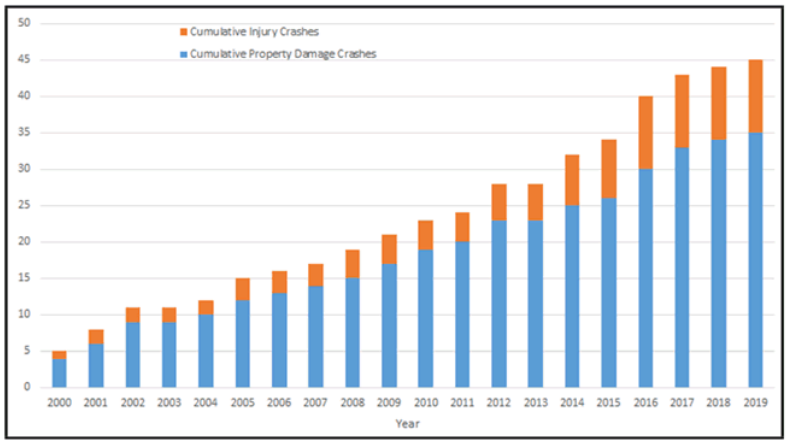


Figure 6.2 – Recorded Cumulative Crashes – Molle Street / Collins Street Intersection

In terms of crashes involving vulnerable road users (pedestrians, cyclists, motorcyclists):

- In October 2000, there was a collision between a motorcyclist and a light vehicle at the intersection resulting in minor injuries. This is recorded with little information, and as a crash type "198 – Other", which indicates an unusual incident (there are 82 separate codes for crash types that cover essentially all "normal" incident types).
- In October 2001, there was a collision between a cyclist and a light vehicle in the right of way on the 40-50 Molle Street site very close to the intersection. This resulted in minor injuries.
- In February 2005, there was a collision between a pedestrian and a cyclist at the intersection, resulting in minor injuries. There is no information that provides more detail.
- In October 2012, there was a collision between a pedestrian and a cyclist on the Molle Street departure from the intersection, resulting in property damage only. From the record, this crash appears to have involved a pedestrian seeking to cross Molle Street from west to east on the northern departure from the intersection being struck by a cyclist riding the wrong way (southbound) in the Molle Street bicycle lane.
- In July 2014, there was a collision between a cyclist and a light vehicle at the intersection, resulting in minor injuries. From the record, this crash appears to have involved a vehicle entering Molle Street from Collins Street colliding with a cyclist riding the wrong way (southbound) on Molle Street towards Collins Street, resulting in minor injuries.
- In October 2015, there was a collision between a cyclist and a heavy vehicle at the intersection, resulting in serious injuries. From the record, this crash appears to have involved a heavy vehicle turning left from Molle Street into the 40-50 Molle Street right-of-way and a cyclist also travelling northbound on Molle Street colliding.
- In May 2015, there was a collision between a pedestrian and a vehicle on the Molle Street departure from the intersection resulting in First Aid at the scene. This crash involved a reversing vehicle (most likely manoeuvring into or out of a parking space).
- In December 2016, there was a collision between a cyclist and a car on the Molle Street departure from the intersection resulting in minor injuries. Details are difficult to interpret. The crash is recorded as as a crash type "149 – Other Manoeuvring", which indicates an unusual incident that cannot be categorised as one of the more typical crash type coding.

The other crashes recorded as involving injury are:

- In July 2008, a car and a light goods vehicle were involved in a side-swipe collision on Molle Street at the Collins Street intersection, when one vehicle moved right into the lane occupied by the other, resulting in minor injuries.
- In May 2012, a car driver attempted to turn right from Molle into Collins and side swiped another car in Molle Street resulting in first aid at the scene.
- In May 2014, a car driver turned right out of Collins Street onto Molle Street and was involved in a collision with a northbound vehicle on Molle Street resulting in first aid at the scene.

Figure 6.3, below, shows the location of recorded crashes involving pedestrians and cyclists in the vicinity of the Collins Street / Molle Street intersection.

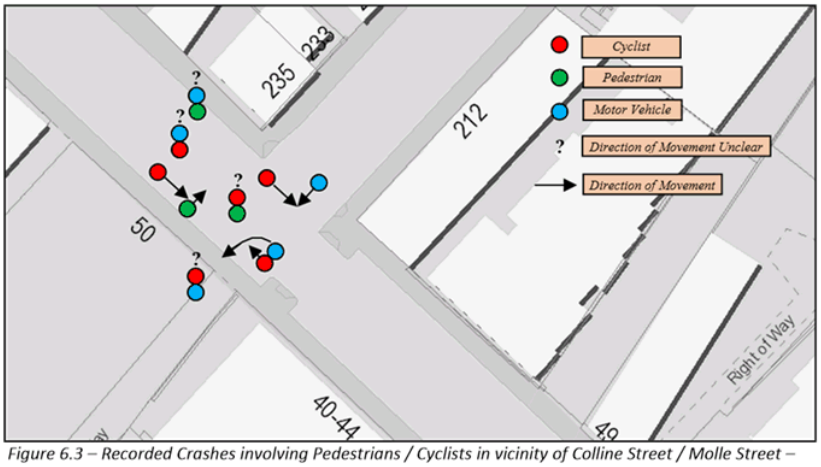


Figure 6.3 – Recorded Crashes involving Pedestrians / Cyclists in vicinity of Colline Street / Molle Street – 2000 to July 2019.

7. Provision of Pedestrian and Cyclist Priority Crossing Facilities

The current arrangements for pedestrians and cyclists seeking to cross Molle Street in the vicinity of Collins Street are for the responsibility to be placed on those individual pedestrians and cyclists to watch approaching general traffic on Molle Street, select a gap in that traffic that the individual is comfortable will give them sufficient time to cross safely to the other side, and then to cross.

These type of crossings are generally very safe (in terms of risk of injury to a pedestrian or a cyclists utilising the crossing), but generally offer a lower level of amenity to pedestrians and cyclists.

A portion of the community finds these crossings uncomfortable and feels that they are unsafe, and will therefore avoid utilising the crossings. As such, these crossings do present a barrier to some members of the community.

Typically as the width that a pedestrian or cyclist must cross increases, and as the volume and speed of general traffic increases, the proportion of the community that would feel that a crossing of this type is uncomfortable and unsafe will increase.

Crossing Molle Street at Collins Street would be one of the more uncomfortable pedestrian crossing points that receives heavy demand for pedestrian crossing manoeuvres in the City of Hobart area.

The upgrade works undertaken at the intersection in 2010 involved essentially improving the crossing to provide basically the highest level of amenity and comfort that it can while still requiring pedestrians to select their own gap in moving general traffic.

Additional discussion can be found in the report prepared by engineering consultants GHD in March 2017, which can be found in the Appendix A of this review.

Essentially, in the report GHD identified three options worth more detailed consideration. These are:

- To have the existing traffic signal timings at the intersection of Macquarie Street and Molle Street altered by the Department of State Growth to increase the number and frequency of gaps in traffic on Molle Street that can be used by pedestrians and cyclists to cross;
- To install kerb bulbings on either side of Molle Street on the departure side of the intersection (in the same way they are currently installed on the Molle Street approach to the intersection), to assist pedestrians to cross Molle Street on the northern side of the intersection.
- To signalise the intersection.

The first two of these options may provide some increase in amenity for pedestrians and cyclists, but they would still be required to select an appropriate gap in a stream of moving traffic. These would be incremental changes that while having some benefit, would not fundamentally alter the way the intersection feels to users.

To assist pedestrians and cyclists to cross a steam of general traffic without being required to observe and select their own gaps, there are two basic options:

- Grade separate the pedestrians and cyclists from general traffic by installing an overpass or underpass (i.e. a tunnel under Molle Street, or a pedestrian bridge over Molle Street);
- Time separate the pedestrians and cyclists from general traffic by ensuring that general traffic must stop for pedestrians and cyclists (by installing traffic signals, or a priority pedestrian crossing such as a 'zebra' crossing).

There is no realistic possibility of providing a pedestrian bridge over or an underpass under Molle Street, given the very high cost, and physical difficulty in doing so in a way that is safe and accessible for the community, time separation is the only practical alternative.

The two mechanisms available for time separating crossing pedestrians from a moving stream of general traffic are to install a 'zebra' type pedestrian crossing, or a set of traffic signals.

7.1 'ZEBRA' OR 'WOMBAT' CROSSINGS

A 'zebra' crossing is identified by white painted bandings across a road and associated signage, which under the road rules an approaching driver must use as a queue to stop and give way to pedestrians (and cyclists) on the crossing. A 'wombat' crossing is simply a 'zebra' crossing installed on the top of a flat top road hump.

These treatments can work well on low speed roads, but are seen to have poor safety performance on arterial roads, and very poor safety records on multilane arterial roads (such as Molle Street with multiple lanes in one direction).

Under the guidance provided by the Australian Standards and AustRoads, and therefore required to be followed in Tasmania, it would not be possible or appropriate to install either a 'zebra' crossing or a 'wombat' crossing in this location.

7.2 TRAFFIC SIGNALS

Traffic signals are easily understood by all road users, and are the typical treatment used in the city road environment.

Pedestrians are provided their own dedicated crossing phases, and would be able to cross all legs of the intersection with priority.

The main negative impacts of traffic signals are the cost of installation and maintenance, and the additional congestion and delays they can cause for road users.

Figure 7.1, below contains a concept design for the full signalisation of the intersection, including the driveway / right-of-way to 40-50 Molle Street.

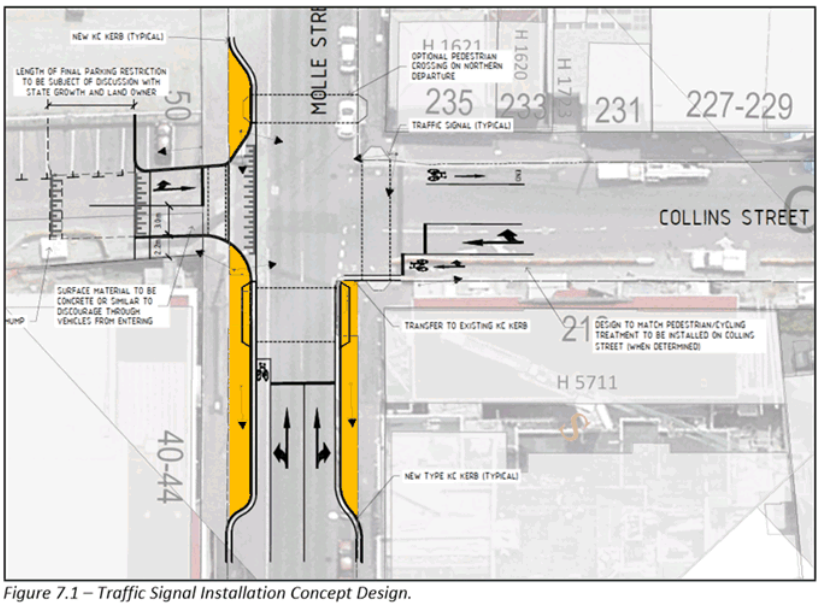


Figure 7.1 – Traffic Signal Installation Concept Design.

8. Installation of Traffic Signals

Engineering consultants GHD were engaged to prepare modelling and consider options for the installation of traffic signals at the Collins Street / Molle Street intersection (along with other potential options). A copy of their report is contained in Appendix A of this review.

Adapted from there report, is the summary of impacts on road users contained in Table 8.1:

	Impact
Pedestrians	Reduce average crossing delays for pedestrians crossing Molle Street by up to 40% during peak times. Would provide certainty for pedestrians waiting to cross that they will be provided with a suitable gap in the flow of traffic by the traffic signals.
Cyclists	Would require cyclists on Molle Street travelling north to stop at the bottom of the hill at the traffic signals if they arrived when the traffic signals are red. Would allow cyclists on the Collins Street corridor to either, utilise the traffic signals to ride on road across Molle Street with other vehicular traffic, or to utilise the signalised pedestrian crossing to cross separate from vehicular traffic.
Vehicle Drivers	Would increase average delays for drivers on Molle Street by 7 seconds in the morning peak period and by 9 seconds in the afternoon peak period.
Users of 40-50 Molle Street Property	Drivers, pedestrians and cyclists exiting the main driveway to the 40-50 Molle Street site onto Molle Street would be incorporated into the traffic signals. This would increase delays at off-peak times, but would allow these users to enter Molle Street and turn left into Molle Street or continue straight across into Collins Street utilising the traffic signals.
Cost Estimate	$450,000

Table 8.1 – Summary of Traffic Signal Installation Impacts

Three concept designs have been prepared by the City of Hobart for the signalisation of the intersection. These three concepts are:

- Option 1 – Only install a set of pedestrian operated signals (that can also be used by cyclists) on Molle Street immediately south of Collins Street.
- Option 2 – Install conventional traffic signals at the intersection of Collins Street and Molle Street, but do not include the shared driveway to 40-50 Collins Street in the traffic signals. It would continue to operate as a standard driveway.
- Option 3 – Install conventional traffic signals at the intersection of Collins Street and Molle Street, and formalise and include the shared driveway to 40-50 Collins Street in the traffic signals.

These three concept designs are contained in Appendix B of this review.

Following discussion with the Department of State Growth, and with the owner of the 40-50 Molle Street property, Option 3 is considered the most appropriate treatment to install at Collins Street / Molle Street.

9. Financial Implications

The estimated cost of the basic traffic signal installation (Option 3 which includes the signalisation of the shared driveway to 40-50 Collins Street) is $450,000.

The ongoing maintenance cost of the traffic signals at the site would be borne by the Department of State Growth, who would be responsible for operating the traffic signals.

The proposal will not require the removal or alteration of any metered parking.

The City of Hobart has funding of $500,000 available for the signalisation of the intersection of Molle Street / Collins Street in the current (2019/2020) financial year.

With the current design and construction workload, it is not considered feasible for construction to occur in the 2019/20 financial year.

Construction is instead planned to commence in late 2020 (in the 2020/2021) financial year.

It is also proposed that the signalisation be the subject of an application for part funding under the Australian Government Funded Black Spot program in the 2020/2021 financial year.

10. Impacts on Adjacent Stakeholders

The installation of traffic signals at the intersection of Molle Street / Collins Street would most directly impact the following stakeholders:

10.1 40-50 Molle Street

The large mixed use site at 40-50 Molle Street generates vehicular traffic into and out of the intersection via its main driveway located directly opposite Collins Street. This driveway also serves pedestrians and cyclists moving between the Hobart Rivulet Park and the road network via a right of way that operates along the driveway.

The safety and operation of the driveway and its access, and the interaction between the various users is a matter of concern to the property owner.

After consultation with the property owner, support in writing has been provided to City of Hobart from the property owner for the installation of traffic signals at the intersection, including the transfer of any part of the private land necessary to facilitate the installation.

10.2 Other Adjacent Properties

The proposal would have no direct impact on other adjacent properties.

11. Conclusions

The installation of traffic signals at the intersection of Collins Street and Molle Street is identified as an action for 2019/20 in the City of Hobart Annual Plan. This is derived from a clear strategic focus placed on improving pedestrian and cyclist facilities along the Collins Street corridor to better link the Hobart Rivulet Park to the CBD in a number of strategic documents, including:

- The Principal Bicycle Network Plan - City of Hobart – 2008;
- The Hobart Rivulet Park Strategic Master Plan – City of Hobart - 2011;
- The Inner City Action Plan – City of Hobart - 2012;
- The Capital City Strategic Plan – City of Hobart - 2015;

A preferred concept design has been developed that signalises the intersection, and includes the shared driveway to 40-50 Molle Street in the signalisation.

The Department of State Growth, and the landowner to 40-50 Molle Street have both indicated that this is their preferred option.

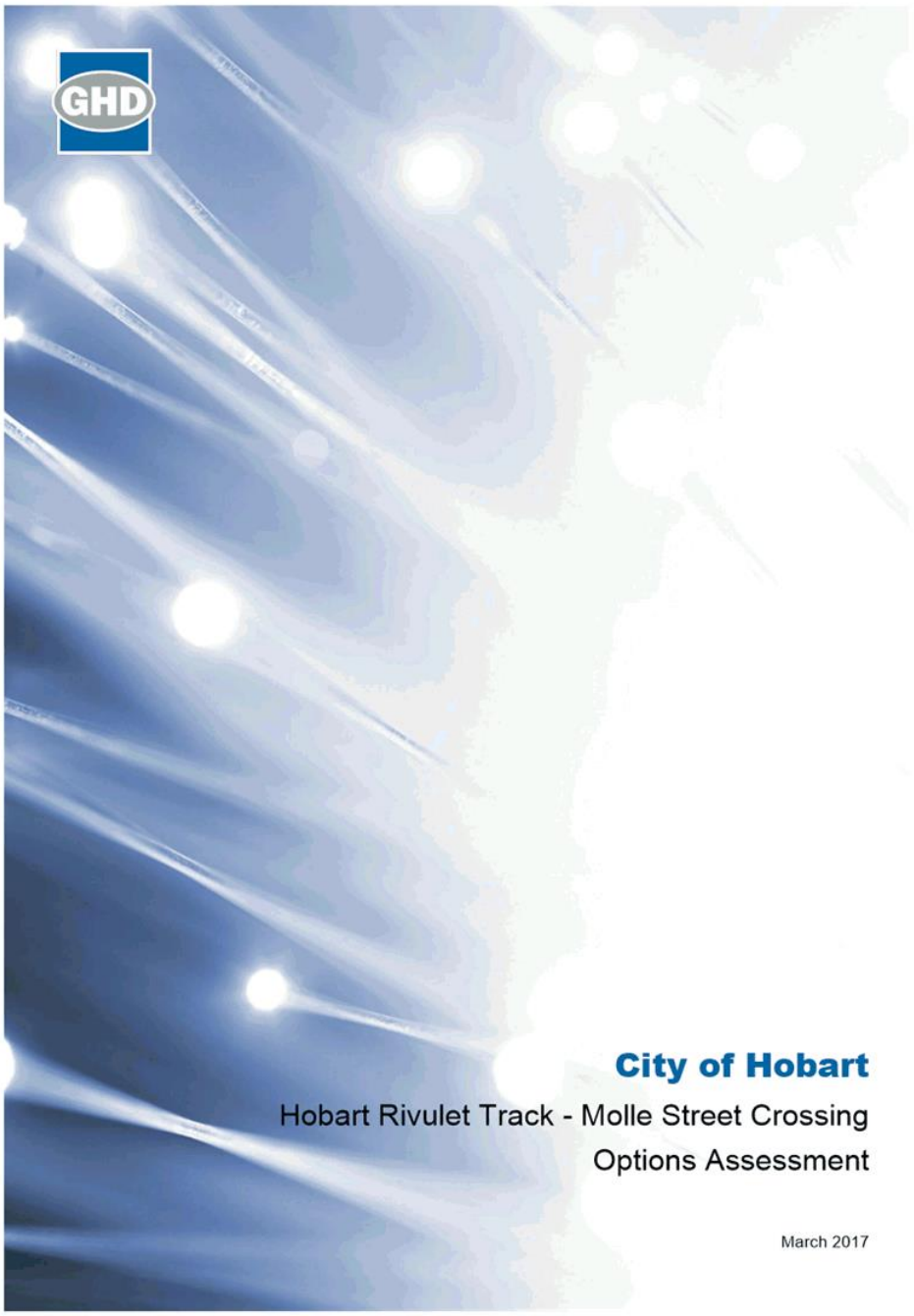
12. Recommendations

It is recommended that:

To progress the upgrading of the intersection of Collins Street and Molle Street:

- The installation of traffic signals at the intersection of Molle Street and Collins Street to improve the safety and amenity of pedestrians and cyclists be supported.
- The General Manager be asked to negotiate with the landowner of 40-50 Molle Street for the incorporation of the existing driveway and associated 'right of way' utilised by pedestrians and cyclists into the proposed traffic signals, including the transfer of any land necessary to facilitate that installation.
- An initial funding allocation of $250,000, towards the estimated basic signalisation project cost of $500,000 be reallocated from the 2019/20 to the 2020/2021 financial year.
- That the basic signalisation project be the subject of an application for blackspot funding in the 2020/2021 financial year, with $250,000 contributed by City of Hobart and the balance requested to be contributed by the program.
- That a detailed design and costing be prepared for the upgrading of the Collins Street / Molle Street intersection to a higher standard than the basic signalisation necessary to treat the pedestrian and cycling safety and amenity deficiencies that would be subject of the Blackspot Project application, and that this detailed design and costing be subject of a further report.

Appendix A – GHD Options Assessment – March 2017


GHD
City of Hobart
Hobart Rivulet Track - Molle Street Crossing
Options Assessment
March 2017
WATER | ENERGY & RESOURCES | ENVIRONMENT | PROPERTY & BUILDINGS | TRANSPORTATION

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GHD has prepared the preliminary cost estimates set out in section 3 of this report ("Cost Estimate") using information reasonably available to the GHD employee(s) who prepared this report; and based on assumptions and judgments made by GHD.

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The Cost Estimate is a preliminary estimate only. Actual prices, costs and other variables may be different to those used to prepare the Cost Estimate and may change. Unless as otherwise specified in this report, no detailed quotation has been obtained for actions identified in this report. GHD does not represent, warrant or guarantee that the works can or will be undertaken at a cost which is the same or less than the Cost Estimate.

Where estimates of potential costs are provided with an indicated level of confidence, notwithstanding the conservatism of the level of confidence selected as the planning level, there remains a chance that the cost will be greater than the planning estimate, and any funding would not be adequate. The confidence level considered to be most appropriate for planning purposes will vary depending on the conservatism of the user and the nature of the project. The user should therefore select appropriate confidence levels to suit their particular risk profile.

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1. Introduction

1.1 Background

GHD was engaged by the City of Hobart to undertake an investigation of several options to address safety concerns associated with pedestrian and cycling linkages across Molle Street at the Collins Street junction.

1.2 Study Area

The Study Area comprises the immediate area surrounding the Molle Street / Collins Street intersection including the Hobart Rivulet Shared Path, the property at 40 Molle Street (including the right of way between the Rivulet Track and Molle Street), and the Molle Street / Macquarie Street junction. The Study Area is presented in Figure 1.

Figure 1 Study Area

Base image source: LISTMap, DPIPWE

1.3 Previous Reports

40 Molle Street, Hobart Traffic Impact Assessment (GHD, September 2014)

GHD were engaged by Wooster Ave Pty Ltd to prepare a traffic impact assessment for a proposed redevelopment of the 40 Molle Street site which involved a new child care centre, shop and café, and minor car park modifications. The report was required to specifically consider the impact of the development on the existing right-of-way linking the Hobart Rivulet track to Molle Street and Collins Street.

The report concluded that the car park modifications which were proposed as part of the development would not result in any detriment to pedestrian and cyclist access compared to the existing situation.

40 Molle Street, Hobart TIA Addendum (GHD, March 2015)

GHD prepared an addendum to the 2014 traffic impact assessment to address safety concerns related to the shared way through the car park. A revised car park layout was prepared which included further separation between pedestrians, cyclists and vehicles by providing a raised footpath and zebra crossings extending the full length of the site between Molle Street and the Rivulet Track. Cyclists would share the parking aisle with vehicles.

Specifically, the addendum made the following recommendations:

- Pavement markings (for example, zebra crossing or a contrasting surface treatment) should be provided to indicate a clear pedestrian path between the end of the raised footpath near the building and the beginning of the Rivulet Track across the one-way circulation aisles behind the building, and to highlight to drivers and cyclists the potential for pedestrians in this area.
- Bollards should be installed at the beginning of the Rivulet Track to prevent vehicular access.
- Bicycle stencils (pavement markings) should be provided along the central aisle to provide a warning to drivers of the potential presence of cyclists.
- A diversion should be provided at the beginning of the Rivulet Track to allow cyclists to enter the track from the central parking aisle, or to enter the parking aisle from the Rivulet Track.
- Give-way and "end shared path" signage should be provided for cyclists entering the car park from the Rivulet Track.

Most of these modifications to the shared path and interface were not included in the redevelopment of the site.

Rivulet Track Car Park Connection Road Safety Assessment (Midson Traffic, May 2016)

Midson Traffic were engaged to investigate the pedestrian and cycling connection between the Hobart Rivulet track and Molle Street through the 40 Molle Street car park. The review was undertaken as a result of significantly increased traffic within the car park (associated with child care drop off) coinciding with the commuter peak usage of the Rivulet track.

The report makes several recommendations to improve traffic management and safety at 40 Molle Street, including provision of a wheelchair accessible gate structure at the end of the shared path and various traffic management signage. The report also recommends that Council investigate *"improved access to the car park and shared zone for pedestrians and cyclists at the Molle Street junction"* as a result of increased usage of the 40 Molle Street access by vehicles.

Molle Street Right of Way Review (MRCagney, August 2016)

Hobart City Council commissioned MRCagney to undertake a review of the right-of-way shared path through the 40 Molle Street car park including the 2014 GHD Traffic Impact Assessment and subsequent safety review by Midson Traffic as described above.

Following a review of the Midson Traffic recommendations, the MRCagney report concludes that a 'shared zone' through the car park is not appropriate. Instead, the report recommends a 1.5 m footpath and appropriate pedestrian crossing treatments at parking aisles, which would provide separate pedestrian access, and installing signage so that cyclists are aware that they are entering a mixed traffic situation where they are not afforded full priority.

In considering future conditions, the MRCagney report recommends that Council ideally pursue full separation of the Rivulet Track through 40 Molle Street, with the track realigned along the

north-western boundary of the site, thereby bypassing the car park. If full separation cannot be achieved, the report recommends partial separation through provision of a plastic kerb barrier.

Hobart Rivulet Shared Path Safety Assessment (CDM Research, September 2016)

Hobart City Council commissioned CDM Research to undertake a safety assessment of the Hobart Rivulet shared path between Molle Street and Gore Street, including the shared way through the car park at 40 Molle Street. The report provided a number of recommendations to address safety concerns and improve legibility of the shared path.

In particular, the report provided the following conclusions with regard to Molle Street crossings:

- *"While elevated, we do not consider the hazard associated with the car park to be high in either an absolute or relative sense; users will generally be traveling slowly and pedestrians and bicycle riders are at far greater risk crossing Molle Street itself than within the car park."*
- *"Immediately outside the car park on Molle Street, Council should consider improvements to the intersection to provide for more convenient and safe movement of pedestrians and bicycle riders towards Collins Street."*

1.3.1 Findings

The key findings from the review of previous reports are as follows:

- A formalised 'shared zone' within the 40 Molle Street car park is not supported
- A separate pedestrian footpath should be provided for the full length of the site, with cyclists able to share the parking aisle with vehicles
- Controls should be placed at the Rivulet Track interface to reduce cyclist speeds entering the car park which is a mixed traffic situation
- Improvements to the crossing point at Molle Street are critical to ensure a safe transition between the Rivulet Track, 40 Molle Street and Collins Street

It is noted that under a mixed traffic situation, cyclists will be travelling on the left hand side of the parking aisle in either direction and therefore may be required to cross at some point in order to access a single crossing point at Molle Street.

2. Preliminary Assessment

2.1 Existing Conditions Review

2.1.1 Infrastructure

Molle Street is a one-way street with two traffic lanes and a bicycle lane travelling in the north-westbound direction. The intersection of Collins Street connects directly opposite the 40 Molle Street crossover and allows right-in and right-out movements only. Collins Street traffic gives way to traffic on Molle Street.

Pedestrian footpaths are provided on both sides of both Molle Street and Collins Street. The existing pedestrian crossing at this location comprises kerb extensions in Molle Street immediately upstream of the Collins Street junction. There are no pedestrian crossing facilities provided in Molle Street downstream of Collins Street. Pram ramps and a painted safety bar island are provided in Collins Street at Molle Street.

The existing pedestrian crossing point is shown in Figure 2.

Figure 2 Existing Pedestrian Crossing Point

The view from the car park access is provided in Figure 3.

Figure 3 View from 40 Molle Street

2.1.2 Traffic Flow and Gap Creation

Council engaged Matrix Traffic and Transport Data to undertake traffic surveys at the intersection of Molle Street and Collins Street on Thursday 31 March 2016, between 7:00 am and 7:00 pm, and on Saturday 2 April 2016, between 8:00 am and 2:00 pm. A gap analysis was also undertaken, where the number of 6 second gaps in traffic[1] in each 15-minute period was recorded.

[1] Given a crossing width of approximately 7.5 metres, a 6 second gap represents the crossing time of a pedestrian at a walking speed of 1.2 m/s

The impacts of traffic volumes and upstream signals on gap creation at the existing Molle Street pedestrian crossing can be seen by plotting the proportion of headways greater than 6 seconds against traffic volume. The results are presented in Figure 4.

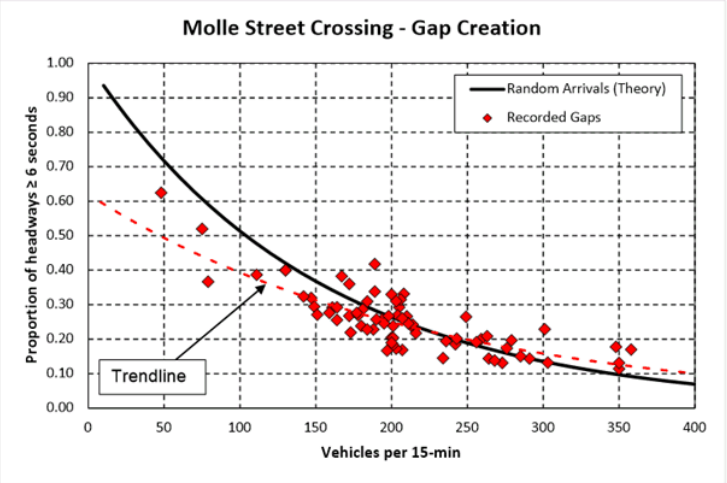

Figure 4 Molle Street Crossing – Gap Creation

Data source: City of Hobart, 31 March 2016 and 2 April 2016

From Figure 4, the proportion of headways in the traffic stream which are greater than 6 seconds at the crossing point are typically trending up to 5% less than the proportion which would be expected under unobstructed traffic flow using a random arrivals model, particularly at lower traffic volumes.

It is noted that the upstream intersection is subject to a two-phase signal arrangement, with a relatively high volume of traffic turning left from Macquarie Street into Molle Street. The only periods where traffic is held from entering Molle Street and travelling towards the existing crossing are during the short all-red period at the end of each phase, or when pedestrians are crossing Molle Street at the signals.

Another factor which may be influencing the creation of gaps relates to the multi-lane nature of Molle Street, which allows for different rates of 'platoon spreading' in each lane on approach to the crossing point.

Based on the results of the traffic surveys it is possible that the traffic signals at the Molle Street / Macquarie Street intersection are hindering, rather than aiding, the creation of gaps at the crossing point.

2.2 Options

The following options have been identified for improving safety for pedestrians and cyclists crossing Molle Street at Collins Street:

Option 1 – Do Nothing

The pedestrian crossing will be left as per the existing situation and no action taken to improve cycling treatments across Molle Street. Figure 5 presents the average crossing delays at the

existing crossing point, for pedestrians and cyclists who have dismounted, based on gap acceptance theory, using a walking speed of 1.0 m/s, and adjusting for the up-stream traffic signals at Macquarie Street.

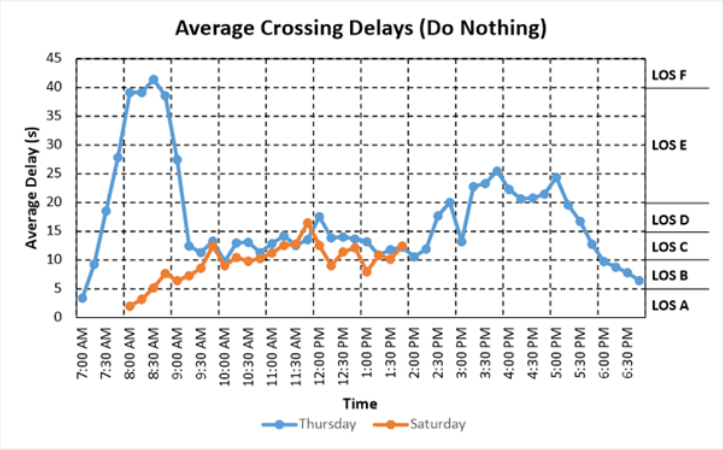

Figure 5 Average Crossing Delays (Do Nothing)

The above graph shows that, during the weekday morning peak period, when traffic volumes on Molle Street are highest, the existing pedestrian crossing operates at LOS E/F with average crossing delays in the order of 40 seconds. For the remainder of the day, delays are in the range of 10 to 15 seconds (LOS C), increasing to around 20 to 25 seconds (LOS E) for the evening peak period.

Based on the above, it is considered that the existing situation results in unacceptable delays for pedestrians attempting to cross during the morning peak period and some treatment is warranted to improve level of service and reduce incidence of risky crossings during smaller gaps.

It is noted that most cyclists do not currently use the existing pedestrian crossing, instead crossing Molle Street as per the same rules as general traffic. Cyclists are offered no specific protections unless dismounting and walking across the street using pedestrian infrastructure.

Option 2 – Improve Gap Creation

The creation of gaps in the Molle Street traffic stream could be improved by adjusting traffic signal phasing at the Macquarie Street junction by one or more of the following methods:

a. Increasing the 'All-Red' time for all movements

b. Providing pedestrian early starts on all intersection approaches

c. Adding a left-turn arrow

The current arrangement at the traffic signals results in very small gaps being created throughout the cycle, particularly during peak periods when traffic volumes on Molle Street are highest. The heavy left turn flow from Macquarie Street, which is approximately 1.5 to 2 times as high as the through movement on Molle Street, results in a consistent flow of platooned vehicles approaching the pedestrian crossing with few breaks between platoons due to signal phasing.

Adjustments to signal phasing could provide reliable gaps between platoons without significantly impacting on traffic performance at the upstream junction. An artificial 'cap' on the maximum delay experienced by a crossing pedestrian would be created, due to a guaranteed gap occurring once or twice per cycle.

This 'cap' would depend on the treatment applied as follows:

- Equal to the cycle time for a left turn arrow holding Macquarie Street turns
- Equal to approximately half the cycle time for an increase in the 'All-Red' time and provision of pedestrian early starts

Option 3 – Reduce Molle Street to One-Lane

Reducing Molle Street to a single lane would significantly reduce the crossing distance, thereby reducing the size of the critical gap for pedestrian crossings. This option is unlikely to be feasible, however, given the function of Molle Street as a preferred bypass route around the Hobart CBD and existing traffic volumes over 1,400 vehicles per hour during peak periods.

Option 4 – New Crossing Point

Another option might be to relocate the existing crossing point, or alternatively provide an additional crossing point, downstream of the Collins Street junction:

a. Remove and relocate existing crossing point

b. Provide new crossing point west of Collins Street

The location of the crossing point is shown in Figure 6.

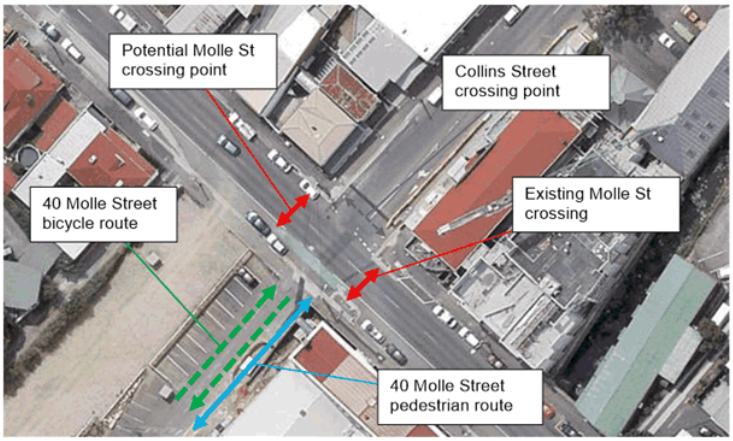

Figure 6 Relocate or Provide New Crossing Point

Base image source: LISTMap, DPIPWE

The existing crossing is ideally located to accommodate pedestrian traffic from the Rivulet Track, given the pedestrian route within the 40 Molle Street site, and to minimise the number of conflict points at the Molle Street / Collins Street junction. Therefore, removal and relocation of the existing crossing point (i.e. Option 4a) is not recommended.

A new crossing point on the western side of the junction as shown in Figure 6 would provide an additional crossing option for those pedestrians wishing to cross Molle Street and access the

western side of Collins Street for travel into the CBD. It would also allow cyclists exiting the Rivulet Track to dismount and cross Molle Street without veering across the 40 Molle Street access driveway.

Option 5 – Pedestrian (Zebra) Crossing

Australian Standard AS1742.10, *Manual of uniform traffic control devices – Part 1: Pedestrian control and protection*, 2009, states that that for mid-block crossings:

- *"No more than one lane of moving traffic in any one direction shall be encountered by a pedestrian using a crossing"* and *"Crossings shall not be used on arterial roads"*.

Since Molle Street is a key route around the Hobart CBD, with two lanes travelling in the north-westbound direction, a pedestrian (zebra) crossing is not appropriate.

Option 6 – Pedestrian Actuated Traffic Signals

The Roads and Maritime Services (RMS) *Traffic Signal Design Guide* was consulted with regard to standardised warrants for the provision of pedestrian actuated traffic signals. The warrants are as follows:

- *"For each of four one-hour periods of an average day:*
  - *The pedestrian flow crossing the road exceeds 250 persons/hour; and*
  - *The vehicular flow exceeds 600 vehicles/hour in each direction or, where there is a central median of at least 1.2 m wide, 1000 vehicles/hour in each direction." OR*
- *For each of eight one-hour periods of an average day:*
  - *The pedestrian flow exceeds 175 persons/hour; and*
  - *The vehicular flow exceeds 600 vehicles/hour in each direction or, where there is a central median of at least 1.2 m wide, 1000 vehicles/hour in each direction; and*
  - *There is no other pedestrian crossing or signalised marked foot crossing within a reasonable distance."*

Given that Molle Street is a one-way street, it is appropriate to use 1,000 vehicles per hour (one-way) as the threshold when considering the above warrants. Peak traffic volumes and corresponding pedestrian flows are summarised in Table 1.

Table 1 Pedestrian Actuated Crossing Warrants

Time	Traffic Volume (veh/hr)	Pedestrian Crossing (ped/hr)
7:15 – 8:15 AM	1,069	150
8:15 – 9:15 AM	1,357	149
2:45 – 3:45 PM	1,021	111
3:45 – 4:45 PM	1,091	137
4:45 – 5:45 PM	1,045	172

Therefore, based on Table 1, the warrants for pedestrian signals are not strictly met. Notwithstanding, it is considered that a signalised crossing may be warranted given the importance of the Rivulet Track as a key walking and cycling track. It is further noted that the

crossing far exceeds typical warrants for a pedestrian (zebra) crossing[2], which cannot be provided due to the physical characteristics of Molle Street (see Option 5 assessment).

The RMS Design Guide also states that signalised mid-block crossing should not be located within 30 metres from any side streets so as to avoid side-street traffic misinterpreting the traffic signals as controlling that movement. AS1741.10 States that: *"Intersection traffic signals should be considered if a pedestrian-actuated signal meeting the above requirements is to be located at or close to an as yet unsignalised intersection."*

Therefore, due to the proximity of Collins Street, it would be appropriate to consider full signalisation of the intersection rather than a pedestrian crossing.

Option 7 – Signalise Collins Street Junction

There are two alternative options for the signalisation of Collins Street:

a. Retain the 40 Molle Street property access as an uncontrolled crossover

b. Fully signalise the 40 Molle Street property access

Based on the preliminary assessments for other options identified in this report, it is considered that a signalised crossing of Molle Street may be warranted. Given the proximity of the preferred crossing location to the Collins Street junction, it would be appropriate to signalise this intersection, rather than provide mid-block traffic signals (as per Option 6), in order to prevent any confusion regarding the signal control.

The benefits and impacts associated with each of option a and b listed above are detailed in Section 3.3 of this report.

2.3 Options Assessment

The following options are considered to have benefits and have been progressed to the detailed assessment:

- Option 2 – Improve Gap Creation
- Option 4 – New Crossing Point
- Option 7 – Signalise Collins Street Junction

These are discussed in detail in Section 3 of this report.

3. Detailed Assessment

3.1 Option 2 – Improve Gap Creation

It is expected that holding traffic only once per cycle at Macquarie Street / Molle Street (as would occur if a left-turn phase were provided) will not have significant benefit for average delays compared to the existing situation, given that cycle times are around 110 to 120 seconds during the morning peak period. The artificial 'cap' on pedestrian crossing delays would therefore be up to 120 seconds, significantly higher than the delays current experienced.

Based on this, 'Option 2c – Left-turn Arrow' is not considered to provide significant benefit to pedestrian or cyclist crossings at the Molle Street / Collins Street junction and has therefore been excluded from this analysis.

[2] Pedestrian flow (P) greater than or equal to 30 pedestrians per hour, vehicular flow (V) greater than or equal to 500 vehicles per hour, and the product PV greater than or equal to 60,000 (RMS Supplement to AS1742 version 2.4, 31 August 2016). These warrants are exceeded between 7:00 am and 10:00 am and between 11:15 am and 6:45 pm on a typical weekday.

Options 2a and 2b will have essentially the same impacts on traffic performance at the Macquarie Street / Molle Street junction and the same benefits to pedestrian and cyclist crossings at the Molle Street / Collins Street junction. Both sub-options involve holding traffic briefly at the traffic signals during phase transitions twice per cycle. It is noted that a pedestrian early start would typically only be activated when a pedestrian wishes to cross at the signals.

3.1.1 Impacts on Pedestrians

SCATS data for the Macquarie Street / Molle Street intersection suggests that the Molle Street pedestrian crossing is called around 70% of the time in the AM peak period and between 40 and 50% of the time during the PM peak period. The Macquarie Street pedestrian crossing is called 90 to 100% of the time during both peaks.

Pedestrian early starts at traffic signals typically hold traffic for the duration of the walk signal, which is generally 5 seconds. The key constraint is that crossing pedestrians must be well established in crossing the road before turning traffic is released, but shorter early starts down to 3 or 4 seconds may be suitable in some situations.

The pedestrian early starts would therefore provide a high probability of a reliable gap in traffic at Collins Street occurring on average 1.7 times per cycle during the AM peak period and 1.5 times per cycle during the PM peak period. Average crossing delays would effectively be 'capped' at:

- 35 seconds during the morning peak period, and
- 23 seconds during the evening peak period.

Crossing delays throughout the off-peak periods will not be affected.

The effective 'cap' on crossing delays is a significant factor in improving safety for pedestrians crossing the road. Long delays can cause frustration and result in pedestrians attempting to cross during smaller gaps, which may not necessarily be sufficient to complete a safe crossing. Eliminating long delays by providing regular, reliable gaps in traffic will reduce incidence of this occurring.

It is noted that the pedestrian early starts would also provide benefits to pedestrian safety at the intersection of Molle Street and Macquarie Street.

All-Red Phase vs Pedestrian Early Start

With regard to increasing the 'All-Red' phase without provision of a pedestrian early start, the amount of time traffic would be held at the signals would be lower than for a pedestrian early start, however it would occur every cycle and not be contingent on pedestrians regularly calling the crossing signals. The above factors are likely to cancel out and the overall benefits to gap creation are likely to be very similar than those for the pedestrian early start.

3.1.2 Impacts on Cyclists

No specific protection or priority for cyclists crossing Molle Street are proposed for Option 2, except for those dismounting and using the pedestrian crossing. Rather, cyclists will continue to use the 40 Molle Street access subject to the same rules as vehicles, crossing towards Collins Street when there is an appropriate gap in traffic.

Any benefits for cyclists will be due to the changes to upstream signal timing, however it is noted that cyclists require a lower gap (approximately 5 seconds) for the through movement compared to a 7.5 second crossing time for pedestrians. The existing delays for cyclists crossing Molle Street are around 11 seconds in the morning peak period and 7 seconds in the evening peak.

Long crossing delays for cyclists are very unlikely and therefore the proposed modifications to upstream signal timing are not expected to provide significant benefit for cyclists using the Rivulet Track.

3.1.3 Impacts on Traffic

An increase in the All-Red phase, due to a pedestrian early start or otherwise, will result in overall reduced green time available for all vehicle movements at the Molle Street / Macquarie Street junction. In order to assess the impacts on the junction, A SIDRA Intersection 7.0 model was developed for the intersection of Molle Street and Macquarie Street. The model was based on the following data and assumptions:

- Turning movement count data collected September 2011 and May 2016
- SCATS lane count data collected November 2016
- Cycle time of 120 seconds (AM), 70 seconds (PM) and 60 seconds (Off-peak)
- Highly favourable arrival conditions for Macquarie Street in the AM Peak due to signal coordination along the corridor

The intersection was modelled under existing conditions with an All-Red phase of 2 seconds as well as increased All-Red phases of 4 seconds and 6 seconds. Note that the actual length of the All-Red phases or any pedestrian early start may vary subject to Department of State Growth requirements.

The results for the intersection are presented in Table 2.

Table 2 Option 2 – Modelling Results (Average Delay and Level of Service)

Approach	2 Second All-Red (Existing)	4 Second All-red	6 Second All-Red
AM Peak			
Macquarie Street	2 s [LOS A]	2 s [LOS A]	3 s [LOS A]
Molle Street	57 s [LOS E]	60 s [LOS E]	60 s [LOS E]
PM Peak			
Macquarie Street	4 s [LOS A]	7 s [LOS A]	10 s [LOS A]
Molle Street	42 s [LOS D]	42 s [LOS D]	42 s [LOS D]
Off Peak			
Macquarie Street	3 s [LOS A]	5 s [LOS A]	8 s [LOS A]
Molle Street	47 s [LOS D]	47 s [LOS D]	47 s [LOS D]

Based on the above, increasing the length of the 'All-Red' phase at the Molle Street / Macquarie Street junction will have a negligible impact during the morning peak period due to the effects of signal coordination. There will be a minor impact on the Molle Street approach. During the off-peak and evening peak, when the total cycle time is much lower and the All-Red phase is a greater proportion of the cycle time, there may be increased average delays of up to 6 seconds per vehicle.

3.1.4 Preliminary Cost Estimate

Option 2 involves minor modifications to traffic signal timing only and no new infrastructure.

3.1.5 Summary

The key findings for Option 2 are summarised as follows:

- Providing a left-turn arrow at the Molle Street / Macquarie Street junction is unlikely to be effective as it will only provide a reliable crossing gap once per cycle (up to 120 seconds in the morning peak) and only then if a pedestrian is crossing at the signals
- Increasing the All-Red phase time or providing pedestrian early starts will effectively 'cap' the potential delays for pedestrians at the Rivulet Track crossing point with average delays being a maximum of 35 seconds during the morning peak and 23 seconds during the evening peak
- No specific benefits for cyclists are expected
- There will be a negligible impact on Macquarie Street in the morning peak due to signal coordination, however average delays on the corridor may increase by up to 6 seconds during the off-peak and evening peak periods

3.2 Option 4 –New Crossing Point

The option involves providing a new crossing point on Molle Street on the western (downstream) side of the Collins Street junction. The new crossing would have a similar treatment to the existing crossing on the upstream side of Collins Street, comprising kerb extensions to reduce the crossing distance.

3.2.1 Impacts on Pedestrians

Traffic count data suggests that there are generally more vehicles turning into Collins Street than out of Collins Street, resulting in reduced traffic flow on the downstream side of the junction compared to the upstream side. This difference is more pronounced in the morning peak period, with up to 20% fewer vehicles on Molle Street west of Collins Street.

The traffic counts also suggest that around 20% more pedestrians cross Molle Street on the downstream side of Collins Street than the upstream side, despite the lack of a formal pedestrian crossing at this location. Traffic volumes and pedestrian crossings are presented in Figure 7.

It is further noted that while traffic volumes on Molle Street, downstream of the Collins Street junction, are lower than on the upstream side, there are additional conflict points created by right turns out of Collins Street. That is, pedestrians crossing Molle Street would need to watch for traffic travelling along Molle Street, as well as traffic approaching from Collins Street.

The lack of a formal crossing point compounds sight distance issues which are present due to on-street car parking activity. Pedestrians crossing Molle Street on the downstream side of Collins Street must step out from between parked cars or alternatively cross within the intersection footprint.

Therefore, there is considered an existing safety issue at this junction which could be mitigated by providing a new crossing point on Molle Street, on the downstream side of Collins Street, consisting of kerb outstands similar to the existing crossing.

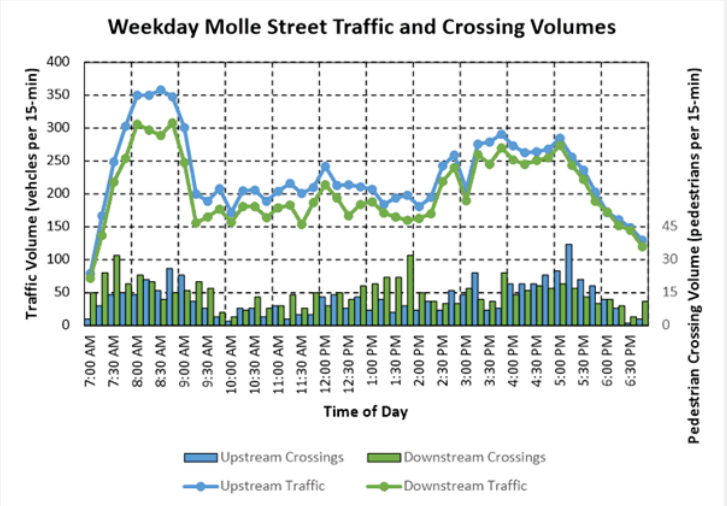

Figure 7 Molle Street Traffic and Pedestrian Crossing Volumes

3.2.2 Impacts on Cyclists

No specific impacts for cyclists are anticipated. Pedestrian safety benefits would be gained for those cyclists who dismount to cross at a formal pedestrian crossing point, which may be a more likely occurrence under this scenario.

3.2.3 Impacts on Traffic

No traffic impacts are anticipated. It is noted that there will be a loss of two on-street car parking spaces, one on either side of Molle Street.

3.2.4 Preliminary Cost Estimate

The preliminary cost estimate for Option 4 is ***$14,000.*** This cost estimate has been developed based on limited information available to GHD including aerial photography, site photos and basic site measurements.

3.2.5 Summary

The key findings for Option 4 are as follows:

- There is demonstrated demand for pedestrian crossings on Molle Street, downstream of Collins Street
- There is an existing pedestrian safety concern at this location due to increased potential conflict points and a lack of formalised crossing treatment
- The proposed crossing would mitigate some of the existing safety concerns for pedestrians at this location
- No specific impacts on either cyclists or traffic are expected except for the loss of two on-street car parking spaces

3.3 Option 7 – Signalise Collins Street Junction

This option involves the signalisation of the Collins Street / Molle Street junction. There are two alternative sub-options with different treatment of the 40 Molle Street property access which are described in the following sections.

Option 7a – Retain the 40 Molle Street Crossover

The 40 Molle Street crossover would be retained and remain as uncontrolled. Vehicles and cyclists would filter into and out of 40 Molle Street as gaps in traffic allow. Pedestrians walking along Molle Street and cyclists using the bicycle lane would have priority at all times across the property access.

A sketch plan is provided in Figure 8.

Figure 8 Option 7a Sketch Plan

Base image source: LISTMap, DPIPWE

Option 7b – Fully signalise 40 Molle Street

The existing crossover would be removed and the 40 Molle Street access included in the design of the intersection including kerb and channel, signal lanterns and linemarking in accordance with signalised intersection design standards. Pedestrians walking along Molle Street would be required to wait and cross when traffic signals allow. Traffic exiting 40 Molle Street would have priority over right turns from Collins Street.

A sketch plan is provided in Figure 9.

Figure 9 Option 7b Sketch Plan

Base image source: LISTMap, DPIPWE

3.3.1 Impacts on Pedestrians

The proposed signalisation would result in further separation of pedestrian and vehicle movements, and therefore an overall improvement to pedestrian safety when crossing the road. In the case of Option 7a, traffic signals may create confusion regarding priority arrangements at the 40 Molle Street access particularly with regard to the Collins Street through movement which is given a green signal, however is required to give way to pedestrians on the footpath.

In contrast, Option 7b provides a higher level of safety for pedestrians at the expense of convenience, as pedestrians would be required to wait at the traffic signals before crossing the 40 Molle Street access when given a green walk signal.

Average delays for pedestrians crossing the road would depend on traffic signal cycling, which is discussed in Section 3.3.3, however under the optimal arrangement average delays for pedestrians would be around 24 seconds in the morning peak and 12 seconds in the afternoon. This represents a significant improvement over the current situation with existing crossing delays averaging 40 seconds in the morning peak and 20-25 seconds in the afternoon.

The change in pedestrian crossing delays on Collins Street throughout a typical weekday is presented in Figure 10.

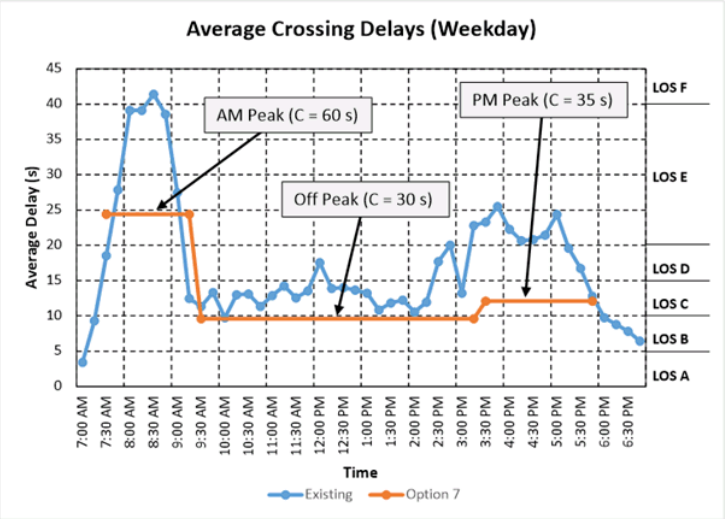

Figure 10 Average Crossing Delays (Weekday)

3.3.2 Impacts on Cyclists

Cyclists would also be required to stop at traffic signals, which would result in a loss of momentum when riding along Molle Street. Cyclists would experience increased difficulty climbing the hill towards Goulburn Street.

In order to improve safety for cyclists in light of the intersection changes, a short bicycle lane should be provided on Collins Street along with advance bicycle boxes at stop lines on both Molle Street and Collins Street. It is noted that there is a relatively high volume of bicycles undertaking the through movement between Collins Street and 40 Molle Street.

Option 7a introduces a significant safety issue for cyclists crossing Molle Street. The traffic signals would result in difficulty picking an appropriate gap in traffic as cyclists would need to 'guess' which signal is shown to each approach. A safe crossing would require cyclists to dismount and cross at the traffic signals which is a major inconvenience on what is a key cycling corridor.

3.3.3 Impacts on Traffic

The signal phasing adopted at the Molle Street / Collins Street intersection has a significant bearing on the performance of this junction. A two-phase arrangement has been adopted whereby Molle Street and Collins Street traffic is separated and runs along with parallel pedestrian crossing phases. Turning traffic must give way to pedestrians crossing the road.

The optimum cycle time is around 30-40 seconds, however the intersection would be coordinated with nearby signalised intersections which operate at around 120 seconds in the morning peak and 70 seconds in the evening peak. Long cycle times create significant delays on Collins Street and the 40 Molle Street access (option 7b only) with queues on Molle Street regularly exceeding the available storage capacity (over 100 metres).

However, there is an option to 'double cycle' the proposed traffic signals so that for each cycle of the surrounding road network, the new intersection runs twice, bringing cycle times closer to the optimum cycle time.

The Molle Street / Collins Street intersection was modelled using SIDRA Intersection 7 for each of Option 7a and 7b under a 'double cycled' signal phasing plan. The results are presented in Table 3.

Table 3 Option 7 SIDRA Intersection Results

Average Delay (s) [Level of Service] | 95th percentile queue length (m)

Intersection Approach	Option 7a		Option 7b	
	AM Peak C = 60 s	PM Peak C = 35 s	AM Peak C = 60 s	PM Peak C = 35 s
40 Molle Street (Northbound)	7 s [A] 2 m	5 s [A] 2 m	28 s [C] 5 m	15 s [B] 3 m
Molle Street (Westbound)	7 s [A] 85 m	9 s [A] 56 m	7 s [A] 85 m	9 s [A] 56 m
Collins Street (Southbound)	34 s [C] 10 m	18 s [B] 9 m	33 s [C] 10 m	17 s [B] 9 m
Intersection Average	***7 s [A]***	***10 s [A]***	***8 s [A]***	***10 s [A]***

Based on Table 3, the traffic signals would perform adequately under either scenario, with reasonable average delays and queuing on Molle Street contained within the available queue storage distance.

It is noted that Option 7a introduces a safety concern for vehicles exiting 40 Molle Street through to Collins. The traffic signals would result in difficulty picking an appropriate gap in traffic as exiting vehicles would need to 'guess' which signal is shown to each approach.

3.3.4 Preliminary Cost Estimate

The preliminary cost estimate for Option 7a is ***$370,000.***

The preliminary cost estimate for Option 7b is ***$450,000.***

These cost estimate have been developed based on limited information available to GHD including aerial photography, site photos and basic site measurements.

3.3.5 Summary

The preferred signalisation option is Option 7b, which incorporates the 40 Molle Street access into the intersection design. Signalising the intersection while retaining the access as an uncontrolled crossover introduces several significant safety concerns for pedestrians, cyclists and general traffic.

The key findings for Option 7b are as follows:

- Improved safety for pedestrians by separating vehicle and pedestrian movements
- Reduced efficiency for cyclists travelling up the hill on Molle Street who would be required to stop at the signals

- Improved safety for cyclists by providing priority for traffic travelling between Collins Street and 40 Molle Street (and the Rivulet Track)
- Reduced delays for pedestrians crossing Molle Street by around 40% during peak times
- Minimal impacts on general traffic travelling on Molle Street with average delays of around 7 seconds in the morning and 9 seconds in the afternoon (LOS A)

4. Conclusions

This report has investigated a range of options for improving pedestrian and cyclist safety crossing Molle Street at the Molle Street / Collins Street junction. This location is a key pedestrian and cycling link between the Hobart CBD and the Hobart Rivulet Track. Current issues include:

- Poor performance for pedestrians crossing Molle Street in the morning and evening peak periods (LOS F and LOS E respectively)
- Safety issues for pedestrians crossing Molle Street on the western side of Collins Street
- Safety issues for cyclists exiting the 40 Molle Street site, crossing Molle Street and continuing along Collins Street towards the Hobart CBD

The following options were considered to have benefits and were assessed in detail:

Option 2 – Improve Gap Creation

Improve gap creation at the Molle Street / Collins Street junction by adjusting signal phasing at the Molle Street / Macquarie Street junction.

The key findings for Option 2 are summarised as follows:

- Providing a left-turn arrow at the Molle Street / Macquarie Street junction is unlikely to be effective as it will only provide a reliable crossing gap once per cycle (up to 120 seconds in the morning peak) and only then if a pedestrian is crossing at the signals
- Increasing the All-Red phase time or providing pedestrian early starts will effectively 'cap' the potential delays for pedestrians at the Rivulet Track crossing point with average delays being a maximum of 35 seconds during the morning peak and 23 seconds during the evening peak
- No specific benefits for cyclists are expected
- There will be a negligible impact on Macquarie Street in the morning peak due to signal coordination, however average delays on the corridor may increase by up to 6 seconds during the off-peak and evening peak periods

Option 4 – New Crossing Point

New crossing point on Molle Street on the western side of the Collins Street junction to match the existing crossing.

The key findings for Option 4 are as follows:

- There is demonstrated demand for pedestrian crossings on Molle Street, downstream of Collins Street
- There is an existing pedestrian safety concern at this location due to increased potential conflict points and a lack of formalised crossing treatment

- The proposed crossing would mitigate some of the existing safety concerns for pedestrians at this location
- No specific impacts on either cyclists or traffic are expected except for the loss of two on-street car parking spaces
- Preliminary cost estimate of $14,000

Option 7 – Signalise Collins Street Junction

Signalise the Molle Street / Collins Street junction with the 40 Molle Street access being retained as an uncontrolled crossover or incorporated into the traffic signals.

The preferred signalisation option is Option 7b, which incorporates the 40 Molle Street access into the intersection design. Signalising the intersection while retaining the access as an uncontrolled crossover introduces several significant safety concerns for pedestrians, cyclists and general traffic.

The key findings for Option 7b are as follows:

- Improved safety for pedestrians by separating vehicle and pedestrian movements
- Reduced efficiency for cyclists travelling up the hill on Molle Street who would be required to stop at the signals
- Improved safety for cyclists by providing priority for traffic travelling between Collins Street and 40 Molle Street (and the Rivulet Track)
- Reduced delays for pedestrians crossing Molle Street by around 40% during peak times
- Minimal impacts on general traffic travelling on Molle Street with average delays of around 7 seconds in the morning and 9 seconds in the afternoon (LOS A)
- Preliminary cost estimate of $450,000

Summary Table

The findings are summarised in Table 4 below.

Table 4 Summary of Findings

Impacts on	Option 2 Improve Gap Creation	Option 4 New Crossing Point	Option 7 Signalise Junction
Pedestrians	Cap on maximum delays (35 s in AM and 23 s in PM)	Safety improvements only (no change in crossing delays)	Reduce average crossing delays by up to 40% during peak times
Cyclists	No change	No change	Required to stop at signals
Vehicles	+6 seconds (PM) on Maquarie Street	No change	+7 seconds (AM) +9 seconds (PM) on Molle Street
Cost Estimate	Minimal	$14,000	$450,000

4.1 Recommendations

Based on the findings of this review it is recommended that:

- In the short-term, kerb outstands be provided on Molle Street immediately west of the Collins Street junction to improve safety for pedestrians (and cyclists) crossing at this location.

It is also recommended that further design investigations into signalisation of Molle Street / Collins Street / 40 Molle Street access be undertaken. This report has shown that there could be significant benefits gained for pedestrian and cyclist safety crossing Molle Street as a result of signalisation, however there are a number of design issues relating to the treatment of the property access which need to be considered.

GHD

23 Paterson Street
T: 61 3 6332 5500 F: 61 3 6332 5555 E: lstmail@ghd.com

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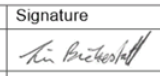
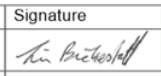
3218260-46459/https://projects.ghd.com/oc/Tasmania/mollestreetcollinsst/Delivery/Documents/3218260-REP_Rivulet_Track_Molle_St_Crossing_Report_reupload.docx

Document Status

Revision	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
0	M. Petrusma	T. Bickerstaff		T. Bickerstaff		16.3.17

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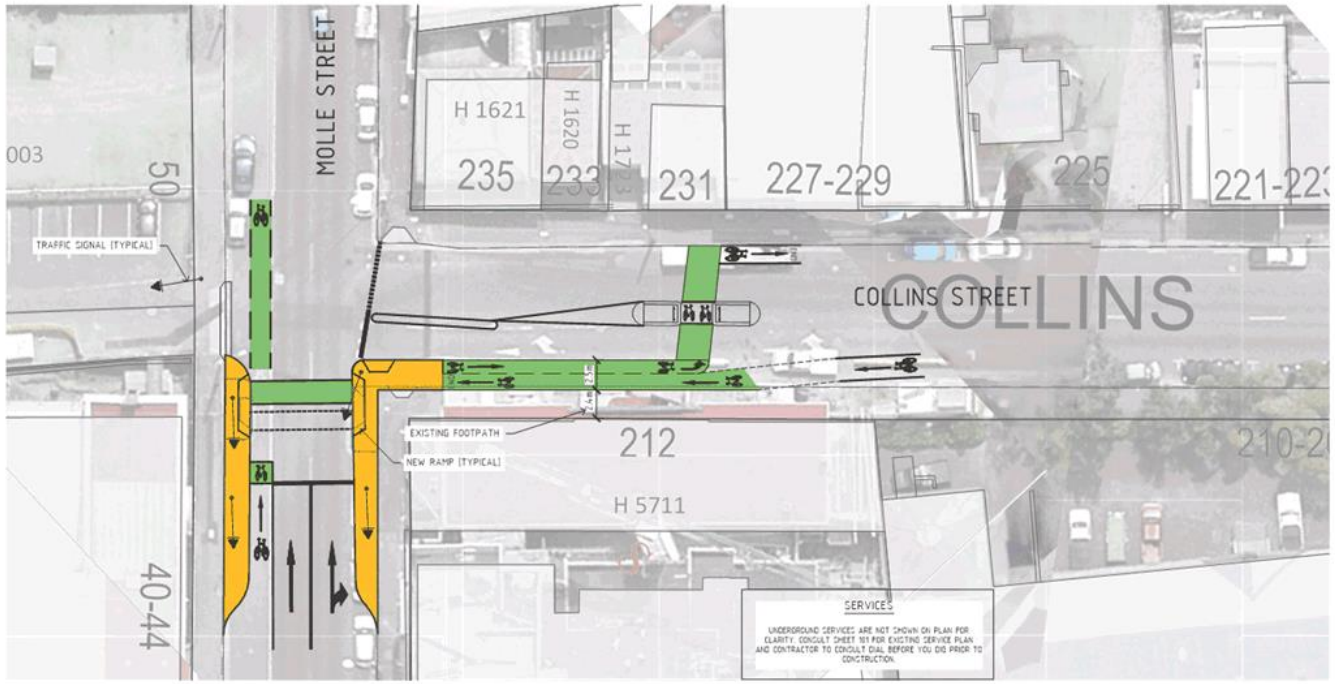
Appendix B – Signalisation Concept Designs



PROPOSED PLAN OPTION 1
Scale 1:300

CONCEPT

City of HOBART

SIGNALISED PEDESTRIAN / CYCLIST CROSSING - MOLLE STREET AT COLLINS STREET

CONCEPT PLAN OPTION 1 - PEDESTRIAN AND CYCLIST OPERATED SIGNALS

TRAFFIC ENGINEERING UNIT

EG

RFS19-0039

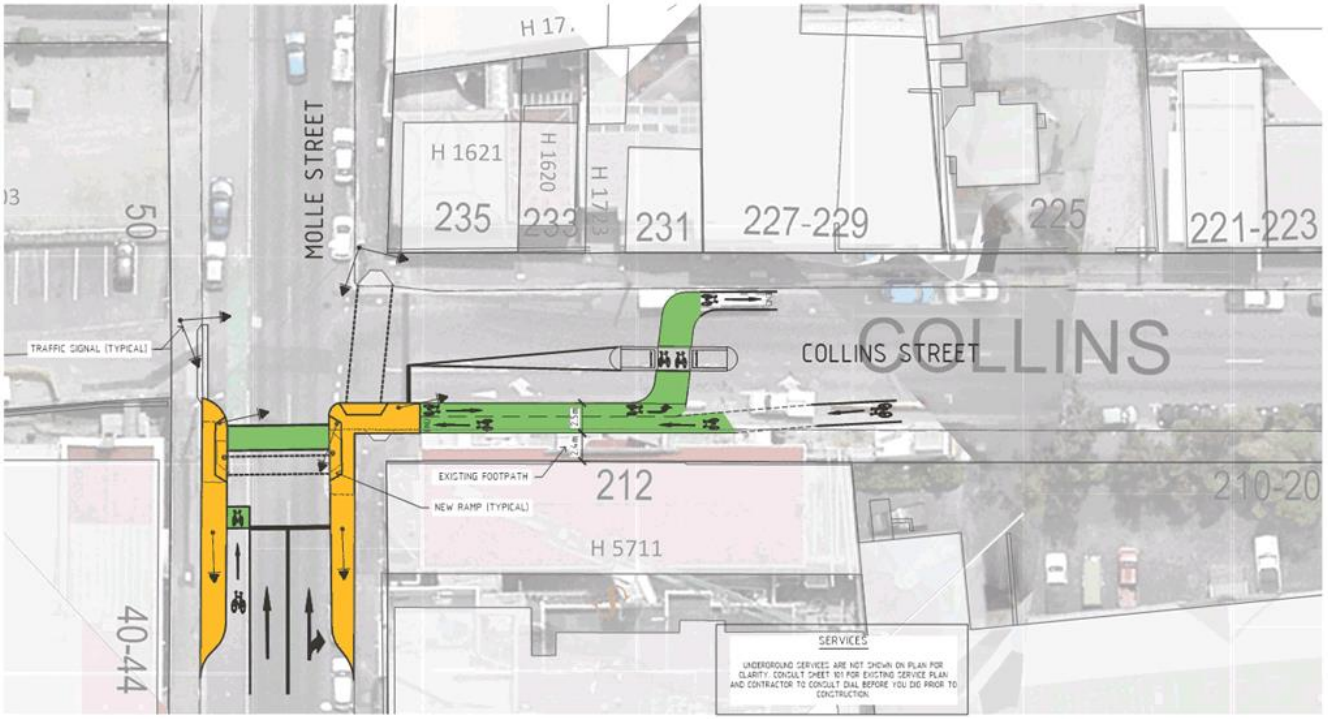
A3

14/05/2019

1:300

201

A



PROPOSED PLAN OPTION 2
Scale 1:300

LEGEND		
BICYCLE SYMBOL	BIKE	10
END SYMBOL	END	2
GREEN SURFACE		105m²
NEW ASPHALT FOOTPATH		9m²

CONCEPT

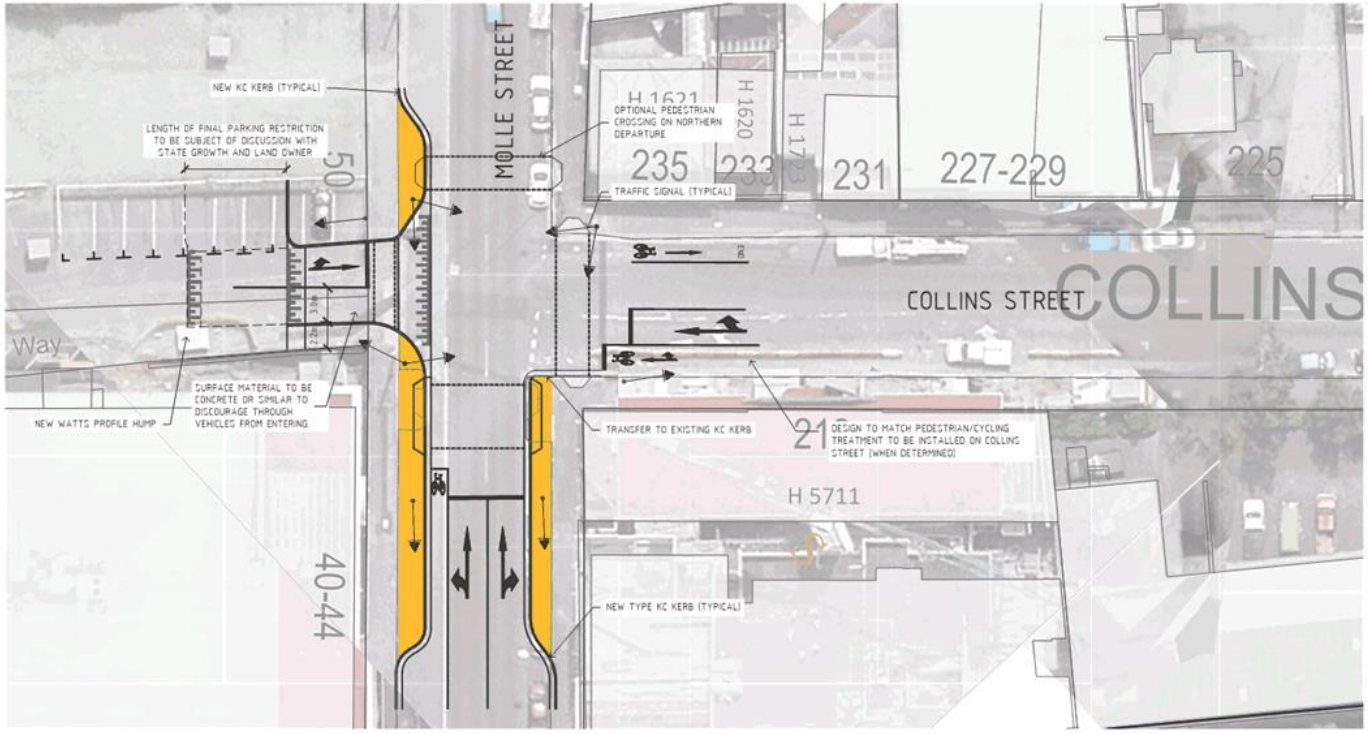
City of HOBART

SIGNALISED PEDESTRIAN / CYCLIST CROSSING - MOLLE STREET AT COLLINS STREET

CONCEPT PLAN OPTION 2 - SIGNALISED "T" INTERSECTION

TRAFFIC ENGINEERING UNIT

EG | RFS19-0039 | A3 | 14/05/2019 | 1:300 | 202 | A



PROPOSED PLAN OPTION 3
Scale 1:300

LEGEND		
BICYCLE SYMBOL	BIKE	3
END SYMBOL	END	1
NEW ASPHALT FOOTPATH		110m²

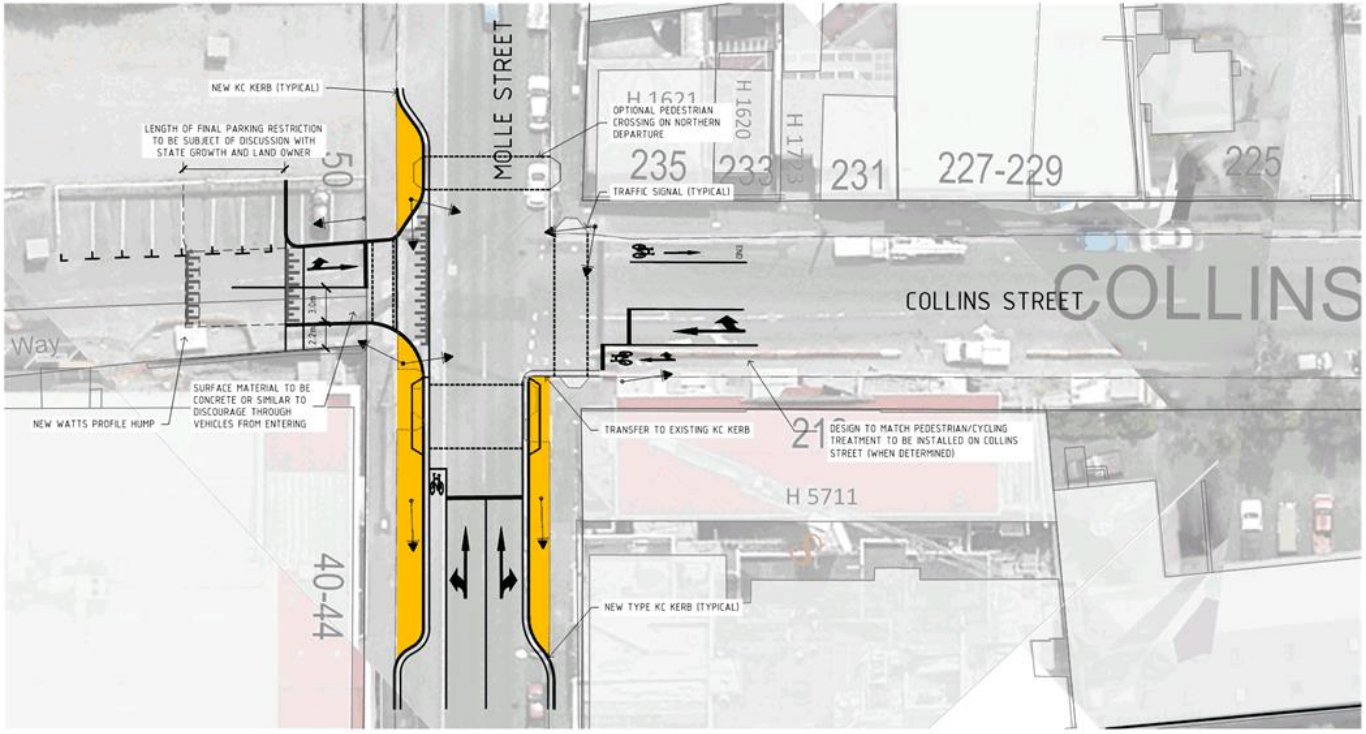
SERVICES
UNDERGROUND SERVICES ARE NOT SHOWN ON PLAN FOR CLARITY. CONSULT SHEET 101 FOR EXISTING SERVICE PLAN AND CONTRACTOR TO CONSULT DIAL BEFORE YOU DIG PRIOR TO CONSTRUCTION.

CONCEPT

City of HOBART

SIGNALISED PEDESTRIAN / CYCLIST CROSSING - MOLLE STREET AT COLLINS STREET
CONCEPT PLAN OPTION4 -FULL SIGNALISATION (RELOCATED WATTS PROFILE)
TRAFFIC ENGINEERING UNIT

DRAWN	EG	RFS19-0039	A3
DATE	16/05/2019	SHEET NUMBER	REVISION
SCALE	1:300	203	A



PROPOSED PLAN OPTION 3
Scale 1:300

LEGEND		
BICYCLE SYMBOL	BIKE	3
END SYMBOL	END	1
NEW ASPHALT FOOTPATH		110m²

SERVICES
UNDERGROUND SERVICES ARE NOT SHOWN ON PLAN FOR CLARITY. CONSULT SHEET 101 FOR EXISTING SERVICE PLAN AND CONTRACTOR TO CONSULT DIAL BEFORE YOU DIG PRIOR TO CONSTRUCTION.

REV	DESCRIPTION	DATE
A	CONCEPT DESIGN FOR REVIEW	16/05/2019

CONCEPT

City of HOBART
HOBART COUNCIL CENTRE
16 ELIZABETH STREET
GPO BOX 503

PROJECT DESCRIPTION: SIGNALISED PEDESTRIAN / CYCLIST CROSSING - MOLLE STREET AT COLLINS STREET
DRAWING TITLE: CONCEPT PLAN OPTION4 -FULL SIGNALISATION (RELOCATED WATTS PROFILE)
AUTHOR: TRAFFIC ENGINEERING UNIT

DRAWN	RFS NUMBER	SHEET SIZE
EG	RFS19-0039	A3
CHECKED	PLOT LOCATION	
-		MOLLE ST_V0.dwg
DATE	SHEET NUMBER	REVISION
16/05/2019	203	A
SCALE 1:300		

Landowner notification declaration

Molle and Collins Street traffic signals
(PLN-21-192 – Original) – Resubmission PLN-21-TBC

17 May 2021

City Planning – Planning permit assessment
City of Hobart
Attn. – Deanne Lang

I refer to planning permit lodged on March 24th 2021 (PLN-21-192 Original) which is now the subject of a resubmission, in respect of the proposed traffic signal installation at the junction of Molle and Collins streets, Hobart.

In respect of the notification of the owners at 50 Molle Street, and the proposed boundary adjustment on that property, I declare that the property owner has been notified and is supportive of the proposal.

The City of Hobart has correspondence on this matter, including a letter from the property owners legal representative, dated 2 June 2020, confirming the support.

Regards

Stuart Baird
Senior Transport Engineer | City Planning Division
16 Elizabeth Street, Hobart, Tasmania, Australia, 7000

Planning: #232052

Property

40-50 MOLLE STREET HOBART TAS 7000

People

Applicant
*
STUART BAIRD
16 ELIZABETH STREET
HOBART TAS 7000
6238 2955
bairds@hobartcity.com.au

Owner
*
City of Hobart

16 Elizabeth Street
GPO Box 503
HOBART TAS 7001
6238 2955
CoH@hobartcity.com.au

Entered By
STUART BAIRD
16 ELIZABETH STREET
HOBART TAS 7000
6238 2955
bairds@hobartcity.com.au

Use

Utilities

Details

Have you obtained pre application advice?

- : Yes

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

PLN-21-192

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)?
*

Roadway, footpath, parking

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

Installation of kerb bulbings and traffic signals to junction

Estimated cost of development
*

400000.00

Existing floor area (m2) | Proposed floor area (m2) | Site area (m2)

Carparking on Site

Total parking spaces: 0 | Existing parking spaces: 6 | N/A | Other (no selection chosen)

Hours of Business

Are the proposed hours of business different from the existing? - No

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

	Existing From	Existing To	Proposed From	Proposed To
Monday to Friday			Monday to Friday	
Saturday			Saturday	
Sunday			Sunday	

Proposed Mon-Fri hours are the same as existing

Proposed Sat-Sun hours are the same as existing

Number of Employees

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

Proposed number of employees: 0 | Existing number of employees: 0

Goods Deliveries

Will there be any commercial vehicles accessing the site? - Yes

Type of Vehicle	Trips per Week
Very Large (Semi trailer)	
Large	
Medium	more than 6
Small	

Outdoor storage / seating / number of beds

Is outdoor storage proposed? - No

Other Details

Does the application include signage?
*
Yes

Please be advised that you are required to lodge plans of the sign. The plans should show: dimensions, location, colours, wording, method of illumination, does it flash, method of fixing to wall, etc.

How many signs, please enter 0 if there are none involved in this application?
*
5

Tasmania Heritage Register
Is this property on the Tasmanian Heritage Register?
No

Documents

Required Documents

Title (Folio text and Plan and Schedule of Easements)
*
Attachment 3 - Land Tiles -including LIST plans 17-5-21 Resubmit.pdf

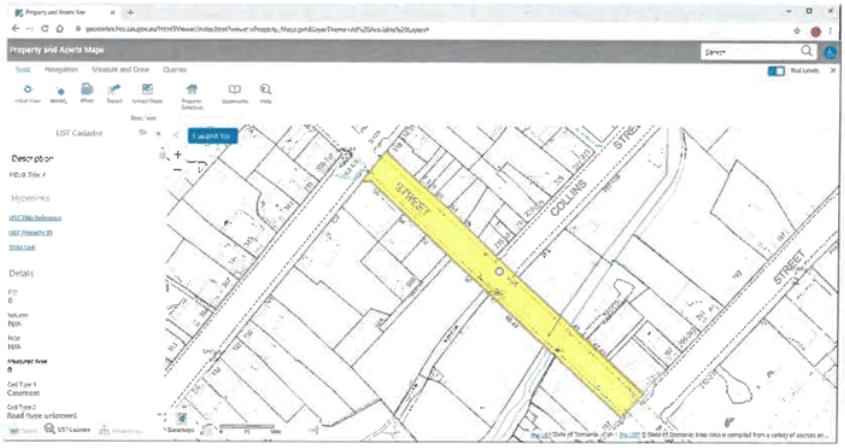
Plans (proposed, existing)
*
Attachment 4 - Concept Drawings - Resubmission 25-5-21.pdf

GM or Crown consent
Attachment 1 -GMC-21-21 - COLLINS STREET HOBART - Land Owner Consent to Lodge DA-17-5-21 Resubmit.pdf

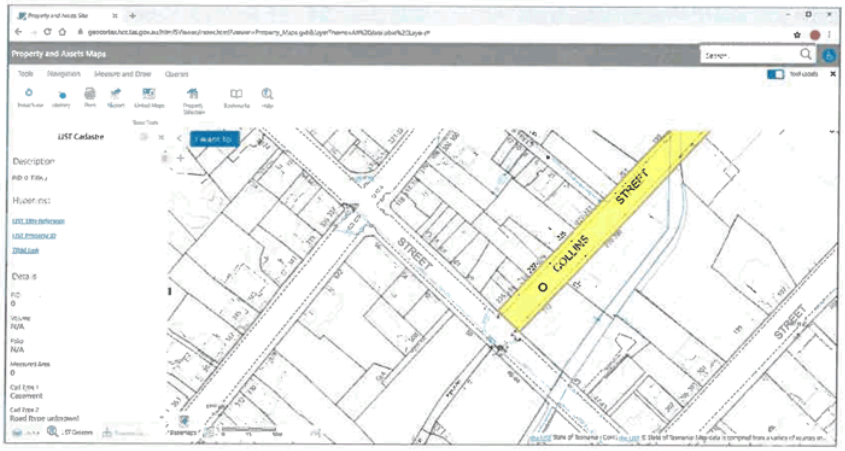
Covering Letter
Collins Street and Molle Street Hobart - Junction Traffic Signals - DA Cover letter 17 05 2021.pdf

Screen Capture – The List - Title Information (No Titles available)

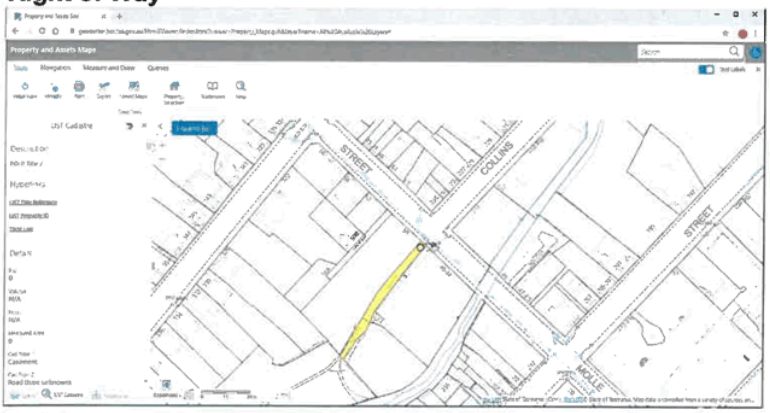
Molle Street



Collins Street

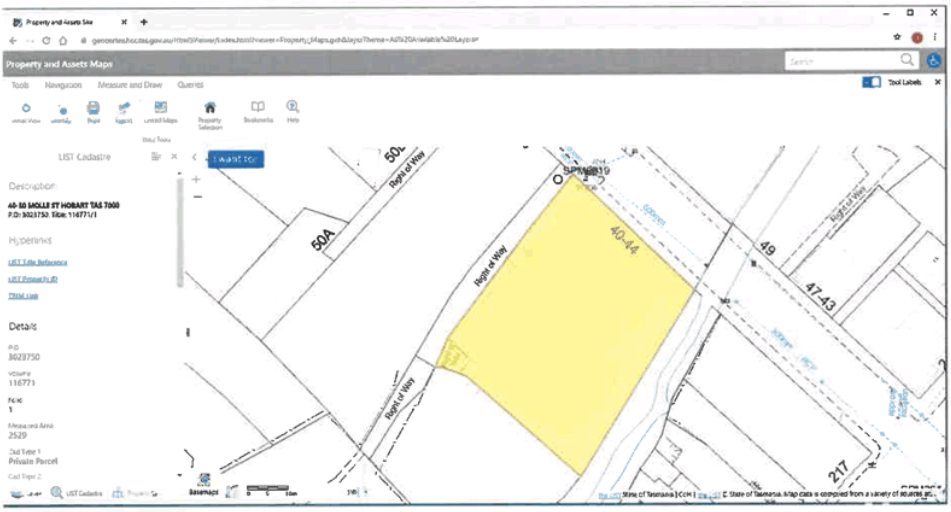


Right of Way

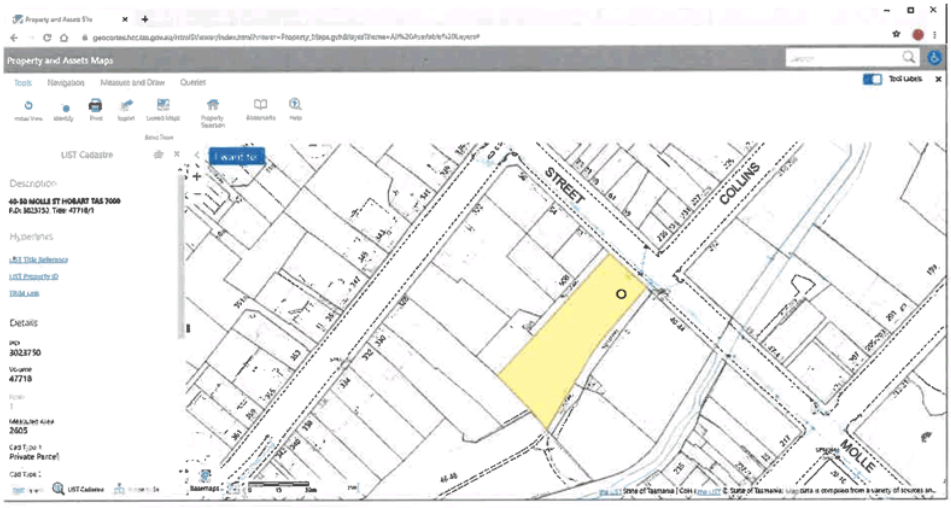


Screen Capture – The List (Titles available)

40-44 Molle Street (P.116771)



50 Molle Street (D 47718)



RESULT OF SEARCH

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

SEARCH OF TORRENS TITLE

VOLUME	FOLIO
116771	1
EDITION	DATE OF ISSUE
6	01-Jul-2019

SEARCH DATE : 12-Feb-2021
SEARCH TIME : 09.27 AM

DESCRIPTION OF LAND

City of HOBART
Lot 1 on Plan 116771
Being the land firstly described in Conveyance No. 61/9588
Derivation : Part of 6-1-20 Granted to G. F. Read
Derived from W2781

SCHEDULE 1

C634827 TRANSFER to WOOSTER AVENUE PTY LTD Registered 12-Sep-2005 at 12.01 PM

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
21/9593 CONVEYANCE: Benefiting Easement: Right to pass and repass over the Roadway shown on Plan No. 116771
21/9593 CONVEYANCE BURDENING EASEMENT: RIGHT TO USE for Archibald Richard Park Right of Way 'B' shown on Plan No. 116771 for the purpose of turning vehicles
E61310 BURDENING ELECTRICITY INFRASTRUCTURE EASEMENT with the benefit of a restriction as to user of land in favour of Tasmanian Networks Pty Ltd over the land marked Electricity Infrastructure Easement on Plan 116771 (Subject to Provisions) Registered 01-Jul-2019 at noon
C761622 MORTGAGE to National Australia Bank Limited Registered 09-Jan-2007 at noon

UNREGISTERED DEALINGS AND NOTATIONS

140277 PLAN Lodged by WALLACE WILK & WEB on 21-Oct-2003 BP: 140277

RESULT OF SEARCH

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

SEARCH OF TORRENS TITLE

VOLUME	FOLIO
116771	2
EDITION	DATE OF ISSUE
5	09-Jan-2007

SEARCH DATE : 12-Feb-2021
SEARCH TIME : 09.28 AM

DESCRIPTION OF LAND

City of HOBART
Lot 2 on Plan 116771
Being the land secondly described in Conveyance No. 61/9588
Derivation : Part of 6-1-20 Granted to G. F. Read
Derived from W2781

SCHEDULE 1

C634827 TRANSFER to WOOSTER AVENUE PTY LTD Registered 12-Sep-2005 at 12.01 PM

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
C761622 MORTGAGE to National Australia Bank Limited Registered 09-Jan-2007 at noon

UNREGISTERED DEALINGS AND NOTATIONS

140277 PLAN Lodged by WALLACE WILK & WEB on 21-Oct-2003 BP: 140277

FOLIO PLAN

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

FILE NUMBER W.2781

GRANTEE

PART OF 6-1-20
GTD. TO GEORGE FREDERICK READ

CONVERSION PLAN

LOCATION
CITY OF HOBART

CONVERTED FROM 61/9588 (14/5 D.O.)

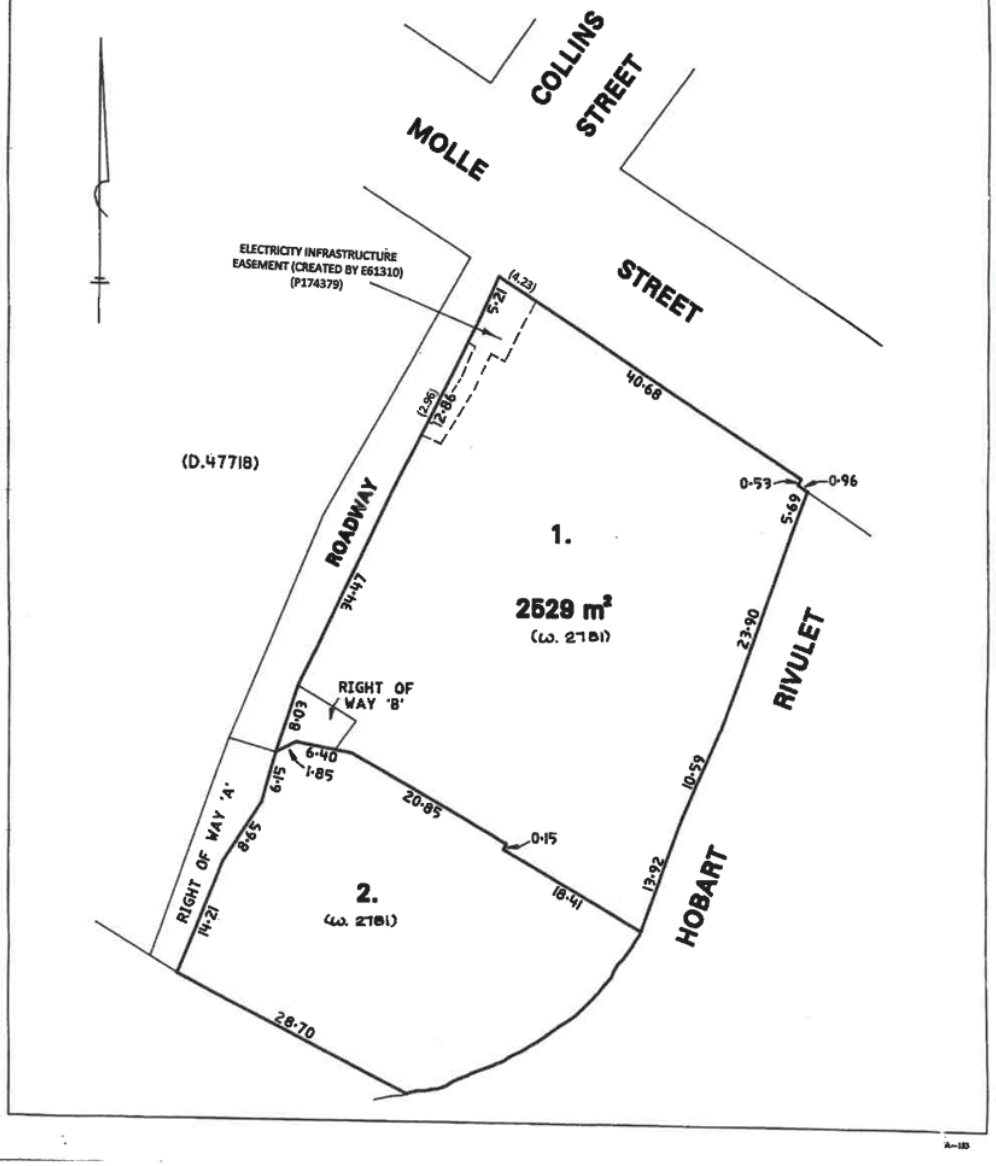
NOT TO SCALE LENGTHS IN METRES

Registered Number
P.116771

APPROVED 9 MAR 1995
Recorder of Titles

MAPSHEET MUNICIPAL CODE No. 21 | LAST UPI No. | ALL EXISTING SURVEY NUMBERS TO BE CROSS REFERENCED ON THIS PLAN | DRAWN DJB

SKETCH BY WAY OF ILLUSTRATION ONLY
"EXCEPTED LANDS"



RESULT OF SEARCH

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

SEARCH OF TORRENS TITLE

VOLUME	FOLIO
47718	1
EDITION	DATE OF ISSUE
6	01-Jul-2019

SEARCH DATE : 12-Feb-2021
SEARCH TIME : 09.43 AM

DESCRIPTION OF LAND

City of HOBART
Lot 1 on Diagram 47718
Derivation : Part of 6A-1R-20Ps. Gtd. to G.F. Read
Prior CT 2884/52

SCHEDULE 1

C634827 TRANSFER to WOOSTER AVENUE PTY LTD Registered 12-Sep-2005 at 12.01 PM

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
BENEFITING EASEMENT - Right of Carriageway and driftway through over and along the Roadways on Diagram NO. 47718
E61310 BURDENING ELECTRICITY INFRASTRUCTURE EASEMENT with the benefit of a restriction as to user of land in favour of Tasmanian Networks Pty Ltd over the land marked Electricity Infrastructure Easement on Diagram 47718 (Subject to Provisions) Registered 01-Jul-2019 at noon
C761622 MORTGAGE to National Australia Bank Limited Registered 09-Jan-2007 at noon

UNREGISTERED DEALINGS AND NOTATIONS

140277 PLAN Lodged by WALLACE WILK & WEB on 21-Oct-2003 BP: 140277

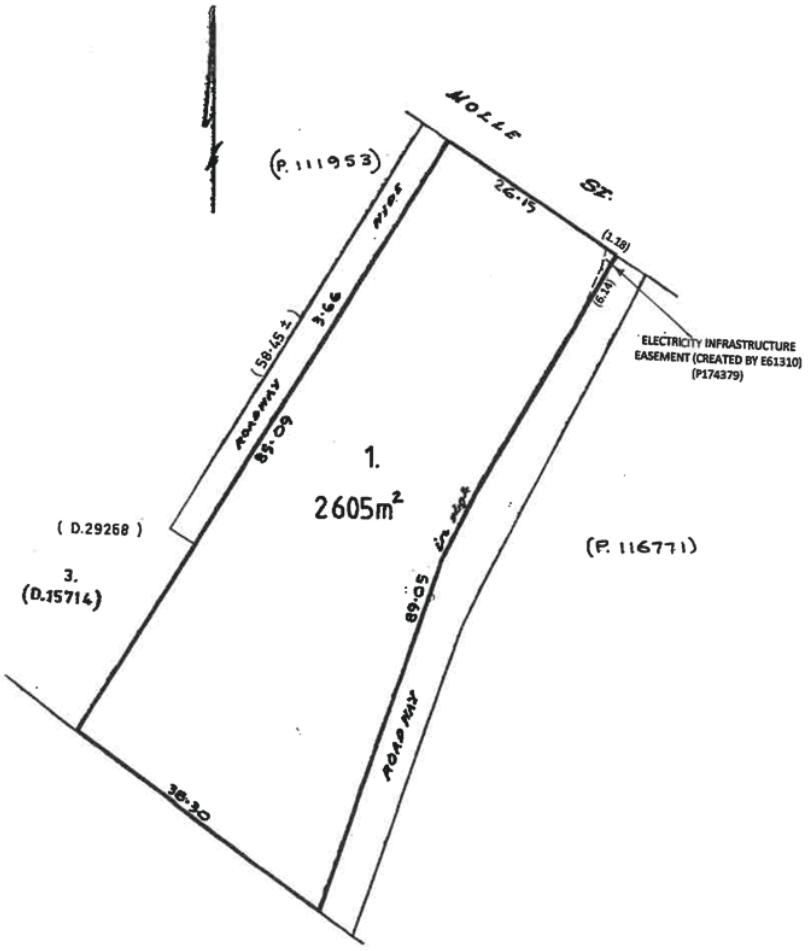
FOLIO PLAN

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

Owner:	PLAN OF TITLE of land situated in the HOBART SEC.L.3	Registered Number: D47718
Title Reference: C.T. 3884 - 52	COMPILED FROM 5-27 H.	Approved ..... Recorder of Titles
Grantee:	SCALE 1: 500 MEASUREMENTS IN METRES	



L20

Application Referral Environmental Health - Response

From:	09/06/2021 - Andrew Choveaux - Senior Environmental Health Officer - Assess ESA
Recommendation:	Proposal is acceptable subject to conditions.
Date Completed:	
Address:	40 - 50 MOLLE STREET, HOBART ADJACENT ROAD RESERVE
Proposal:	Roadworks including Traffic Signals, and Subdivision
Application No:	PLN-21-375
Assessment Officer:	Deanne Lang,

Referral Officer comments:

Code Application:

Code (delete that which does not apply)	Applicable (check that the Code applies to the use or development E2.2, E9.2 or E.23.2)	Exempt (check the exemptions E2.4, E9.4 or E23.4)	Permitted (the use or development is permitted if the relevant acceptable solutions are met)	Discretionary (identify the relevant acceptable solution which has not been met and which thus makes the application discretionary)
E2.0 Potentially Contaminated Land	E2.0 PCL Code applies	No Exemptions were submitted	No Acceptable solutions were submitted	An ESA was submitted

POTENTIALLY CONTAMINATED LAND CODE

Clause (delete that which does not apply)	**Discussion** (provide brief commentary on your assessment of the application in relation to the application of the Code)
E2.5 Use Standards	N/A
E2.6 Development Standards E2.6.1 Subdivision	Proposed development is a subdivision
E2.6 Development Standards E2.6.2 Excavation	Excavation applies An ESA which addressed excavation has been submitted

Please Advise the EHO at any stage if:

Contaminated Land

• Changes to the original proposed use or development are made. Examples may include; excavation of greater than 1m3, sealed surfaces to be left unsealed, residential use proposed on ground floor.

- Requested reports are submitted.

Submission to Planning Authority Notice

Council Planning Permit No.	PLN-21-375	**Council notice date**	4/06/2021
TasWater details			
TasWater Reference No.	TWDA 2021/00927-HCC	**Date of response**	18/06/2021
TasWater Contact	Elio Ross **Phone No.**	0467 874 330	
Response issued to			
Council name	CITY OF HOBART		
Contact details	coh@hobartcity.com.au		
Development details			
Address	40-50 MOLLE ST, HOBART	**Property ID (PID)**	3023750
Description of development	Road Works, Alterations to Traffic Circulation, Associated Hydraulic Instructure, Signage and Subdivision		

Schedule of drawings/documents

Prepared by	Drawing/document No.	Revision No.	Date of Issue
Sustainable Engineering	HCC-MSIG-C1000, C1005, C1010, C1020, C1101, C1102, C1200, C1250, C1300, C1301, C1302, C1350, C1351, C1352, C1353, C1400, C1401, C1701, C1702, C1751, C1752, C1801, C1803.	B	04/03/2021

Conditions

Pursuant to the *Water and Sewerage Industry Act* 2008 (TAS) Section 56P(1) TasWater imposes the following conditions on the permit for this application, in the event if that TasWater infrastructure negatively impacted or required to be replaced, realined or relocacted due to the porposed works the following conditions will apply:

TASWATER ASSET CREATION & INFRASTRUCTURE WORKS

1. Ground levels over the TasWater assets and/or easements must not be altered without the approval of TasWater.
2. In the event that the proposed works will result in the existing ground levels over TasWater's infrastructure being altered such that these assets will be required to be relaid or realigned to comply with TasWater's standards for minimum cover over its pipelines the following will apply;
   a. Plans must be submitted with an application for Engineering Design Approval showing all existing, redundant and/or proposed water and sewerage mains.
   b. Prior to applying for a Permit to Construct the new infrastructure, the developer must obtain from TasWater Engineering Design Approval for the new TasWater infrastructure. The application for Engineering Design Approval must include engineering design plans prepared by a suitably qualified person showing the hydraulic design requirements for new water and sewerage infrastructure to TasWater's satisfaction.
   c. Prior to works commencing, a Permit to Construct must be applied for and issued by TasWater. All infrastructure works must be inspected by TasWater and be to TasWater's satisfaction.
   d. In addition to any other conditions in this permit, all works must be constructed under the supervision of a suitably qualified person in accordance with TasWater's requirements.
   e. Prior to the issue of a Certificate of Practical Completion, any, extensions, alterations or upgrades

to TasWater's water and sewerage infrastructure required due to the development are to be constructed at the expense of the developer to the satisfaction of TasWater, with live connections performed by TasWater.

f. After testing/disinfection, to TasWater's requirements, of newly created works, the developer must apply to TasWater for connection of these works to existing TasWater infrastructure, at the developer's cost.

g. At practical completion of the water and sewerage works the developer must obtain a Certificate of Practical Completion from TasWater for the works that will be transferred to TasWater. To obtain a Certificate of Practical Completion:

   I. Written confirmation from the supervising suitably qualified person certifying that the works have been constructed in accordance with the TasWater approved plans and specifications and that the appropriate level of workmanship has been achieved;

   II. A request for a joint on-site inspection with TasWater's authorised representative must be made;

   III. Work As Constructed drawings and documentation must be prepared by a suitably qualified person to TasWater's satisfaction and forwarded to TasWater.

h. After the Certificate of Practical Completion has been issued, a 12 month defects liability period applies to this infrastructure. During this period all defects must be rectified at the developer's cost and to the satisfaction of TasWater. A further 12 month defects liability period may be applied to defects after rectification. TasWater may, at its discretion, undertake rectification of any defects at the developer's cost. Upon completion, of the defects liability period the developer must request TasWater to issue a "Certificate of Final Acceptance". The newly constructed infrastructure will be transferred to TasWater upon issue of this certificate and TasWater will release any security held for the defects liability period.

i. The developer must take all precautions to protect the 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.

j. Ground levels over the TasWater assets and/or easements must not be altered without the written approval of TasWater.

k. A construction management plan must be submitted with the application for TasWater Engineering Design Approval. The construction management plan must detail how the new TasWater infrastructure will be constructed while maintaining current levels of services provided by TasWater to the community. The construction plan must also include a risk assessment and contingency plans covering major risks to TasWater during any works. The construction plan must be to the satisfaction of TasWater prior to TasWater's Engineering Design Approval being issued.

DEVELOPMENT ASSESSMENT FEES

3. The applicant or landowner as the case may be, must pay a development assessment fee of $351.28, 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
http://www.taswater.com.au/Development/Development-Standards

For application forms please visit http://www.taswater.com.au/Development/Forms

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.
A copy of the GIS is included in email with this notice and should aid in updating of the documentation. 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.

Declaration

The drawings/documents and conditions stated above constitute TasWater's Submission to Planning Authority Notice.

Authorised by

Jason Taylor
Development Assessment Manager

TasWater Contact Details			
Phone	13 6992	Email	development@taswater.com.au
Mail	GPO Box 1393 Hobart TAS 7001	Web	www.taswater.com.au

7.1.3 35 MELVILLE STREET, HOBART - ALTERATIONS TO PREVIOUSLY APPROVED DEVELOPMENT PLN-21-351 - FILE REF: F21/73423

Address:	35 Melville Street, Hobart
Proposal:	Alterations to Previously Approved Development
Expiry Date:	10 August 2021
Extension of Time:	Not applicable
Author:	Tristan Widdowson

RECOMMENDATION

That pursuant to the *Hobart Interim Planning Scheme 2015*, the Council refuse the application for alterations to previously approved development at 35 Melville Street, Hobart 7000 for the following reasons:

1 The proposal does not meet the acceptable solution or the performance criterion with respect to clause E13.7.2 A1 or P1 (a) of the *Hobart Interim Planning Scheme 2015* because it will result in the loss of historic cultural heritage significance to the place through its incompatible design including its height, scale, bulk, form, siting, colours and finishes.

2 The proposal does not meet the acceptable solution or the performance criterion with respect to clause E13.7.2 P2 (a) to (d) of the *Hobart Interim Planning Scheme 2015* because it will not be subservient and complementary to the listed place due to its scale, bulk, built form, setback from frontage, siting with respect to listed elements.

Attachment A:	PLN-21-351 - 35 MELVILLE STREET HOBART TAS 7000 - Planning Committee or Delegated Report ⇩
Attachment B:	DA-21-40392 PLN-21-351 - 35 MELVILLE STREET HOBART TAS 7000 - CPC Agenda Documents ⇩

Attachment C: PLN-21-351 - 35 MELVILLE STREET HOBART TAS 7000 -Planning Referral Officer Cultural Heritage Report ⇩

City of HOBART

APPLICATION UNDER HOBART INTERIM PLANNING SCHEME 2015

Type of Report:	Committee
Council:	9 August 2021
Expiry Date:	10 August 2021
Application No:	PLN-21-351
Address:	35 MELVILLE STREET , HOBART
Applicant:	Derek Rolls 115 Allambie Road
Proposal:	Alterations to Previously Approved Development
Representations:	Four
Performance criteria:	Use, Potentially Contaminated Land Code, Parking and Access Code, Historic Heritage Code and Signs Code

1. Executive Summary

1.1 Planning approval is sought for Alterations to Previously Approved Development at 35 Melville Street, Hobart.

1.2 The proposal is for alterations to the previously approved application (PLN-20-723), which was for Partial Demolition, Alterations, Extension, Signage and Change of Use to Hotel Industry at 35 Melville Street, Hobart.

The previously approved application includes the following:

- *Partial demolition and alteration to the front section of the building to facilitate improved access and entrance platform lift, significant planting, a small entrance wall sign, decking areas with new timber balustrading and alterations to windows and doors responding to the internal layout. The exterior brick work is to feature a painted finish.*

- *Significant internal alterations and demolition to facilitate a new lounge bar area with booths on ground floor level with a kitchen, cool room and 25m2 storeroom addition. The upper level is to be office spaces and a function room.*

- *The rear of the venue will feature a decked beer garden area bordered by planter boxes and substantially covered with an opening roof structure.*

- *The rear bitumen area of the site will include 7 car parking spaces, loading bay, 8 bike racks in addition to the 4 included in the storeroom.*

The proposed alterations to previous approval include:

- Increase in the area of the beer garden from approximately 93m2 to 150m2 and for it to be fully enclosed with timber slatted cladding and a polycarbonate roof, a smaller central section will have a retractable roof.

- Minor variation to the internal layout and to the rear extension housing the kitchen store and cool room.

- Removal of all car parking from the rear of the site with the area to be a loading zone only. A landscaped buffer is to be included along the majority of the rear boundary with substantial screen planting proposed.

- Alterations to the entrance design to facilitate a small glass and steel lift for the provision of mobility disability access.

The proposal does not seek to alter the existing approved operating hours of:

Monday – Sunday
Garden Bar: 11:00am – 10:00pm
Lounge: 11:00am – 12:00am

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

1.3.1 Commercial Zone - Use
1.3.2 Potentially Contaminated Land Code - Excavation
1.3.3 Parking and Access Code - Number of parking spaces, Vehicle passing, Facilities for commercial vehicles
1.3.4 Historic Heritage Code - Heritage Place and Archaeology
1.3.5 Signs Code - Signs on Heritage Places

1.4 Four(4) representations objecting to the proposal were received within the statutory advertising period between 22 June to the 6 July 2021.

1.5 The proposal is recommended for refusal.

1.6 The final decision is delegated to the Council, because it is recommended for refusal.

2. Site Detail

2.1 The 809m2 site is in close proximity to midtown precinct of Elizabeth Street and contains an existing 1920s house that has been subject to various additions to the rear and most recently been used as office space. To the rear of the site is a large open bitumen parking area. The site to rear adjoins residential apartment blocks, to the north is a significant large scale heritage listed building used for offices and to the south private commercial parking area. Opposite the site is the under construction University of Tasmania Student Accommodation complex and vacant car park site.

2.2

Figure 1: GIS Map Image 1:2000

2.3

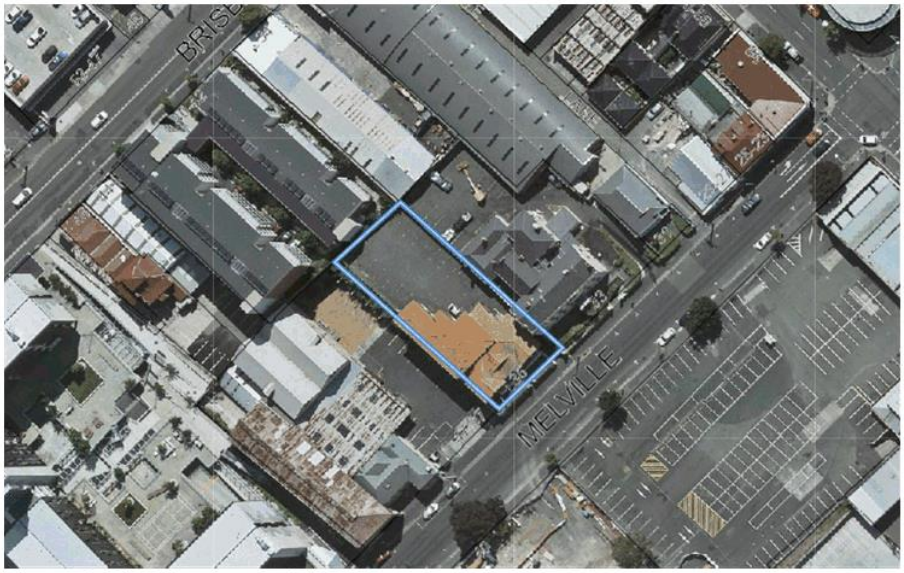


Figure 2: GIS Map Image 1:1000

2.4

Figure 3: Frontage of subject site

2.5

Figure 4: Rear of subject site

2.6

Figure 5: Rear of subject site looking towards Brisbane Street apartments

3. Proposal

3.1 Planning approval is sought for Alterations to Previously Approved Development at 35 Melville Street, Hobart.

3.2 The proposal is for alterations to the previously approved application (PLN-20-723), which was for Partial Demolition, Alterations, Extension, Signage and Change of Use to Hotel Industry at 35 Melville Street, Hobart.

The previous application included the following:

- *Partial demolition and alteration to the front section of the building to facilitate improved access and entrance platform lift, significant planting, a small entrance wall sign, decking areas with new timber balustrading and alterations to windows and doors responding to the internal layout. The exterior brick work is to feature a painted finish.*

- *Significant internal alterations and demolition to facilitate a new lounge bar area with booths on ground floor level with a kitchen, cool room and 25m2 storeroom addition. The upper level is to be office spaces and a function room.*

- *The rear of the venue will feature a decked beer garden area bordered by planter boxes and substantially covered with an opening roof structure.*

- *The rear bitumen area of the site will include 7 car parking spaces, loading bay, 8 bike racks in addition to the 4 included in the storeroom.*

The proposed alterations to previous approval include:

- Increase in the area of the beer garden from approximately 93m2 to 150m2 and for it to be fully enclosed with timber slatted cladding and a polycarbonate roof, a smaller central section will have a retractable roof.

- Minor variation to the internal layout and to the rear extension housing the kitchen store and cool room.

- Removal of all car parking from the rear of the site with the area to be a loading zone only. A landscaped buffer is to be included along the majority of the rear boundary with substantial screen planting proposed.

- Alterations to the entrance design to facilitate a small glass and steel lift for the provision of mobility disability access.

The proposal does not seek to alter the existing approved operating hours of:

Monday – Sunday
Garden Bar: 11:00am – 10:00pm
Lounge: 11:00am – 12:00am

3.3

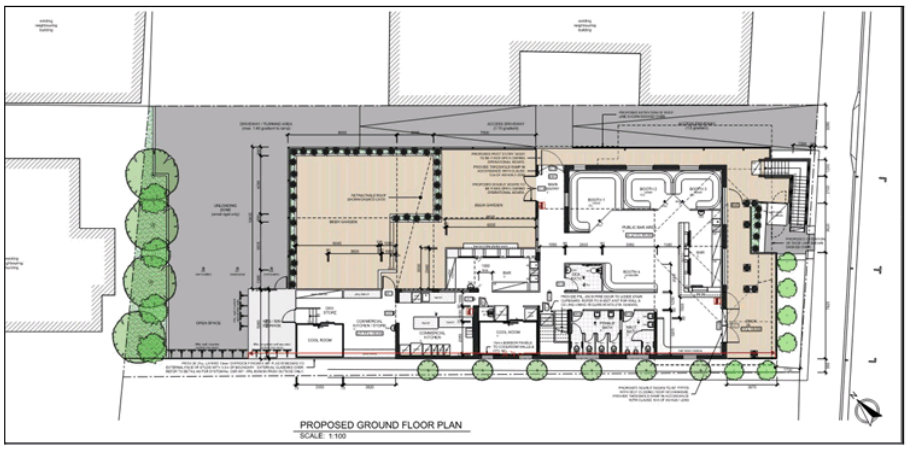


Figure 6: Proposed Ground Floor/Site Plan

4. Background

4.1 The proposal was previously approved under PLN-20-723 and was for Partial Demolition, Alterations, Extension, Signage and Change of Use to Hotel Industry. It received Twenty Four (24) objections. It was approved with conditions.

4.2 The original proposed site plan:

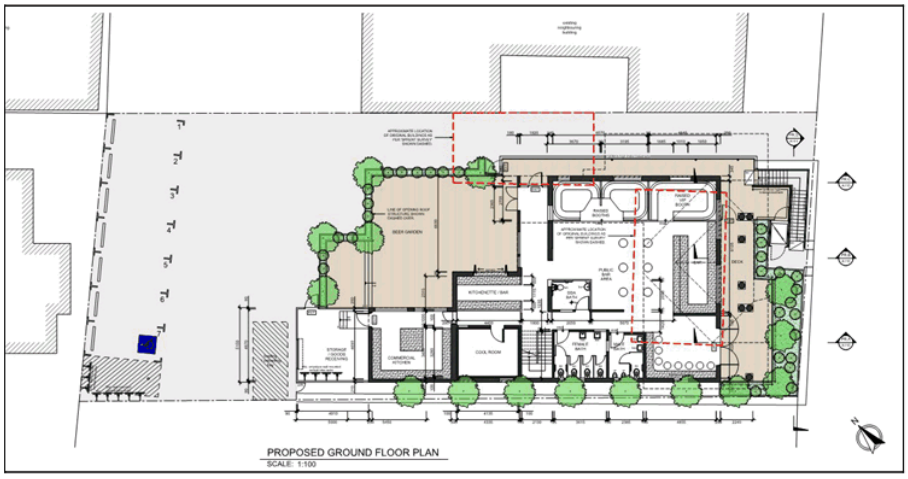


Figure 7: Original Ground Floor/Site Plan

4.3 The proposed altered site plan:

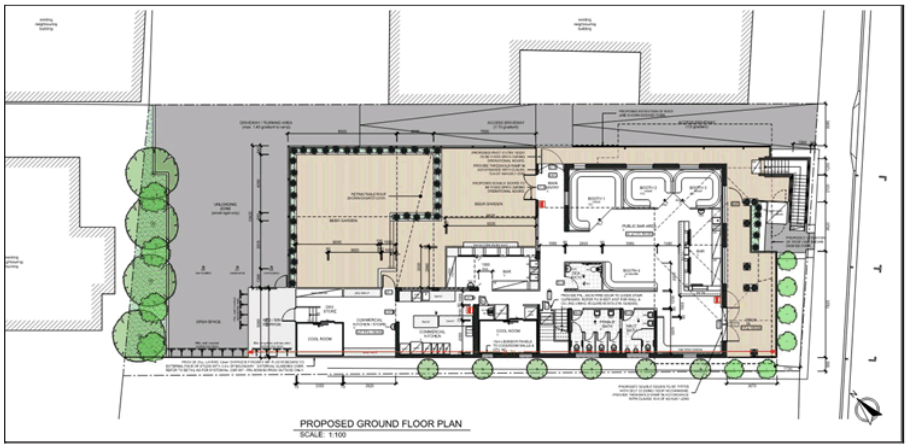


Figure 8: Proposed altered Ground Floor/Site Plan

4.4 There was consultation with the Council's Senior Cultural Heritage Officer with the applicant and access consultant to explore alternative access solutions instead of the proposed entrance lift.

5. Concerns raised by representors

5.1 Four(4) representations objecting to the proposal were received within the statutory advertising period between 22 June to the 6 July 2021.

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.

The alterations nearly double the size of the outdoor beer garden will impact on the neighbouring apartments.
Proposal will result increased crowd capacity of at least 200 people.
The beer garden is located closer to the boundary fence of the neighbouring apartments.
The timber slatted walls and plastic sheet roofing for the proposed outdoor beer garden bar will not adequately soundproof and will be a source of constant aggravation and complaints from nearby residents.
Recent outdoor events during Dark Mofo adversely affected residents and resulted in complaints to the Police.
Outside musical events will not comply with noise legislation and will be subject to complaints.
The area is not a designated entertainment precinct.
The affected area is zoned commercial however it is the most densely populated area in greater Hobart. The zoning must not be used to simply ignore residential amenity. The midtown area needs residences to support local businesses and jobs. Council need to get the balance right of commercial interest and residential amenity.
A plan for a building should not be a license for an altered plan so soon after approval.
Further consideration should be given to planting trees. The proposed row of Cupressus Leylandii to be planted on the boundary with 40 Brisbane Street are a fast growing large tree which will quickly encroach onto 40 Brisbane Street. The Evergreen Alders are successfully planted in the narrow space on the side of 40 Brisbane Street.
The proposed trees do not extend the full length of the boundary to allow for delivery trucks to turn but not mitigate sound impacts.
The proposal should be rejected and revised, the developer and bar owner have still not considered residential amenity and demonstrated a commitment to providing satisfactory measures to prevent unacceptable noise pollution and improved visual amenity for the neighbouring units.

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 Commercial Zone of the *Hobart Interim Planning Scheme 2015*.

6.3 The proposed use is for a Hotel Industry which is a discretionary use in the zone.

6.4 The proposal has been assessed against:

6.4.1 Part D - 23 Commercial Zone

6.4.2 E2.0 Potentially Contaminated Land Code

6.4.3 E5.0 Road and railway access code

6.4.4 E6.0 Parking and Access Code

6.4.5 E7.0 Stormwater Management Code

6.4.6 E13.0 Historic Heritage Code

6.4.7 E17.0 Signs Code

6.5 The proposal relies on the following performance criteria to comply with the applicable standards:

6.5.1 Commercial Zone

Use - cl.8.10.2

6.5.2 Potentially Contaminated Land Code

Excavation 2.6.2 P1

6.5.3 Parking and Access Code:

Number of Parking Spaces - E6.6.1 P1
Vehicle Passing - E6.7.3 P1

Facilities for Commercial Vehicles E6.7.13 P1

6.5.4 Historic Heritage Code:

Building and Works on a Listed Place - Demolition - Part E13.7.1 P1
Building and Works on a Listed Place - Buildings and Works other than Demolition- Part E13.7.2 P1, P2, P3 and P4
Development Standards for Places of Archeological Potential - Part E 13.10.1 P1

6.5.5 Signs Code:

Standards for signs on Heritage Places - Part E17.7.2 P1

6.6 Each performance criterion is assessed below.

6.7 Commercial Zone - Use

6.7.1 The proposed Hotel Industry Use is discretionary in the Zone and clause 8.10.2 of the Scheme requires consideration of the purpose of the zone. The zone purpose statements are as follows:

23.1.1 Zone Purpose Statements

23.1.1.1
To provide for large floor area retailing and service industries.

23.1.1.2
To provide for development that requires high levels of vehicle access and car parking for customers.

23.1.1.3
To provide for a diversity of generally non-residential uses reflecting the transition between the Central Business Zone and inner residential areas.

23.1.1.4
To allow for uses such as car yards, warehouse and showrooms in the areas of high traffic volume and high passing visibility.

23.1.1.5
To allow good quality building stock to be used for less land extensive central service uses such as offices and specialist wholesaling uses.

23.1.1.6
To allow for service industry uses such as motor repairs which provide a valuable service to users of the central area.

23.1.1.7
To provide for residential use primarily above ground floor level.

6.7.2 The alteration and extension of the proposed use does not effect the following original assessment of the use against the Zone Purpose Statements:

The site is adjacent to the Central Business Zone and contributes to the diversity of non-residential uses. Although the primary intent of the zone is for larger scale retail, service industries, car yards, warehouse and showrooms with high visibility, this focus is primarily on the Commercial zoned upper sections of Harrington and Murray Street as well sections of Campbell and Argyle Street. The Heritage values of the property, its ground floor level relative to the street frontage in combination with nature of the existing building, largely excludes the above mentioned types of uses. Also due to the site's central inner city location the Hotel Industry use of a bar restaurant style venue is a substantially more appropriate and relevant use, particularly due to its proposed operation within the permitted opening hours specific to the Hotel Industry Use in the zone. In addition to operating within the permitted hours the proposal also satisfies all relevant Use and Development Standards for the Commercial Zone. The proposal also does not preclude the future use and development of the site for above ground floor residential use, subject to heritage approval, particularly due the availability of developable area to the rear of the property.

6.7.3 The proposed use is not considered to compromise the intent of the Zone Purpose of the Commercial Zone.

6.8 Potentially Contaminated Land Code Part E 2.6.2 P1

6.8.1 The site is listed as potentially contaminated land.

6.8.2 There is no acceptable solution for Part E 2.6.2 A1.

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 (Part E 2.6.2 P1) provides as follows:

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.

6.8.5 A preliminary Environmental Site Assessment and Contamination Management Plan was previously submitted for the site and the Council's Environmental Health Officer was satisfied that the proposal meets the relevant performance criteria subject to a condition requiring implementation of the recommendations in the assessment.

6.8.6 The proposal complies with the performance criterion.

6.9 Parking and Access Code - Number of Parking Spaces - E6.6.1 P1

6.9.1 The proposal does not meet the Acceptable Solution for Number of Parking Spaces Part E6.6.1 as it generates a requirement for 85 car parking spaces and the proposal provides no on site car parking.

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

6.9.3 The performance criterion at clause Part E6.6.1 P1 provides as follows:

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;

(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 Council's Development Engineer in conjunction with the Council's Traffic Engineer has provided the following assessment:

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; - There are 17 existing on site car parking spaces which are sufficient for the current use as office space therefore no existing deficiency. The proposed use reduces the number of on site car parking spaces to zero. The proposed use requires 85 on site car parking spaces therefore resulting in a deficiency of 85 on site car parking spaces. A TIA has been provided by Hubble Traffic which comment that "during the weekday, local residents and employees from the surrounding businesses are expected to be the main customers.

These customers are thought to walk to and from the venue and are not expected to create a parking demand. Evening customers are likely to travel using alternative transport modes, such as taxi and ride sharing facilities, while customers using private vehicles would be accustomed to share available on-street parking spaces located within the surrounding streets".

Council's Traffic Engineer has not expressed concerns regarding the provision of no on site car parking spaces for the proposed use as it is a premises for the consumption of alcohol and not providing any on site car parking would discourage drink driving. Also the property is located near the CBD with on street and other parking facilities available as well as the availability of alternatively methods of transport.

(b) the availability of on-street and public car parking in the locality; - The TIA prepared by Hubble Traffic has stated " A parking survey of the on-street parking supply and demand has been undertaken along the street surrounding the development site. The survey found some 297 parking spaces are available during the day, and an additional 30 spaces become available after 6pm, when the loading zone time restrictions finish. The surveys found that at a minimum 100 parking spaces were vacant that could be shared with the proposed use. The survey demonstrated there is more than sufficient on-street parking available along the surrounding streets to easily meet the expected the demand generated by this change of use, without impacting other land-use developments".

(c) the availability and frequency of public transport within a 400m walking distance of the site; - Metro Tasmania operate regular bus services along Argyle and Elizabeth Streets which is within 400 metres of the subject site.

(d) the availability and likely use of other modes of transport; - The TIA prepared by Hubble Traffic has stated " Other modes of transport are more likely during weekends and evenings, with customers expected to arrive and depart using taxi and ride sharing facilities, as found at other bars and food venues with an inner-city location. Customers from inner-city residential apartments are expected to walk to and from the site, reducing the parking demand. Employees form local businesses are not expected to create a parking demand as they have alternative parking spaces associated with their works place, or use public transport to travel to and from their work place .

(e) the availability and suitability of alternative arrangements for car parking provision; - The Vodaphone public multi-storey car park is located within 300 metres of the development site, which is walking distance. The multi- storey car park provides off-street parking, and is open 24 hours, 7 days a week.

(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; - 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.

6.9.6 The proposal complies with the performance criterion.

6.10 Parking and Access Code - Vehicle Passing - E6.7.3 P1 & Facilities for Commercial Vehicles E6.7.13 P1

6.10.1 The proposal does not meet the Acceptable Solution in respect of the Vehicle Passing - E6.7.3 P1 & Facilities for Commercial Vehicles E6.7.13 P1.

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

6.10.3 The performance criterion at clause E6.7.3 P1 and E6.7.13 P1 provides as follows:

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.

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.

6.10.5 The Council's Development Engineering Officer is satisfied that given the submitted documentation, the driveway configuration, the low volume of traffic and the provided facilities for commercial vehicles, the proposal meets the relevant performance criteria.

6.10.6 The proposal complies with the performance criterion.

6.11 Historic Heritage Code and Signs Code

6.11.1 The subject site is a listed property under the Historic Heritage Code and a Place of Archaeological Potential. The proposal therefore requires assessment against the provisions under Building and Works on a Listed Place, Development Standards for Places of Archaeological Potential as wells as the Signs Code in respect of the Standards for Signs on Heritage Places. Therefore assessment against the performance criterion is relied on.

6.11.2 The performance criterion at clause Part E13.7.1 P1, Part E13.7.2 P1, P2, P3, P4, Part E 13.10.1 P1 and Part E17.6.1 P1 provides as follows:

Demolition

P1
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.

Buildings and Works other than Demolition

P1
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.

P2

Development must be designed to be subservient and complementary to the place through characteristics including:

(a) scale and bulk, materials, built form and fenestration;
(b) setback from frontage;
(c) siting with respect to buildings, structures and listed elements;

(d) using less dominant materials and colours.

P3
Materials, built form and fenestration must respond to the dominant heritage characteristics of the place, but any new fabric should be readily identifiable as such.

P4
Extensions to existing buildings must not detract from the historic cultural heritage significance of the place.

Places of Archaeological Potential

P1
Buildings, works and demolition must not unnecessarily impact on archaeological resources at places of archaeological potential, having regard to:

(a) the nature of the archaeological evidence, either known or predicted;

(b) measures proposed to investigate the archaeological evidence to confirm predictive statements of potential;

(c) strategies to avoid, minimise and/or control impacts arising from building, works and demolition;

(d) where it is demonstrated there is no prudent and feasible alternative to impacts arising from building, works and demolition, measures proposed to realise both the research potential in the archaeological evidence and a meaningful public benefit from any archaeological investigation;

(e) measures proposed to preserve significant archaeological evidence 'in situ'.

Standards for signs on Heritage Places

P1
A sign on a Heritage Place listed in the Historic Heritage Code or within a Heritage Precinct or Cultural Landscape Precinct must satisfy all of the following:

(a) be located in a manner that minimises impact on cultural heritage significance of the place or precinct;
(b) be placed so as to allow the architectural details of the building to remain prominent;
(c) be of a size and design that will not substantially diminish the cultural heritage significance of the place or precinct;
(d) be placed in a location on the building that would traditionally have been used as an advertising area if possible;
(e) not dominate or obscure any historic signs forming an integral part of a building's architectural detailing or cultural heritage values;
(f) have fixtures that do not damage historic building fabric, including but not restricted to attachments to masonry and wood, such as to using non-corrosive fixings inserted in mortar joints;
(g) not project above an historic parapet or roof line if such a projection impacts on the cultural heritage significance of the building;
(h) be of a graphic design that minimises modern trademark or proprietary logos not sympathetic to heritage character;
(i) not use internal illumination in a sign on a Heritage Place unless it is demonstrated that such illumination will not detract from the character and cultural heritage values of the building.

6.11.3 The Council's Cultural Heritage Officer has provided the following assessment:

Introduction:
This place is heritage listed in Table E13.1 of the Historic Heritage Code and is listed in the General Description column as 'stone wall'. It is also located in a Place of Archaeological Potential.

Proposal:
The proposal is for alterations to a previously approved development (PLN-20-723). This application primarily differs because the proposed platform lift behind the front wall has been changed to a enclosed lift shaft. This application has also been modified to take on board conditions on the previous planning permit. Other works include demolition and new works. The change of use has already been approved. The demolition and works include changes to the entrance and front access/balcony to the property, internal and external demolition, a new beer garden, parking to the rear and landscaping.

A small sign opposite the front gate is also proposed.

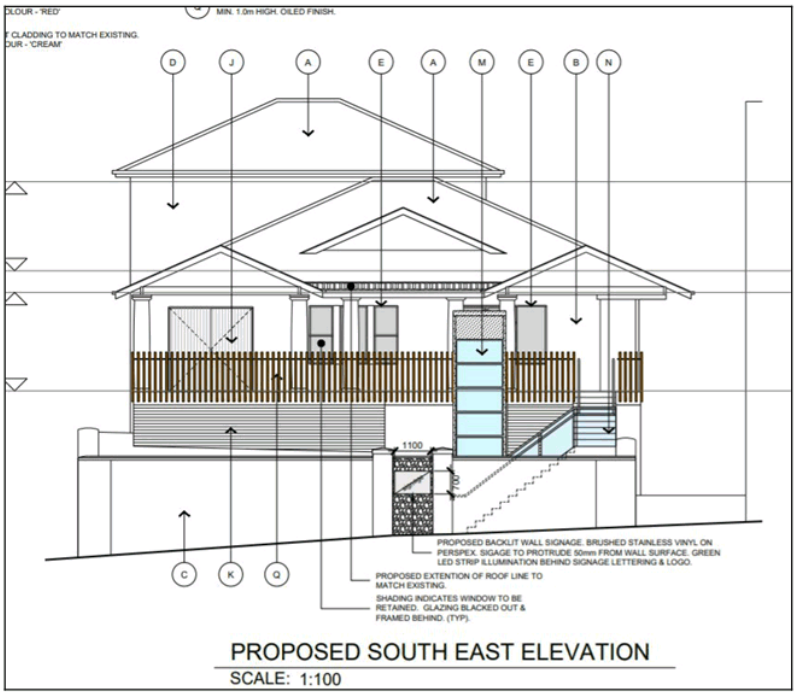
The application is supported by a Statement of Archaeological Potential and Heritage Impact Statement by Cultural Heritage Management Australia, dated 17 Dec 2020.

Representations:
Four (4) representations were received. No heritage related comments were received.

Heritage provisions:
This work must be assessed under the Historic Heritage Code of the Scheme under clause E13.7.1 P1, E13.7.2 P1, P2, P3, E13.10.1 and the Signs Code E17.7.2 P1 and satisfy all sub clauses (a) to (i).

This proposal involves less demolition to the front facade of the building with two of the three existing front windows to remain as is. On the south west elevation existing windows are to be retained. This however, is not considered critical in the assessment under the demolition as the windows are not of high heritage value, but are appropriate for the current circumstances. Additional demolition is proposed to the rear, but this is not part of the site that has heritage significance. On balance, with less demolition to the elevations, the proposal is considered to satisfy E13.7.1 P1.

The proposed new work is for a lift to the front elevation shown as "M" below.



Proposed elevation showing new lift. Source: Applicant's documentation.

A platform lift has already been approved in the location of the proposed lift under planning application PLN-20-723. Further design development by the applicant revealed that the platform lift would not fulfil the required function to provide access for people with mobility issues over a 4.0 metre change in level . The applicant engaged an access consultant (see report by Equality Building, dated 16 June 2021) to explore and clarify the relationship between building law and heritage matters. The conclusion arrived at was:

"From my perspective there are two issues to consider. The first is whether or not providing access will 'detrimentally affect heritage features of the building that are essential to the heritage significance of the building'.
The second is whether the visual impact of the lift would 'substantially detract from the heritage significance of the building'.
My opinion is that in this case:
• assuming the excavation needed for the lift installation is undertaken safely and effectively, there will be no impact on the heritage-related fabric of the wall;
• any aesthetic impact of the lift installation on the streetscape and wall itself can be minimised by careful selection of materials to be used and is secondary to the legal obligation to provide non-discriminatory access to the

building." (Michael Small, Equality Building)

The provisions relating to the new lift from the Historic Heritage Code are as follows:

E13.7.2 P1 states:
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.

E13.7.2 P2 states:
Development must be designed to be subservient and complementary to the place through characteristics including:
(a) scale and bulk, materials, built form and fenestration;
(b) setback from frontage;
(c) siting with respect to buildings, structures and listed elements;
(d) using less dominant materials and colours.

E13.7.2 P3 states:
Materials, built form and fenestration must respond to the dominant heritage characteristics of the place, but any new fabric should be readily identifiable as such.

Any assessment under the above provisions of the Historic Heritage Code is only an assessment as to whether or not the proposal satisfies those relevant provisions or not and, as such, does not require reference to obligations under the National Construction Code or the Premises Standards Guidelines where there is a change of building use and classification. Clearly, the next step is for a development proposal to meet the relevant building standards in order for a building surveyor to be satisfies a Building Permit can be issued. This is a separate step and clearly one where issues relating to discrimination arise from whether or not access can be provided. This is further outlined in the report by Equality Building. However, to propose a development without full consideration of access would be flawed.

In undertaking an assessment of the proposal against the above provisions, it should be noted that this is a highly unusual example. The recommended process is for much of this work be done prior to the development proposal,

by asking questions at an early stage, probably even prior to purchase, regarding what would be the necessary access requirements. For example, the Heritage Council of Victoria have a technical leaflet that outline a process for improving access to a heritage place resolving access issues early on to meet legislative requirements while retaining significance. It recommends that the access option that maximises access but has the minimum impact on heritage significance should be generally selected. This application is for a solution arrived at after all alternatives with less physical and visual impact have been explored. In this respect, the lift solution, not the preferred option for the building owner, is the only solution available as a result of the change of building use and classification. In fact, it can be summarised as a solution that maximises access as well as having a maximum impact on the heritage significance of the listed place.

Thus, when this proposal is considered against the above Code provisions, the only conclusion that can be drawn is that the lift, in the location between the front building line and the front boundary wall, will be incompatible in height and materials and is not subservient or complementary. The result is detriment to the heritage listed feature under the Historic Heritage Code of the Scheme.

The proposal does not satisfy E13.7.2 P1 (a) or E13.7.2 P2 (a), (b), (c) and (d), and is recommended for refusal on that basis:

Reasons for refusal
The proposal does not meet the acceptable solution or the performance criterion with respect to clause E13.7.2 P1 (a) of the Hobart Interim Planning Scheme 2015 because it is an incompatible design through its height, scale, bulk, form, siting, colours and finishes being adjacent to a heritage listed place.

The proposal does not meet the acceptable solution or the performance criterion with respect to clause E13.7.2 P2 (a) to (d) of the Hobart Interim Planning Scheme 2015 because it will not be subservient and complementary to the listed place due to its scale, bulk, built form, setback from frontage, siting with respect to listed elements.

The proposal, in respect of clauses E13.7.1 P1 has already through the previous application been assessed as satisfying E13.7.1 P1. In terms of the aesthetic impact of the lift installation, a condition of permit, as concluded in the Michael Small, Equality Building report, would result in E13.7.2 P3 being satisfied.

An assessment against E13.10.1 P1 was done under PLN-20-723 for the

previous proposal and the conclusions reached can be translated to this application and remain appropriate and valid. The proposal, with appropriate conditions, satisfies E13.10.1 P1.

An assessment against E17.7.2 (a) to (i) was also undertaken under PLN-20-723. The signage proposal has not changed and therefore it is considered that this current proposal satisfies E17.7.2 (a) to (i).

Although the officer recommendation is for refusal as above, if the Council are of a mind to approve the application, the following modified conditions based on the earlier permit (PLN-20-723) must be included.

HER 11
The stone wall and capping stones along the Melville Street frontage, either side of the pedestrian entry and returns on the south west and north east must be retained and conserved in situ to the highest standard using lime rich mortar. Any nearby excavation or demolition must not damage the stone wall. Temporary and permanent bracing must be installed to ensure the stone wall does not collapse during or post construction.

Prior to the issue of any approval (excluding Stage 1 works) under the *Building Act 2016*, revised plans must be submitted and approved showing all conservation works and temporary and permanent bracing in accordance with the above requirement.

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

Advice:
The conservation of the wall must be to the highest standard. The construction method and of the wall degree of stability of the wall is not certain, such that all excavation must be undertaken with the supervision of a suitably qualified historic heritage expert. Should any variance to the design be required due to unexpected finds or site conditions, the entry and access should be redesigned. A separate planning approval may be required.

Reason for condition
To ensure that development at a heritage place is undertaken in a sympathetic manner which does not cause loss of historic cultural heritage significance.

HER 6

All onsite excavation and disturbance between the front stone wall and the existing building and elsewhere on site (as shown on drawing site Works Plan, drawing A004, Rev C, dated 8/6/21) , must be monitored by a suitably qualified archaeologist. Should any features or deposits of an archaeological nature be discovered on the site during excavation or disturbance:

1. **All excavation and/or disturbance must stop immediately; and**
2. **A qualified archaeologist must be engaged to provide advice and assessment of the features and/or deposits discovered and make recommendations on further excavation and/or disturbance; and**
3. **All and any recommendations made by the archaeologist engaged in accordance with (2) above must be complied with in full; and**
4. **All features and/or deposits discovered must be reported to the Council with 1 days of the discovery; and**
5. **A copy of the archaeologists advice, assessment and recommendations obtained in accordance with 2. above must be provided to Council within 60 days of receipt of the advice, assessment and recommendations and prior to the issue of a certificate of occupancy.**

Excavation and/or disturbance must not recommence unless and until approval is granted from the Council.

Reason for condition
To ensure that work is planned and implemented in a manner that seeks to understand, retain, protect, preserve and manage significant archaeological evidence.

HER 20

The site must be landscaped with plants appropriate to the growing conditions and the historic setting. All landscaping shown in the landscaping plan (as shown in drawing A103, Rev L, dated 15/3/21) must be undertaken prior to completion and must be substantially in accordance with the approved plan. Any substantial change in the plants, growing conditions and irrigations system requires further approval.

Reason for condition
To ensure that development at a heritage place is undertaken in a sympathetic

manner which does not cause loss of historic cultural heritage significance.

HER s3
The exterior cladding of the lift is not approved. Revised and detailed plans must be prepared and submitted for the exterior of the lift that are sympathetic to and more compatible with the historic character of the place as well as respond to and reflect the character of the proposed timber balustrade to the front timber deck.

Revised and detailed plans must be prepared and submitted by a suitably qualified person in historic heritage for the new front steps, landings, handrail and balustrade to be sympathetic and subservient to the historic cultural heritage significance of the place.

Prior to the issue of any approval (excluding Stage 1 works) under the *Building Act 2016*, revised plans must be submitted and approved in accordance with the above requirement. All work required by this condition must be undertaken in accordance with the approved plans.

Advice: Materials such as the timber battens shown in the vertical balustrade/screen on the proposed elevations and horizontal timber screen both with an oiled finish and 25% transparency (drawing A105, Rev C) would be considered appropriate for the exterior of the lift and for the handrail/balustrade to the front steps.

Reason for condition
To ensure that development at a heritage place is undertaken in a sympathetic manner which does not cause loss of historic cultural heritage significance.

6.11.4 The proposal complies with the performance criterion.

7. Discussion

7.1 Planning approval is sought for Alterations to Previously Approved Development at 35 Melville Street, Hobart

7.2 The application was advertised and received four (4) representations. The representations raised concerns primarily relating to the potential impact of the increased size of the outdoor beer garden and associated capacity, on the adjoining residential units to the rear. The main factor of this concern stems from noise, with the covered outdoor area viewed as not providing sufficient sound attenuation which will result in noise complaints. Also that despite the commercial zoning Council need to consider getting the balance right of commercial interest and residential amenity especially considering the dense population of the area. Other concerns were that the planting along the rear boundary doesn't extend the entire distance therefore reducing its effectiveness in mitigating sound impacts. Also that the proposed species of Cupressus Leylandii are fast growing and will quickly encroach on the adjoining property, Evergreen Alders are successfully planted on the adjoining properties. The point was raised as to the ability for the applicant to make an altered new plans so soon after approval.

The concerns of the representors are acknowledged. However, the Commercial Zone does not provide protection of residential amenity except when in close proximity (50m) to a residential zone. The Scheme protects and does not inhibit the operation of commercial uses as it is the intended function of these zones. The application has proposed hours of operation which fall within the acceptable solution for a Hotel Industries use (23.3.8 A1), with the proposed use of outdoor beer garden further reduced to 10pm as part of the previous application process. The hours will carry over to the altered proposal which also includes additional screen planting along the rear boundary and with the beer garden essentially fully enclosed. Although not sound proof it does effectively screen the area from adjoining property particularly in combination with the proposed screen planting to the rear. In combination with removal of rear car parking these elements contribute to addressing some of the factors of concern with the original proposal. Despite the lack of specific controls in the Scheme, the owners of the venue are aware of the surroundings and are conscious of minimising and mitigating potential impacts of the use.

In terms of the choice of vegetation there are multiple options that could be successful all with associated maintenance obligations. With respect to lodging an altered application it is not uncommon for proposals to vary from their original conception and therefore subsequent planning approval is often required.

7.3 The proposal has been assessed against the relevant provisions of the planning scheme and is considered to satisfy the relevant performance criteria in respect of its discretions under Use, Potentially Contaminated Land Code, Parking and Access Code, and the Signs Code, but not the Historic Heritage Code.

In respect of the alterations and extension to the Hotel Industry use, it does not alter

the original assessment against the Zone Purpose Statements. The proposal presents a unique reuse of the existing building. The use assessment originally concluded that the proposed use is considered more appropriate than the primary uses intended for the zone of larger scale retail, service industries, car yards, warehouse and showrooms particularly considering the nature and heritage value of the property in combination of with inner city location of the site. If approved by Council a condition linking the previous approval to the altered proposal permit should be included as well as other relevant conditions including the originally approved hours of operation.

In respect of parking and access although the proposed car parking deficit is significant relevant to the Scheme requirement it is noted that the directly opposite the site is the Central Business Zone and there is in fact a requirement for no on-site car parking. The Council's Development Engineer in conjunction with Council's Traffic Engineer are satisfied that due to the nature of the use and inner city location the proposed removal of on site car parking is considered acceptable as is the vehicle passing and commercial vehicle facilities.

The Council's Senior Cultural Heritage Officer's assessment has concluded that the variation of the proposal to provide an external lift within the frontage of the property to facilitate mobility disability access did not satisfy the performance criteria in respect of the following provisions:

- The proposal does not meet the acceptable solution or the performance criterion with respect to clause E13.7.2 P1 (a) of the *Hobart Interim Planning Scheme 2015* because it is an incompatible design through its height, scale, bulk, form, siting, colours and finishes being adjacent to a heritage listed place.

- The proposal does not meet the acceptable solution or the performance criterion with respect to clause E13.7.2 P2 (a) to (d) of the *Hobart Interim Planning Scheme 2015* because it will not be subservient and complementary to the listed place due to its scale, bulk, built form, setback from frontage, siting with respect to listed elements.

The officer acknowledged the following:

"This application is for a solution arrived at after all alternatives with less physical and visual impact have been explored. In this respect, the lift solution, not the preferred option for the building owner, is the only solution available as a result of the change of building use and classification. In fact, it can be summarised as a solution that maximises access as well as having a maximum impact on the heritage significance of the listed place."

The other works associated with proposal are considered to satisfy the provisions of Historic Heritage Code. Although the lift solution is considered to result in detriment to the heritage listed feature under the Historic Heritage Code and recommended for refusal by the Senior Cultural Heritage Officer, should the proposal be approved by Council conditions are recommended for inclusion on the permit by the officer The conditions relate to the retention and stabilisation measures for the wall, a more detailed landscaping plan, archaeological issues as well the requirement of a palette of exterior colours, materials and finishes as well as cladding requirements for the lift.

7.4 The proposal has been assessed by other Council officers, including the Council's Development Engineer, Council's Traffic Engineer and Environmental Health Officer. The officers have raised no objection to the proposal, subject to conditions.

7.5 The proposal is recommended for refusal.

8. Conclusion

8.1 The proposed Alterations to Previously Approved Development at 35 Melville Street, Hobart does not satisfy the relevant provisions of the *Hobart Interim Planning Scheme 2015*, and as such is recommended for refusal.

9. Recommendations

That: Pursuant to the *Hobart Interim Planning Scheme 2015*, the Council refuse the application for Alterations to Previously Approved Development at 35 Melville Street, Hobart for the following reasons:

1 The proposal does not meet the acceptable solution or the performance criterion with respect to clause E13.7.2 A1 or P1 (a) of the *Hobart Interim Planning Scheme 2015* because it will result in the loss of historic cultural heritage significance to the place through its incompatible design including its height, scale, bulk, form, siting, colours and finishes.

2 The proposal does not meet the acceptable solution or the performance criterion with respect to clause E13.7.2 P2 (a) to (d) of the *Hobart Interim Planning Scheme 2015* because it will not be subservient and complementary to the listed place due to its scale, bulk, built form, setback from frontage, siting with respect to listed elements.

(Tristan Widdowson)
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: 27 July 2021

Attachment(s):

Attachment B - CPC Agenda Documents

Attachment C - Referral Officer Report Heritage

PROPOSED PUBLIC BAR & BEER GARDEN
35 MELVILLE STREET,
HOBART, 7000,
TASMANIA

INDEX

ARCHITECTURAL

A000	INDEX & COVER SHEET
A001	EXISTING SITE PLAN
A002	PROPOSED SITE PLAN
A003	PROPOSED STAGING PLAN
A004	PROPOSED SITE WORKS PLAN
A005	EXTERNAL LIGHTING PLAN
A006	VEHICLE MOVEMENT PLANS - SRV
A007	PHOTO LOCATION PLANS
A008	STREET ACCESS PLAN & SECTIONS
A101	EXISTING FLOOR PLANS
A102	DEMOLITION PLANS
A103	PROPOSED FLOOR PLANS
A104	EXISTING ELEVATIONS
A105	PROPOSED ELEVATIONS

IMPORTANT

ALL DRAWINGS TO BE READ IN CONJUNCTION WITH SPECIFICATION, SCHEDULES AND CONSULTANTS DRAWINGS. CONTRACTOR TO CHECK ALL DIMENSIONS ON SITE PRIOR TO EXECUTION OF WORK. FIGURED DIMENSIONS SHALL BE TAKEN IN PREFERENCE TO SCALED DIMENSIONS. ANY DISCREPANCIES TO BE REPORTED TO ENGINEER FOR INSTRUCTION BEFORE PROCEEDING.

NOT FOR CONSTRUCTION

SITE COVERAGE

SITE:	609m²
BUILDING AREA (TOTAL):	463.48m²
COVERAGE:	57.29%

GENERAL INFORMATION

LAND CERTIFICATE OF TITLE REFERENCE No. - VOL. 44289 / FOL. 1

CLIMATE ZONE FOR THERMAL DESIGN (building code of australia) - ZONE 7

CORROSION ENVIRONMENT - MODERATE (i.e. more than 1km from breaking surf or more than 100m from salt water not subject to breaking surf or non-heavy industrial areas).

RESULTS OF THE GEOTECHNICAL ASSESSMENT CARRIED OUT BY 'JSA CONSULTING ENGINEERS' WERE AS FOLLOWS:-

SOIL CLASSIFICATION - P

WIND LOAD CLASSIFICATIONS (AS4055-2011)

REGION - A

TERRAIN CATEGORY - TC3

SHIELD CLASSIFICATION - PS

TOPOGRAPHIC CLASSIFICATION - T3

WIND CLASSIFICATION - N3

LOCALITY PLAN
SCALE: N.T.S.

IMPORTANT
DRAWINGS MUST BE
PRINTED & READ IN COLOUR

N

REV	DESCRIPTION	BY	CHK	DATE
C	FOR PLANNING APPROVAL - RFI RESPONSE	RB	MH	09/08/21
B	FOR PLANNING APPROVAL	RB	MH	24/05/21
A	FOR PLANNING APPROVAL	RB	MH	17/05/21

JSA CONSULTING ENGINEERS
Ellerslie House, Level 1, 119 Sandy Bay Road, Sandy Bay TAS 7005
Phone (03) 6224 5625 www.jsaengineers.com.au

ENGINEER	M. HORSHAM CC5865 I	SCALE	AS SHOWN
SIZE	A1		
DESIGNER	M. HORSHAM CC5865 I	DRAWN	R. BEADLE
STATUS	FOR PLANNING APPROVAL		

PROJECT
PROPOSED PUBLIC BAR & BEER GARDEN
35 MELVILLE STREET,
HOBART, 7000

DRAWING TITLE
INDEX & COVER SHEET

PROJECT NO	DWG NO	REV
20E99-67	A000	C

NOT FOR CONSTRUCTION

EXISTING SITE PLAN
SCALE: 1:200

2m 0 2 4 6 8 10m
SCALE 1:200 AT A1 SHEET

IMPORTANT
DRAWINGS MUST BE
PRINTED & READ IN COLOUR

REV	DESCRIPTION	BY	CHK	DATE	REV	DESCRIPTION	BY	CHK	DATE
C	FOR PLANNING APPROVAL - RFI RESPONSE	RB	MH	09/9/21					
B	FOR PLANNING APPROVAL	RB	MH	24/8/21					
A	FOR PLANNING APPROVAL	RB	MH	17/8/21					

JSA CONSULTING ENGINEERS
Ellerslie House, Level 1, 119 Sandy Bay Road, Sandy Bay TAS 7005
Phone (03) 6224 5625 www.jsaengineers.com.au

ENGINEER: M. HORSHAM CC5865 I	SCALE: AS SHOWN	SIZE: A1	PROJECT: PROPOSED PUBLIC BAR & BEER GARDEN
DESIGNER: M. HORSHAM CC5865 I	DRAWN: R. BEADLE		35 MELVILLE STREET, HOBART, 7000
STATUS: FOR PLANNING APPROVAL			

DRAWING TITLE: EXISTING SITE PLAN
PROJECT NO: 20E99-67 | DWG NO: A001 | REV: C

KEY

EXISTING DRIVEWAY TO BE RETAINED. REFER TO CIVIL DOCUMENTATION.

PROPOSED LANDSCAPING.

LANDSCAPING (CLAUSE E6.7.6 HOBART INTERIM PLANNING SCHEME)

LANDSCAPING TO BE PROVIDED TO NO LESS THAN 5% OF CAR PARKING AREA.

SEALED ROAD, PARKING & CIRCULATION AREA = 432.09m²
LANDSCAPING AREA REQUIRED = 21.61m²
LANDSCAPING AREA PROVIDED = 22.69m²

GENERAL TENANCY INFORMATION

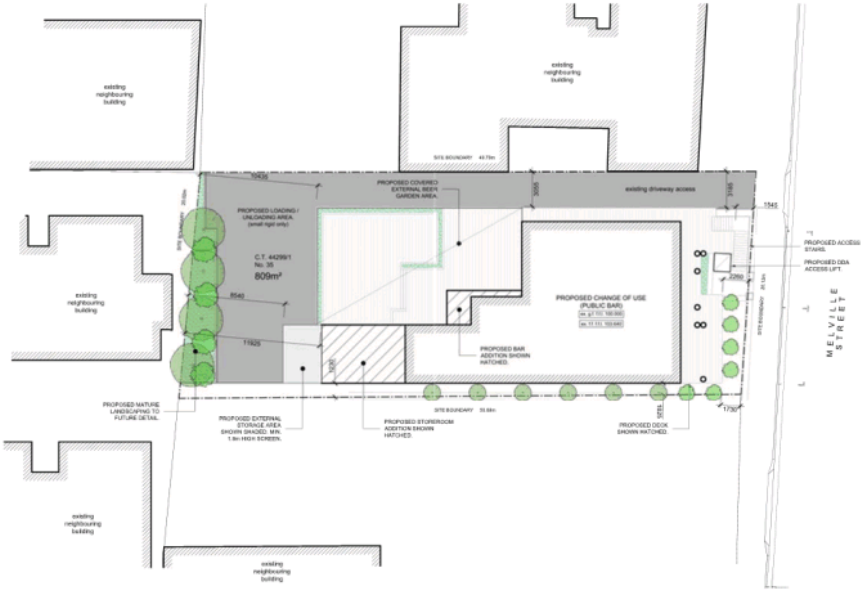
INTENDED USE: LOUNGE AND GARDEN BAR.

INTERNAL ALTERATIONS TO EXISTING BUILDING TO SUIT NEW PUBLIC BAR, LOUNGE AREA & KITCHEN. EXTERNAL ALTERATIONS TO THE EXISTING FRONT VERANDAH & ENTRY TO INCLUDE NEW DECK STRUCTURE BUILT OVER EX. STAIR AND ENTRY STRUCTURE. NEW ENTRY STAIRS AND WHEELCHAIR LIFT TO FRONT OF BUILDING. ALTERATIONS TO THE EXISTING CAR PARK AREA TO INCLUDE NEW EXTERNAL BEER GARDEN AND OPERABLE ROOF STRUCTURE. NEW STORAGE ROOM ADDITION TO REAR OF BUILDING

OPERATING HOURS:

MONDAY - SUNDAY (inclusive):
GARDEN BAR 11:00am - 10:00pm
LOUNGE 11:00am - 12:00am

NOT FOR CONSTRUCTION



PROPOSED SITE PLAN
SCALE: 1:200

2m 0 2 4 6 8 10m
SCALE 1:200 AT A1 SHEET

IMPORTANT
DRAWINGS MUST BE
PRINTED & READ IN COLOUR

REV	DESCRIPTION	BY	CHK	DATE
C	FOR PLANNING APPROVAL - RFI RESPONSE	RB	MH	09/09/21
B	FOR PLANNING APPROVAL	RB	MH	24/08/21
A	FOR PLANNING APPROVAL	RB	MH	17/08/21

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ENGINEER: M. HORSHAM CC5865 I	SCALE: AS SHOWN	SIZE: A1	PROJECT: PROPOSED PUBLIC BAR & BEER GARDEN, 35 MELVILLE STREET, HOBART, 7000
DESIGNER: M. HORSHAM CC5865 I	DRAWN: R. BEADLE		
STATUS: FOR PLANNING APPROVAL			

DRAWING TITLE: PROPOSED SITE PLAN
PROJECT NO: 20E99-67
DWG NO: A002
REV: C

STAGING KEY

STAGE 1 — INTERNAL ALTERATIONS & STOREROOM ADDITION INCLUDING EXTERNAL DOOR & WINDOWS, FRONT DECK, STAIR & LIFT ACCESS, WATER METER, SEWER, STORMWATER & WATER SERVICES.

STAGE 2 — BEER GARDEN / LOADING BAY / ASSOCIATED LANDSCAPING.

NOT FOR CONSTRUCTION

PROPOSED STAGING PLAN
SCALE: 1:200

2m 0 2 4 6 8 10m
SCALE 1:200 AT A1 SHEET

IMPORTANT
DRAWINGS MUST BE
PRINTED & READ IN COLOUR

REV	DESCRIPTION	BY	CHK	DATE
C	FOR PLANNING APPROVAL - RFI RESPONSE	RB	MH	09/08/21
B	FOR PLANNING APPROVAL	RB	MH	24/05/21
A	FOR PLANNING APPROVAL	RB	MH	17/05/21

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Ellerslie House, Level 1, 119 Sandy Bay Road, Sandy Bay TAS 7005
Phone (03) 6224 9625 www.jsaengineers.com.au

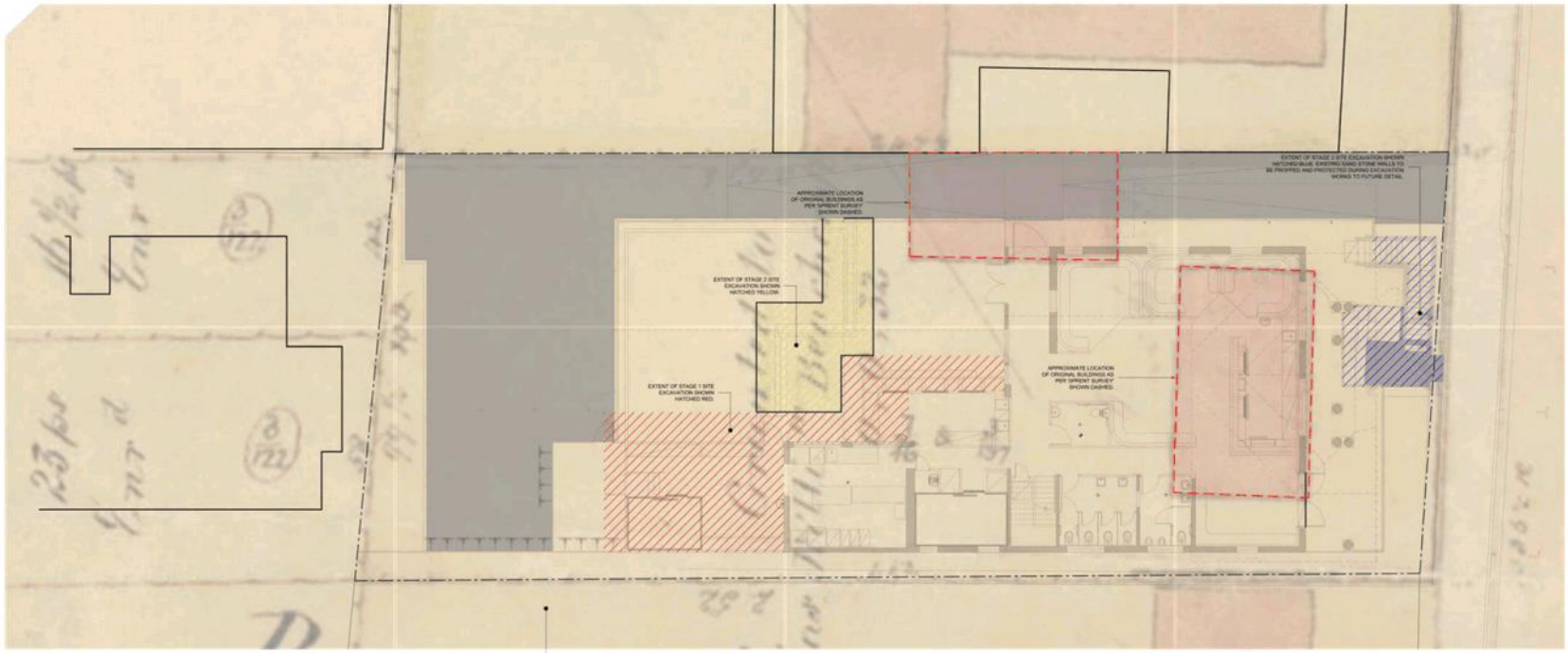
ENGINEER: M. HORSHAM CC5865 I	SCALE: AS SHOWN	SIZE: A1	PROJECT: PROPOSED PUBLIC BAR & BEER GARDEN, 35 MELVILLE STREET, HOBART, 7000
DESIGNER: M. HORSHAM CC5865 I	DRAWN: R. BEADLE		DRAWING TITLE: PROPOSED STAGING PLAN
STATUS: FOR PLANNING APPROVAL			PROJECT NO: 20E99-67 · DWG NO: A003 · REV: C

NOTE:
ALL EXCAVATION ONSITE **MUST** BE MONITORED BY A SUITABLE QUALIFIED ARCHAEOLOGIST ON SITE.
SHOULD ANY FEATURES OR DEPOSITS OF AN ARCHAEOLOGICAL NATURE BE DISCOVERED ON SITE DURING EXCAVATION OR DISTURBANCE:

1. ALL EXCAVATION AND / OR DISTURBANCE MUST STOP IMMEDIATELY; AND
2. A QUALIFIED ARCHAEOLOGIST MUST BE ENGAGED TO M PROVIDE ADVICE AND ASSESSMENT OF THE FEATURES AND / OR DEPOSITS DISCOVERED AND MAKE RECOMMENDATIONS ON FURTHER EXCAVATION AND / OR DISTURBANCE; AND
3. ALL AND ANY RECOMMENDATIONS MADE BY THE ARCHEOLOGIST ENTAILED IN ACCORDANCE WITH PARAGRAPH (2) ABOVE MUST BE COMPLIED WITH IN FULL; AND
4. ALL FEATURES AND / OR DEPOSITS DISCOVERED MUST BE REPORTED TO THE COUNCIL WITHIN 1 DAY OF THE DISCOVERY; AND
5. A COPY OF THE ARCHAEOLOGISTS ADVICE, ASSESSMENT AND RECOMMENDATIONS OBTAINED IN ACCORDANCE WITH PARAGRAPH (2) ABOVE MUST BE PROVIDED TO COUNCIL WITHIN 63 DAYS OF RECEIPT OF THE ADVICE, ASSESSMENT AND RECOMMENDATIONS

EXCAVATION AND / OR DISTURBANCE MUST NOT RECOMMENCE UNLESS AND UNTIL APPROVAL IS GRANTED FROM THE COUNCIL.

NOT FOR CONSTRUCTION



SITE WORKS PLAN
SCALE: 1:100

1000mm 0 1000 2000 3000 4000 5000mm
SCALE 1:100 AT A1 SHEET

IMPORTANT DRAWINGS MUST BE PRINTED & READ IN COLOUR

REV	DESCRIPTION	BY	CHK	DATE	REV	DESCRIPTION	BY	CHK	DATE
C	FOR PLANNING APPROVAL - RFI RESPONSE	KB	MH	09/8/21					
B	FOR PLANNING APPROVAL	KB	MH	04/8/21					
A	FOR PLANNING APPROVAL	KB	MH	17/5/21					

JSA CONSULTING ENGINEERS
Ellerslie House, Level 1, 119 Sandy Bay Road, Sandy Bay TAS 7005
Phone (03) 6234 9625 www.jsaengineers.com.au

ENGINEER: M. HORSHAM CC5865 I	SCALE: AS SHOWN	SIZE: A1	PROJECT: PROPOSED PUBLIC BAR & BEER GARDEN
DESIGNER: M. HORSHAM CC5865 I	DRAWN: R. BEADLE		35 MELVILLE STREET, HOBART, 7000
STATUS: FOR PLANNING APPROVAL			

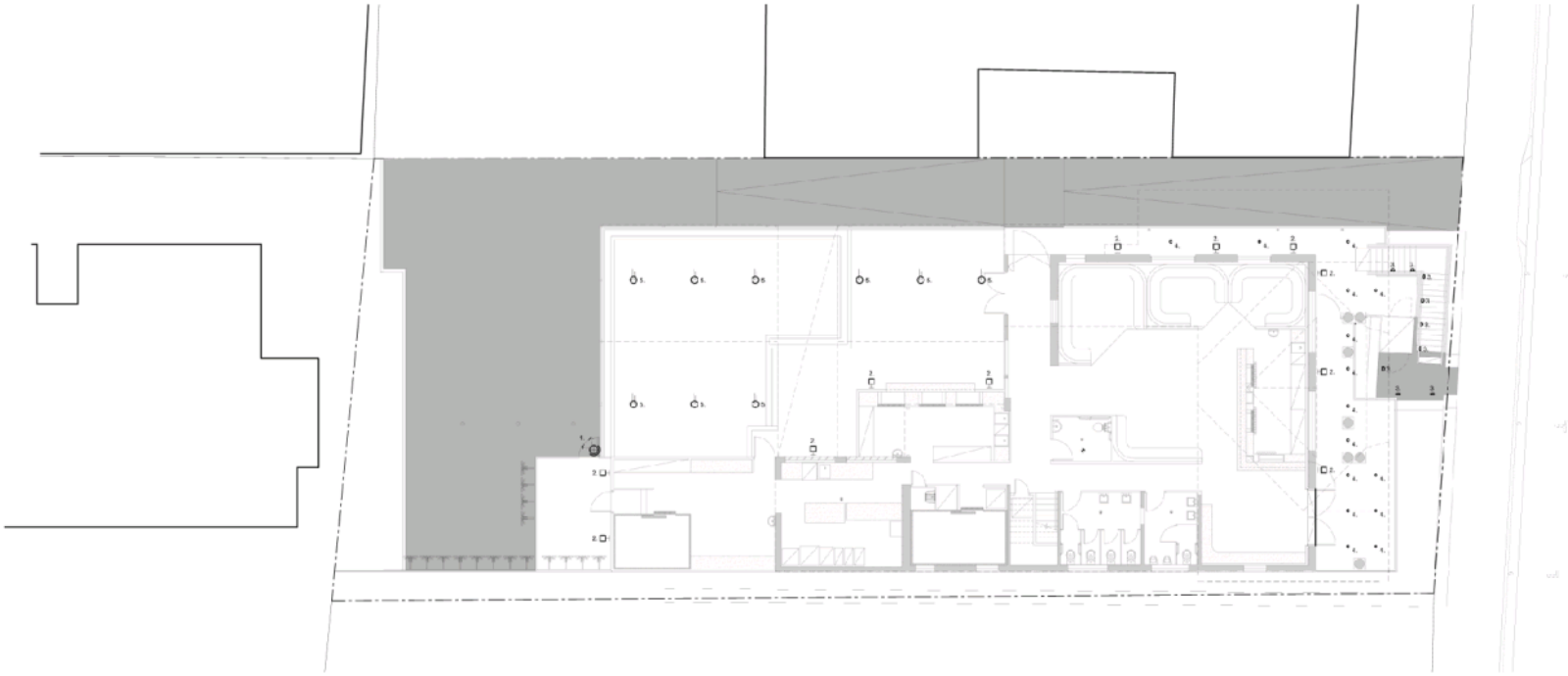
DRAWING TITLE: SITE WORKS PLAN

PROJECT NO	DWG NO	REV
20E99-67	A004	C

LIGHTING KEY

1. LED FLOOD LIGHT - WALL MOUNTED AT 5.8m ABOVE FINISHED FLOOR / SURFACE LEVEL
2. LED WALL LIGHT - WALL MOUNTED AT 1.6m ABOVE FINISHED FLOOR / SURFACE LEVEL
3. LED STEP LIGHT - WALL MOUNTED AT 0.2m ABOVE FINISHED FLOOR / SURFACE LEVEL
4. LED RECESSED DOWNLIGHT
5. LED PENDANT LIGHT SUSPENDED FROM ARBOUR STRUCTURE

NOT FOR CONSTRUCTION



PROPOSED EXTERNAL LIGHTING PLAN
SCALE: 1:100

1000mm 0 1000 2000 3000 4000 5000mm
SCALE 1:100 AT A1 SHEET

IMPORTANT
DRAWINGS MUST BE
PRINTED & READ IN COLOUR

REV	DESCRIPTION	BY	CHK	DATE
C	FOR PLANNING APPROVAL - RFI RESPONSE	RB	MH	09/09/21
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SIZE	A1		
DESIGNER	M. HORSHAM CC5865 I	DRAWN	R. BEADLE
STATUS	FOR PLANNING APPROVAL		

PROJECT
PROPOSED PUBLIC BAR & BEER GARDEN
35 MELVILLE STREET,
HOBART, 7000

DRAWING TITLE
PROPOSED EXTERNAL LIGHTING PLAN

PROJECT NO	DWG NO	REV
20E99-67	A005	C


VEHICLE MOVEMENT NOTES:
1. MOVEMENT TEMPLATES DEMONSTRATE ABILITY OF VEHICLES TO ENTER INTERSECTION IN A FORWARDS DIRECTION AND LEAVE IN A FORWARDS DIRECTION.
2. THE BASE DIMENSIONS OF THE TRUCK TEMPLATE REPRESENT A SMALL RIGID VEHICLE.
3. THE SWEPT PATH OF THE VEHICLE REPRESENT THE OUTER EXTENTS OF THE VEHICLE BODY
4. THE PATHS WERE GENERATED WITH A TURNING SPEED OF 5km/hr FROM THE STREET.
SRV TRUCK
NOT FOR CONSTRUCTION
SRV - Small Rigid Vehicle
SRV MOVEMENT PLAN - ENTRY
SCALE: 1:100
SRV MOVEMENT PLAN - EXIT
SCALE: 1:100
IMPORTANT DRAWINGS MUST BE PRINTED & READ IN COLOUR
JSA CONSULTING ENGINEERS
M. HORSHAM CC5865 I
M. HORSHAM CC5865 I
AS SHOWN
A1
R. BEADLE
FOR PLANNING APPROVAL
PROPOSED PUBLIC BAR & BEER GARDEN
35 MELVILLE STREET,
HOBART, 7000
VEHICLE MOVEMENT PLANS - SRV
20E99-67
A006
C

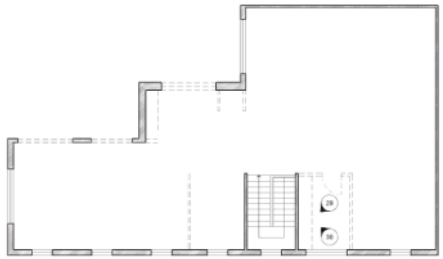
WALL LEGEND

EXISTING WALLS

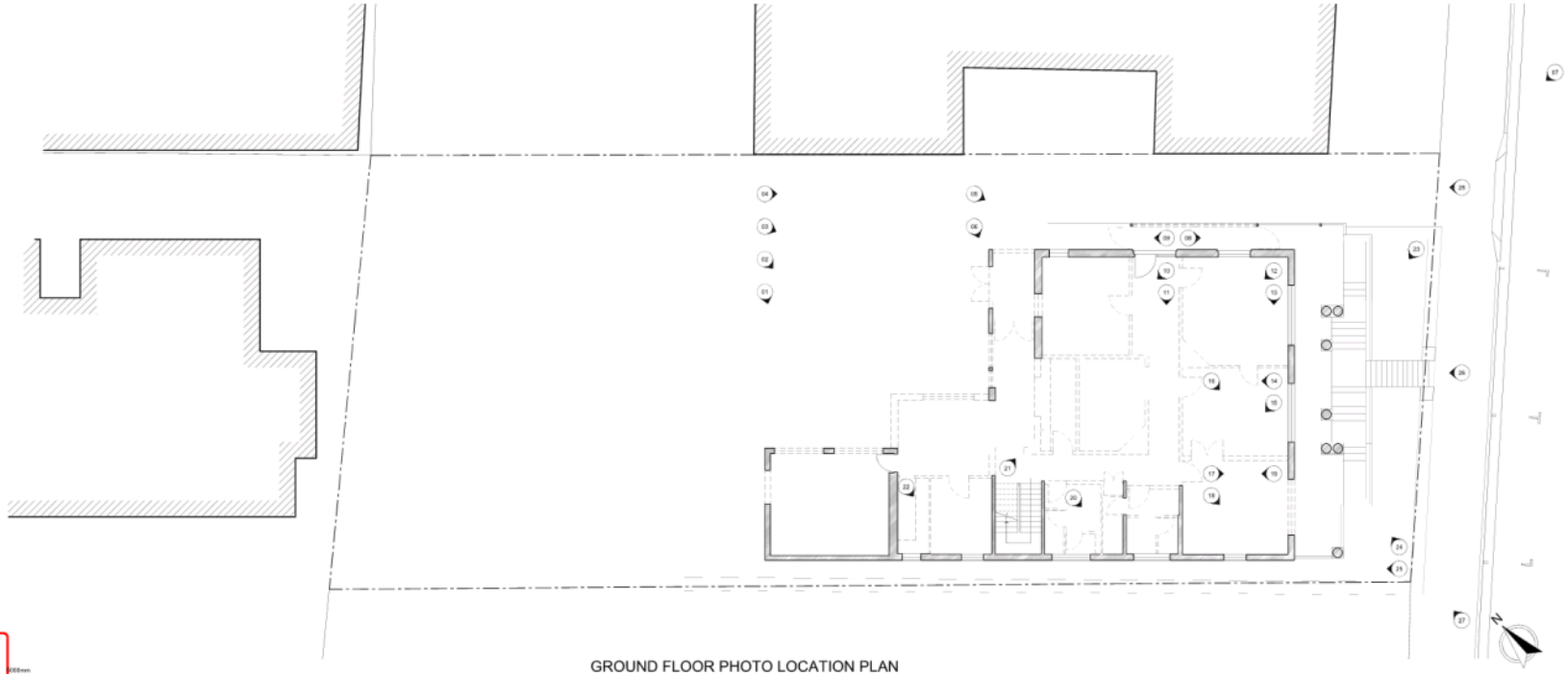
DEMOLITION

NOTE:
REFER TO ATTACHED DOCUMENT FOR SITE PHOTOS REFERENCED ON PLAN

NOT FOR CONSTRUCTION



FIRST FLOOR PHOTO LOCATION PLAN
SCALE: 1:100



IMPORTANT
DRAWINGS MUST BE
PRINTED & READ IN COLOUR

GROUND FLOOR PHOTO LOCATION PLAN
SCALE: 1:100

REV	DESCRIPTION	BY	CHK	DATE
C	FOR PLANNING APPROVAL - RFI RESPONSE	RB	MH	09/09/21
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A	FOR PLANNING APPROVAL	RB	MH	17/08/21

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Phone (03) 6224 9625 www.jsaengineers.com.au

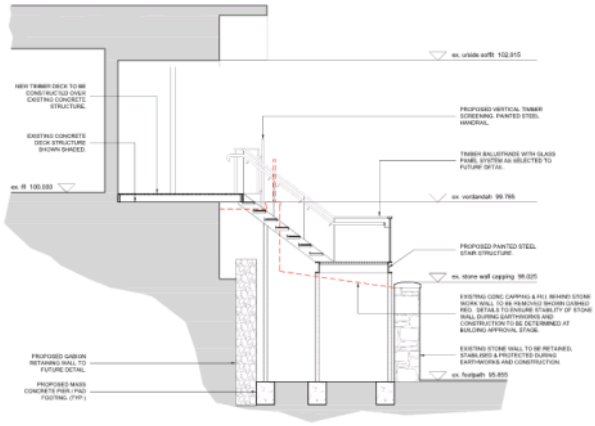
ENGINEER	M. HORSHAM CC5865 I	SCALE	AS SHOWN
DESIGNER	M. HORSHAM CC5865 I	DRAWN	R. BEADLE
STATUS	FOR PLANNING APPROVAL	SIZE	A1

PROJECT
PROPOSED PUBLIC BAR & BEER GARDEN
35 MELVILLE STREET,
HOBART, 7000

DRAWING TITLE
PHOTO LOCATION PLANS

PROJECT NO	DWG NO	REV
20E99-67	A007	C

NOT FOR CONSTRUCTION



ST1 SECTION - ST1
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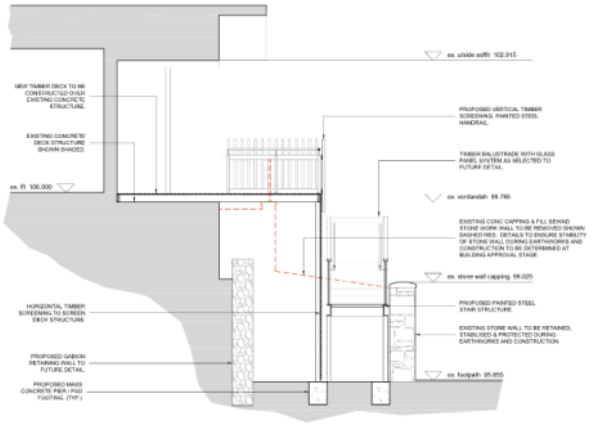

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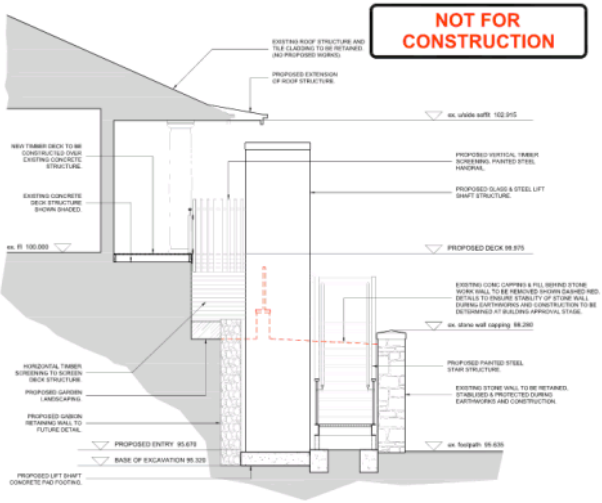

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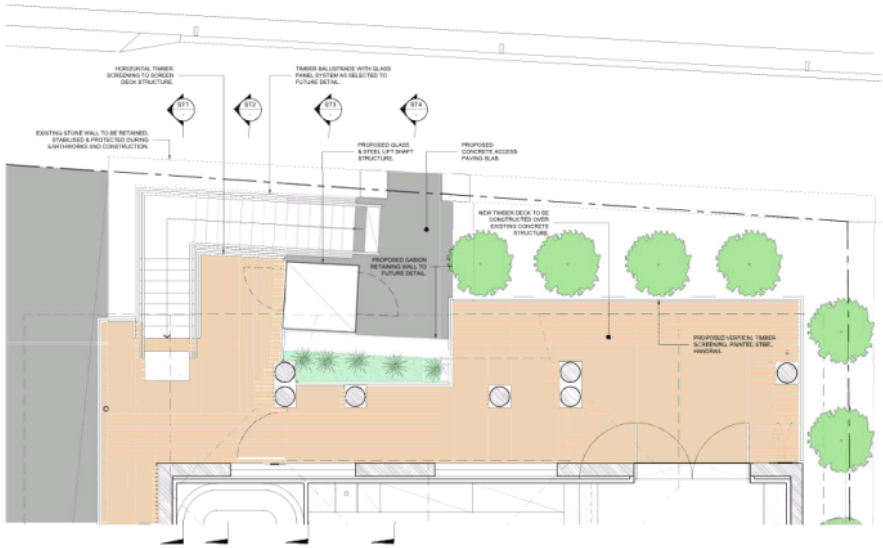
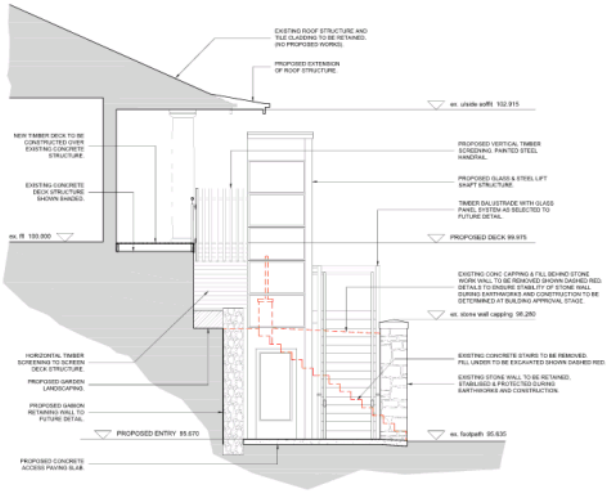


PROPOSED STREET ACCESS PLAN
SCALE: 1:50



ST4 SECTION - ST4
SCALE: 1:50

IMPORTANT
DRAWINGS MUST BE
PRINTED & READ IN COLOUR

REV	DESCRIPTION	BY	CHK	DATE
C	FOR PLANNING APPROVAL - RFI RESPONSE	RB	MH	09/08/21
B	FOR PLANNING APPROVAL	RB	MH	24/05/21
A	FOR PLANNING APPROVAL	RB	MH	17/05/21

JSA CONSULTING ENGINEERS
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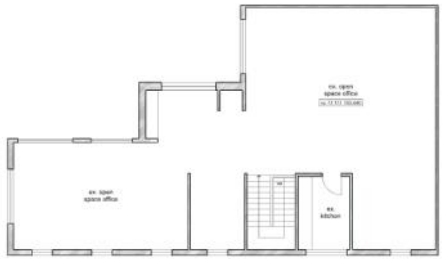
Phone (03) 6224 9625 www.jsaengineers.com.au

ENGINEER: M. HORSHAM CC5865 I	SCALE: AS SHOWN	SIZE: A1	PROJECT: PROPOSED PUBLIC BAR & BEER GARDEN, 35 MELVILLE STREET, HOBART, 7000
DESIGNER: M. HORSHAM CC5865 I	DRAWN: R. BEADLE		DRAWING TITLE: STREET ACCESS PLAN & SECTIONS
STATUS: FOR PLANNING APPROVAL			PROJECT NO: 20E99-67 · DWG NO: A008 · REV: C

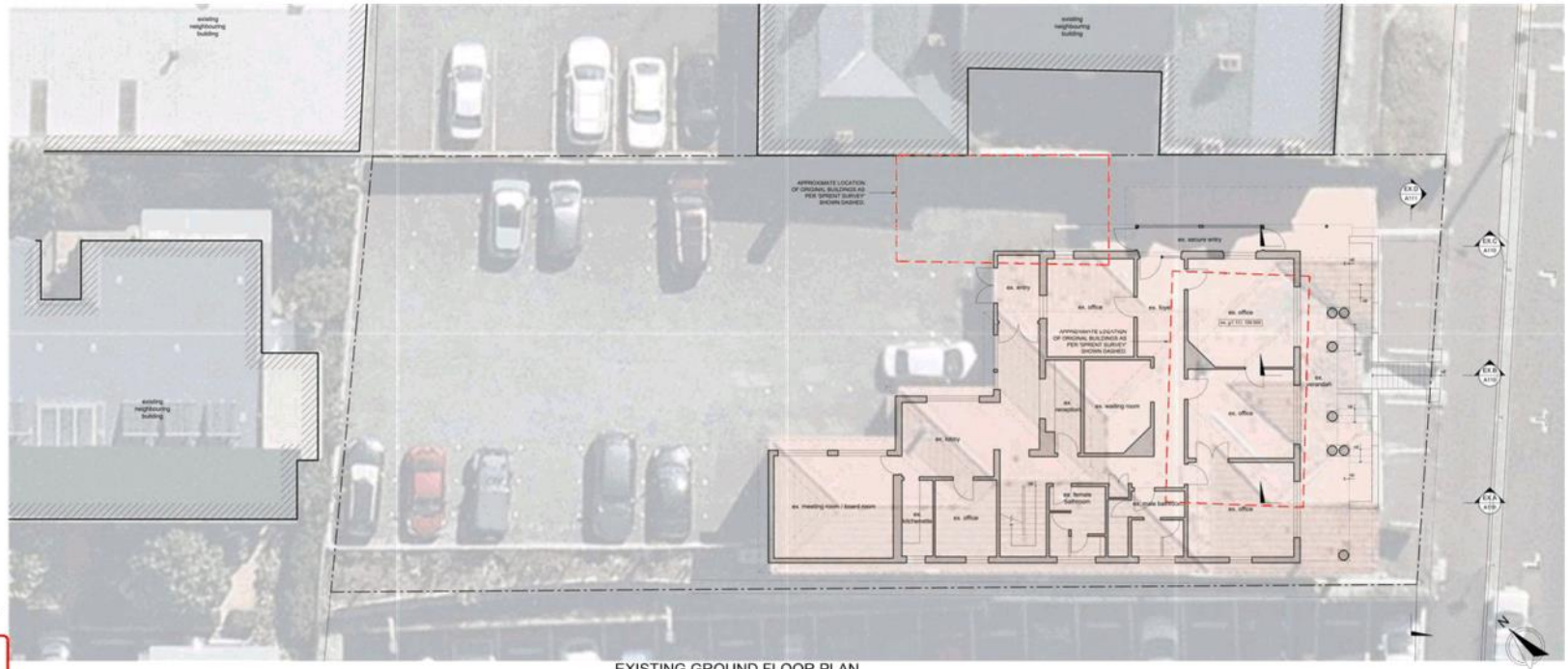
WALL LEGEND

EXISTING WALLS

NOT FOR CONSTRUCTION



EXISTING FIRST FLOOR PLAN
SCALE: 1:100



SCALE 1:100 AT A1 SHEET

IMPORTANT
DRAWINGS MUST BE
PRINTED & READ IN COLOUR

EXISTING GROUND FLOOR PLAN
SCALE: 1:100

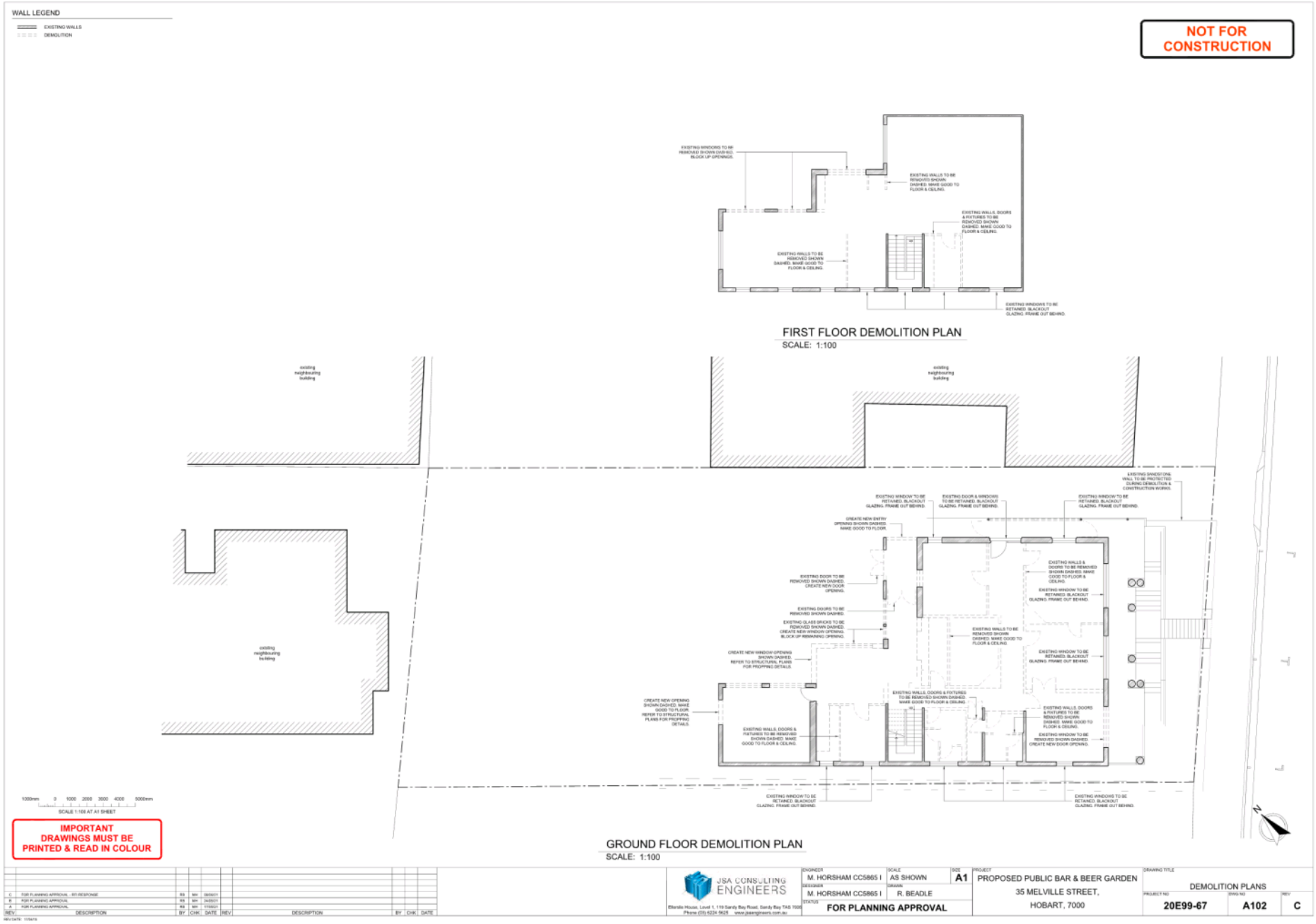
REV	DESCRIPTION	BY	CHK	DATE
C	TOP PLANNING APPROVAL - RFI RESPONSE	RB	MH	09/8/21
B	FOR PLANNING APPROVAL	RB	MH	04/8/21
A	FOR PLANNING APPROVAL	RB	MH	17/5/21

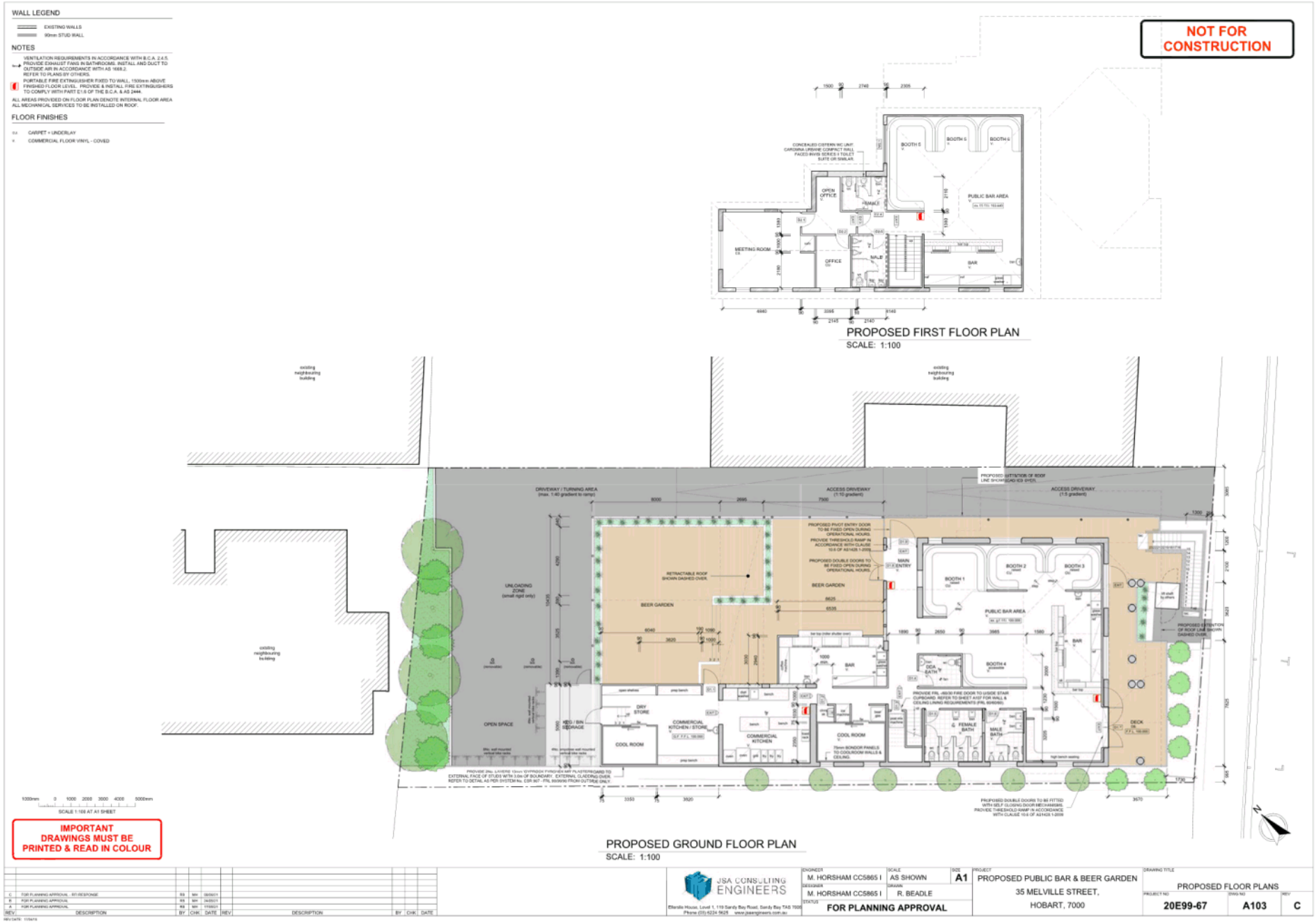
JSA CONSULTING ENGINEERS
Ellerslie House, Level 1, 119 Sandy Bay Road, Sandy Bay TAS 7005
Phone (03) 6234 9625 www.jsaengineers.com.au

ENGINEER: M. HORSHAM CC5865 I	SCALE: AS SHOWN	SIZE: A1	PROJECT: PROPOSED PUBLIC BAR & BEER GARDEN
DESIGNER: M. HORSHAM CC5865 I	DRAWN: R. BEADLE		35 MELVILLE STREET, HOBART, 7000
STATUS: FOR PLANNING APPROVAL			

DRAWING TITLE: EXISTING FLOOR PLANS

PROJECT NO	DWG NO	REV
20E99-67	A101	C


WALL LEGEND
EXISTING WALLS
DEMOLITION
NOT FOR CONSTRUCTION
FIRST FLOOR DEMOLITION PLAN
SCALE: 1:100
existing neighbouring building
existing neighbouring building
existing neighbouring building
GROUND FLOOR DEMOLITION PLAN
SCALE: 1:100
SCALE 1:100 AT A1 SHEET
IMPORTANT DRAWINGS MUST BE PRINTED & READ IN COLOUR
JSA CONSULTING ENGINEERS
M. HORSHAM CC5865 I
M. HORSHAM CC5865 I
AS SHOWN
R. BEADLE
A1
FOR PLANNING APPROVAL
PROPOSED PUBLIC BAR & BEER GARDEN
35 MELVILLE STREET,
HOBART, 7000
DEMOLITION PLANS
20E99-67
A102
C


WALL LEGEND
EXISTING WALLS
90mm STUD WALL
NOTES
VENTILATION REQUIREMENTS IN ACCORDANCE WITH B.C.A. 2.4.5. PROVIDE EXHAUST FANS IN BATHROOMS. INSTALL AND DUCT TO OUTSIDE AIR IN ACCORDANCE WITH AS 1668.2. REFER TO PLANS BY OTHERS.
PORTABLE FIRE EXTINGUISHER FIXED TO WALL, 1500mm ABOVE FINISHED FLOOR LEVEL. PROVIDE & INSTALL FIRE EXTINGUISHERS TO COMPLY WITH PART E1.6 OF THE B.C.A. & AS 2444.
ALL AREAS PROVIDED ON FLOOR PLAN DENOTE INTERNAL FLOOR AREA
ALL MECHANICAL SERVICES TO BE INSTALLED ON ROOF.
FLOOR FINISHES
CARPET + UNDERLAY
COMMERCIAL FLOOR VINYL - COVED
NOT FOR CONSTRUCTION
PROPOSED FIRST FLOOR PLAN
SCALE: 1:100
PROPOSED GROUND FLOOR PLAN
SCALE: 1:100
SCALE 1:100 AT A1 SHEET
IMPORTANT DRAWINGS MUST BE PRINTED & READ IN COLOUR
JSA CONSULTING ENGINEERS
M. HORSHAM CC5865 I
M. HORSHAM CC5865 I
R. BEADLE
AS SHOWN
A1
FOR PLANNING APPROVAL
PROPOSED PUBLIC BAR & BEER GARDEN
35 MELVILLE STREET,
HOBART, 7000
PROPOSED FLOOR PLANS
20E99-67
A103
C

EXISTING EXTERNAL FINISHES

A EXISTING TILE ROOF.
EXISTING NATURAL FINISH. COLOUR - 'RED'

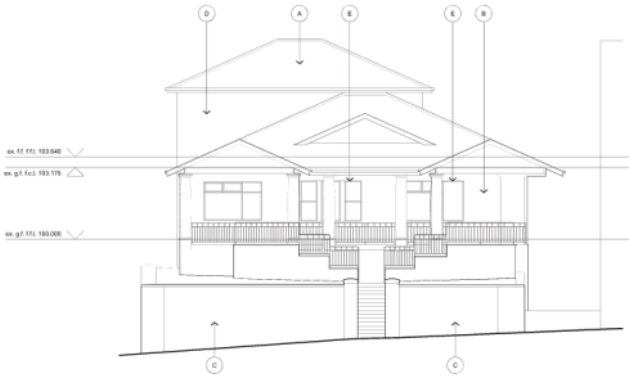
B EXISTING EXTERNAL BRICKWORK WALLS.
EXISTING NATURAL FINISH. COLOUR - 'RED'

C EXISTING STONEWORK RETAINING WALL.
EXISTING NATURAL FINISH. COLOUR - 'SANDSTONE'

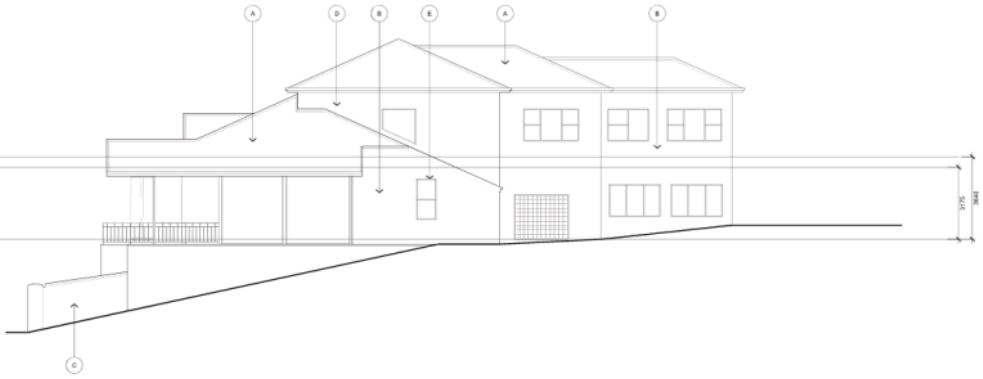
D EXISTING FIBRE CEMENT SHEET CLADDING.
EXISTING PAINTED FINISH. COLOUR - 'CREAM'

E EXISTING TIMBER FRAMED WINDOWS.
EXISTING PAINTED FINISH. COLOUR - 'CREAM'

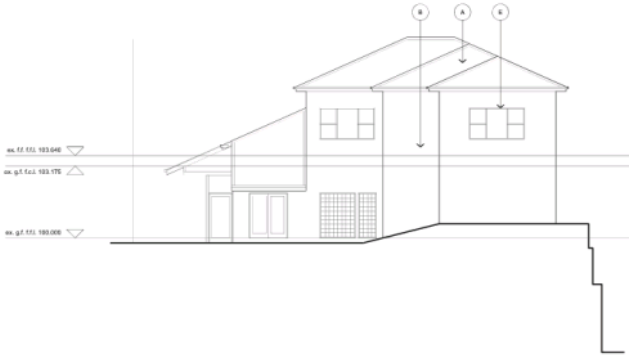
NOT FOR CONSTRUCTION



EXISTING SOUTH EAST ELEVATION
SCALE: 1:100



EXISTING NORTH EAST ELEVATION
SCALE: 1:100



EXISTING NORTH WEST ELEVATION
SCALE: 1:100

EXISTING SOUTH WEST ELEVATION
SCALE: 1:100

SCALE 1:100 AT A1 SHEET

IMPORTANT
DRAWINGS MUST BE
PRINTED & READ IN COLOUR

REV	DESCRIPTION	BY	CHK	DATE
C	FOR PLANNING APPROVAL - RFI RESPONSE	RB	MH	09/08/21
B	FOR PLANNING APPROVAL	RB	MH	24/05/21
A	FOR PLANNING APPROVAL	RB	MH	17/05/21

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ENGINEER: M. HORSHAM CC5865 I	SCALE: AS SHOWN	SIZE: A1	PROJECT: PROPOSED PUBLIC BAR & BEER GARDEN
DESIGNER: M. HORSHAM CC5865 I	DRAWN: R. BEADLE		35 MELVILLE STREET, HOBART, 7000
STATUS: FOR PLANNING APPROVAL			

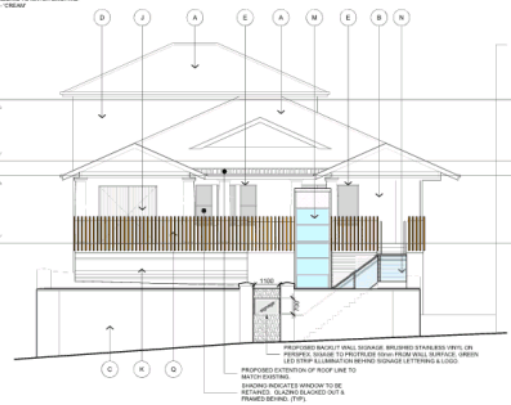
DRAWING TITLE: EXISTING ELEVATIONS

PROJECT NO	DWG NO	REV
20E99-67	A104	C

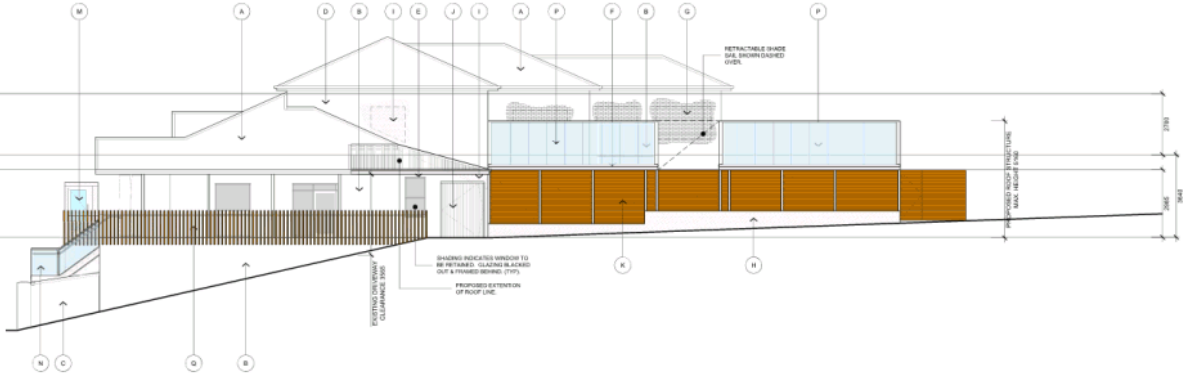
PROPOSED EXTERNAL FINISHES

A EXISTING TILE ROOF. EXISTING NATURAL FINISH. COLOUR - 'RED'
B EXISTING EXTERNAL BRICKWORK WALLS. EXISTING NATURAL FINISH. COLOUR - 'RED'
C EXISTING STONEWORK RETAINING WALL. EXISTING NATURAL FINISH. COLOUR - 'SANDSTONE'
D EXISTING FIBRE CEMENT SHEET CLADDING. EXISTING PAINTED FINISH. COLOUR - 'CREAM'
E EXISTING TIMBER FRAMED WINDOWS. EXISTING PAINTED FINISH. COLOUR - 'CREAM'
F CUSTOM ORB ROOF SHEETING, FLASHINGS & GUTTERING. COLORBOND FINISH. COLOUR 'MONUMENT'
G BRICKWORK TO MATCH EXISTING. NATURAL FINISH. COLOUR - 'RED'
H BLOCKWORK RETAINING WALLS. RENDERED FINISH. COLOUR - 'RED'
I FIBRE CEMENT SHEET CLADDING TO MATCH EXISTING. PAINTED FINISH. COLOUR - 'CREAM'
J SOLID CORE TIMBER DOORS. NATURAL TIMBER FINISH. COLOUR 'WHITE'
K HORIZONTAL TIMBER SCREEN. MAX. 25% TRANSPARENCY. OILED FINISH.
L ALUMINIUM FRAMED DOUBLE GLAZED WINDOWS. POWDERCOAT FINISH. COLOUR - 'CREAM'
M CLASS / STEEL FRAMED LIFT SHAFT
N STEEL STAIR STRUCTURE, PAINTED FINISH. GLASS BALUSTRADE SYSTEM AS SELECTED
O STONE VENEER CLADDING SYSTEM TO MATCH EXISTING SANDSTONE
P POLYCARBONATE ROOF SHEETING. STANDING SEAM PROFILE. CLEAR FINISH.
Q VERTICAL TIMBER BALUSTRADE / SCREEN. MIN. 1.0m HIGH. OILED FINISH.

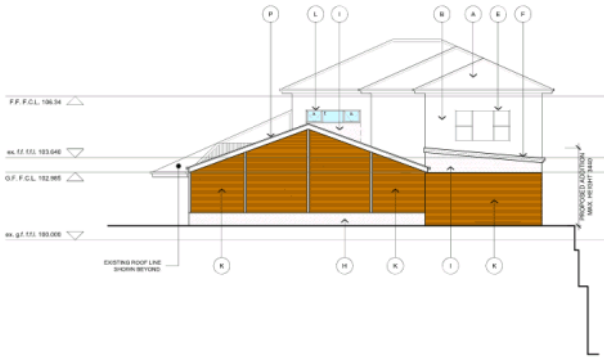
NOT FOR CONSTRUCTION



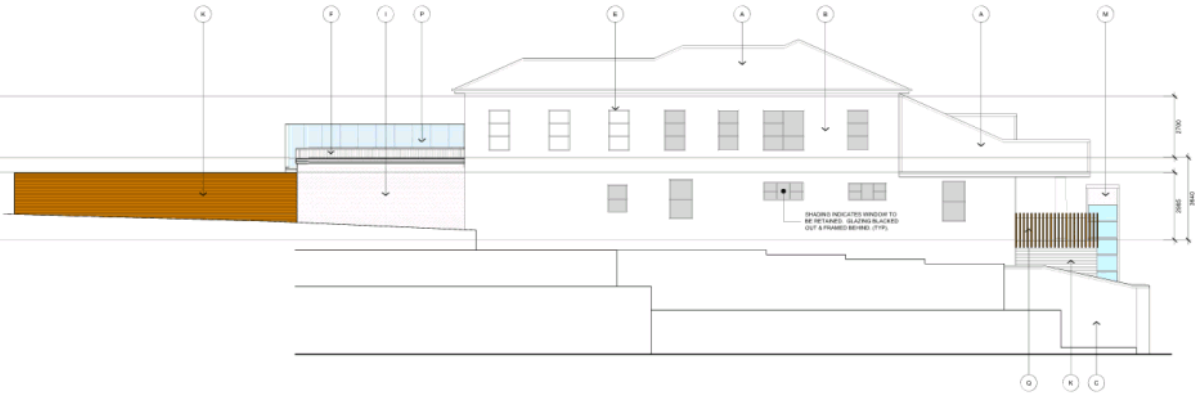
PROPOSED SOUTH EAST ELEVATION
SCALE: 1:100



PROPOSED NORTH EAST ELEVATION
SCALE: 1:100



PROPOSED NORTH WEST ELEVATION
SCALE: 1:100



PROPOSED SOUTH WEST ELEVATION
SCALE: 1:100

1000mm 0 1000 2000 3000 4000 5000mm
SCALE 1:100 AT A1 SHEET

IMPORTANT
DRAWINGS MUST BE
PRINTED & READ IN COLOUR

REV	DESCRIPTION	BY	CHK	DATE	REV	DESCRIPTION	BY	CHK	DATE
C	FOR PLANNING APPROVAL - RFI RESPONSE	RB	MH	09/9/21					
B	FOR PLANNING APPROVAL	RB	MH	24/8/21					
A	FOR PLANNING APPROVAL	RB	MH	17/8/21					

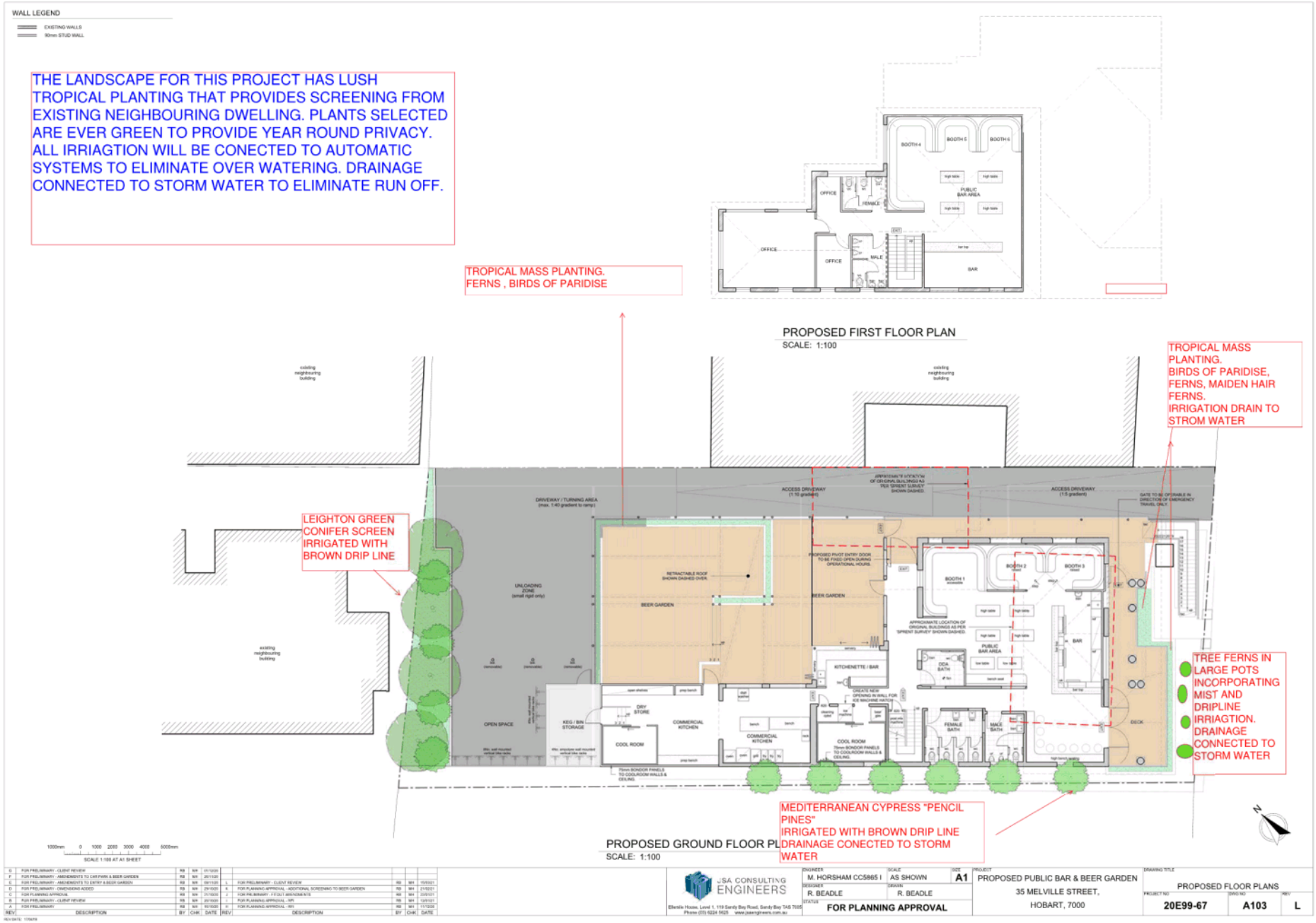
REV DATE: 17/8/21

JSA CONSULTING ENGINEERS
Ellerslie House, Level 1, 119 Sandy Bay Road, Sandy Bay TAS 7005
Phone (03) 6224 9625 www.jsaengineers.com.au

ENGINEER: M. HORSHAM CC5865 I	SCALE: AS SHOWN	SIZE: A1	PROJECT: PROPOSED PUBLIC BAR & BEER GARDEN, 35 MELVILLE STREET, HOBART, 7000
DESIGNER: M. HORSHAM CC5865 I	DRAWN: R. BEADLE		
STATUS: FOR PLANNING APPROVAL			

DRAWING TITLE: PROPOSED ELEVATIONS

PROJECT NO	DWG NO	REV
20E99-67	A105	C

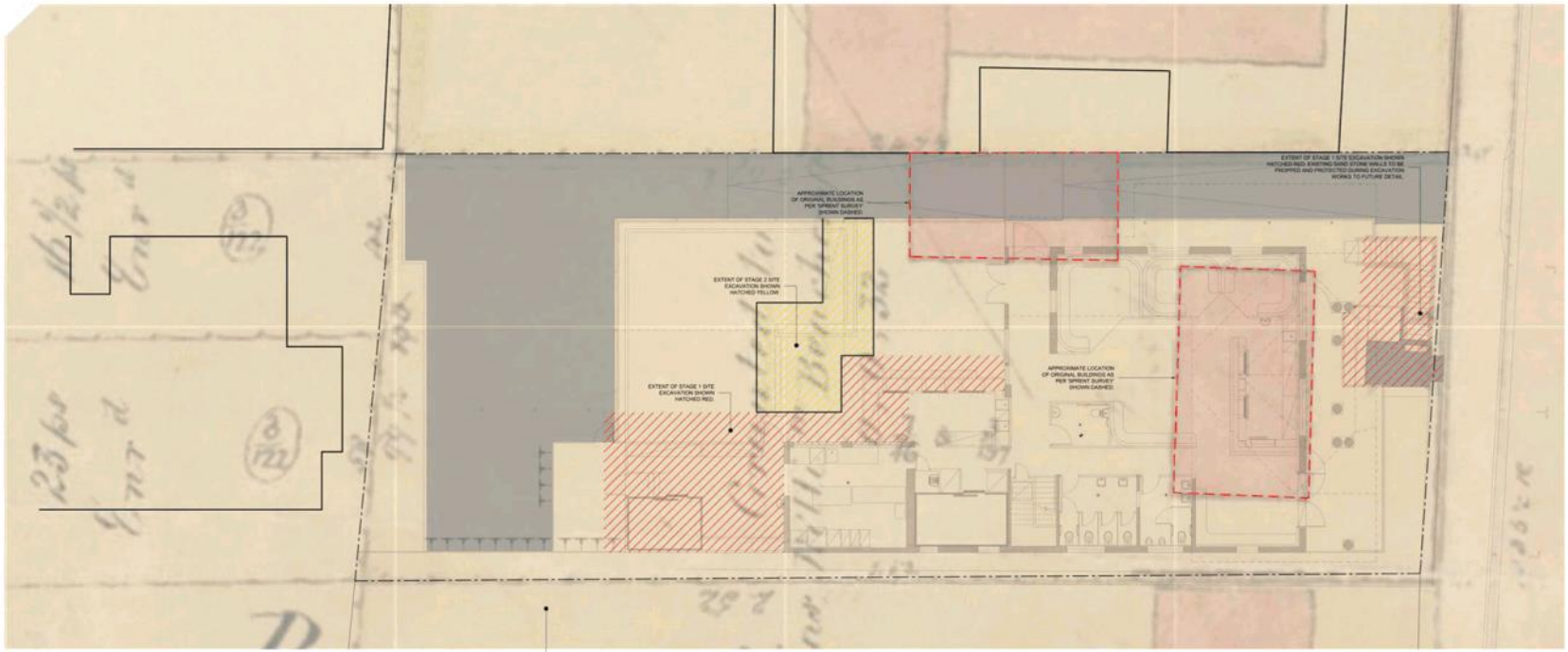

WALL LEGEND
EXISTING WALLS
90mm STUD WALL
THE LANDSCAPE FOR THIS PROJECT HAS LUSH TROPICAL PLANTING THAT PROVIDES SCREENING FROM EXISTING NEIGHBOURING DWELLING. PLANTS SELECTED ARE EVER GREEN TO PROVIDE YEAR ROUND PRIVACY. ALL IRRIAGTION WILL BE CONECTED TO AUTOMATIC SYSTEMS TO ELIMINATE OVER WATERING. DRAINAGE CONNECTED TO STORM WATER TO ELIMINATE RUN OFF.
TROPICAL MASS PLANTING.
FERNS , BIRDS OF PARIDISE
PROPOSED FIRST FLOOR PLAN
SCALE: 1:100
TROPICAL MASS PLANTING.
BIRDS OF PARIDISE,
FERNS, MAIDEN HAIR FERNS.
IRRIGATION DRAIN TO STROM WATER
LEIGHTON GREEN CONIFER SCREEN IRRIGATED WITH BROWN DRIP LINE
TREE FERNS IN LARGE POTS INCORPORATING MIST AND DRIPLINE IRRIAGTION. DRAINAGE CONNECTED TO STORM WATER
MEDITERRANEAN CYPRESS "PENCIL PINES"
IRRIGATED WITH BROWN DRIP LINE
DRAINAGE CONECTED TO STORM WATER
PROPOSED GROUND FLOOR PL
SCALE: 1:100
JSA CONSULTING ENGINEERS
M. HORSHAM CC5865 I
AS SHOWN
A1
R. BEADLE
R. BEADLE
FOR PLANNING APPROVAL
PROPOSED PUBLIC BAR & BEER GARDEN
35 MELVILLE STREET,
HOBART, 7000
PROPOSED FLOOR PLANS
20E99-67
A103
L

NOTE:
ALL EXCAVATION ONSITE **MUST** BE MONITORED BY A SUITABLE QUALIFIED ARCHAEOLOGIST ON SITE.
SHOULD ANY FEATURES OR DEPOSITS OF AN ARCHAEOLOGICAL NATURE BE DISCOVERED ON SITE DURING EXCAVATION OR DISTURBANCE:

1. ALL EXCAVATION AND / OR DISTURBANCE MUST STOP IMMEDIATELY; AND
2. A QUALIFIED ARCHAEOLOGIST MUST BE ENGAGED TO/M PROVIDE ADVICE AND ASSESSMENT OF THE FEATURES AND / OR DEPOSITS DISCOVERED AND MAKE RECOMMENDATIONS ON FURTHER EXCAVATION AND / OR DISTURBANCE; AND
3. ALL AND ANY RECOMMENDATIONS MADE BY THE ARCHEOLOGIST ENGAGED IN ACCORDANCE WITH PARAGRAPH (2) ABOVE MUST BE COMPLIED WITH IN FULL; AND
4. ALL FEATURES AND / OR DEPOSITS DISCOVERED MUST BE REPORTED TO THE COUNCIL WITHIN 1 DAY OF THE DISCOVERY; AND
5. A COPY OF THE ARCHAEOLOGISTS ADVICE, ASSESSMENT AND RECOMMENDATIONS OBTAINED IN ACCORDANCE WITH PARAGRAPH (2) ABOVE MUST BE PROVIDED TO COUNCIL WITHIN 60 DAYS OF RECEIPT OF THE ADVICE, ASSESSMENT AND RECOMMENDATIONS.

EXCAVATION AND / OR DISTURBANCE MUST NOT RECOMMENCE UNLESS AND UNTIL APPROVAL IS GRANTED FROM THE COUNCIL.

NOT FOR CONSTRUCTION



SITE WORKS PLAN
SCALE: 1:100

1000mm 0 1000 2000 3000 4000 5000mm
SCALE 1:100 AT A1 SHEET

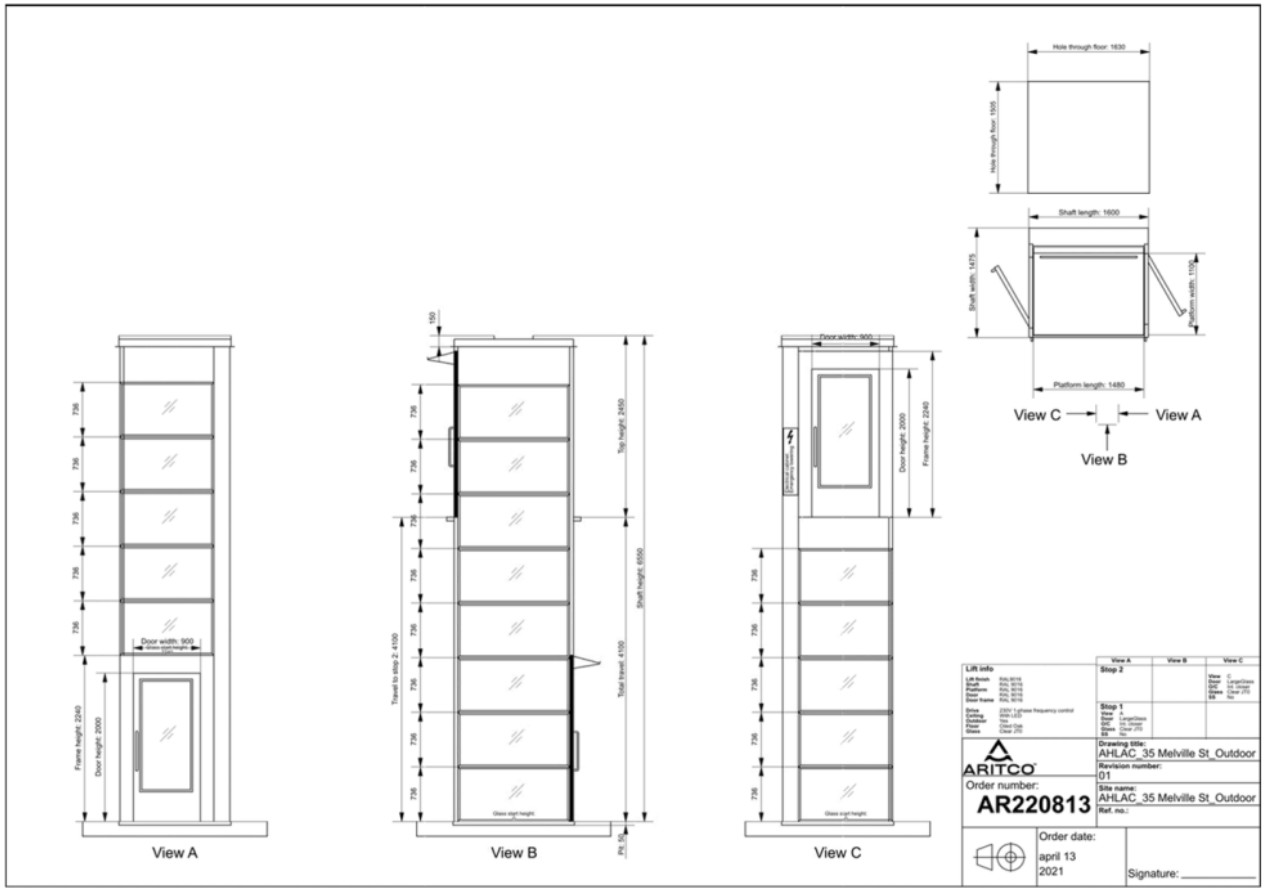
IMPORTANT
DRAWINGS MUST BE
PRINTED & READ IN COLOUR

REV	DESCRIPTION	BY	CHK	DATE	REV	DESCRIPTION	BY	CHK	DATE
E	FOR PLANNING APPROVAL - RFI RESPONSE	RB	WR	17/08/21					
D	FOR PLANNING APPROVAL - RFI RESPONSE	RB	WR	09/08/21					
C	FOR PLANNING APPROVAL - RFI RESPONSE	RB	WR	09/08/21					
B	FOR PLANNING APPROVAL	RB	WR	24/05/21					
A	FOR PLANNING APPROVAL	RB	WR	11/05/21					

SA CONSULTING ENGINEERS
Ellerslie House, Level 1, 119 Sandy Bay Road, Sandy Bay TAS 7005
Phone (03) 6224 9625 www.saengineers.com.au

ENGINEER: M. HORSHAM CC5865 I	SCALE: AS SHOWN	SIZE: A1	PROJECT: PROPOSED PUBLIC BAR & BEER GARDEN
DESIGNER: M. HORSHAM CC5865 I	DRAWN: R. BEADLE		35 MELVILLE STREET, HOBART, 7000
STATUS: FOR PLANNING APPROVAL			

DRAWING TITLE: SITE WORKS PLAN
PROJECT NO: 20E99-67 | DWG NO: A004 | REV: E


Hole through floor: 1630
Hole through floor: 1595
Shaft length: 1600
Shaft width: 1475
Platform width: 1100
Platform length: 1480
View C
View A
View B
Door width: 900
Frame height: 2240
Door height: 2000
Travel to stop 2: 4100
Top height: 2450
Shaft height: 6500
Total travel: 4100
Pit: 150
Lift info
Stop 2
Stop 1
ARITCO
Order number:
AR220813
Drawing title:
AHLAC_35 Melville St_Outdoor
Revision number:
01
Site name:
AHLAC_35 Melville St_Outdoor
Ref. no.:
Order date:
april 13
2021
Signature:

Equality Building

16 June 2021

Robert Beadle
Senior Technical Designer
JSA Consulting Engineers
Ellerslie House, Level 1
119 Sandy Bay Road
Sandy Bay Tas 7005

Dear Mr Beadle

Opinion on access to the development at 35 Melville St

Thank you for your request for an opinion on the provision of access for people with mobility disability to the development at 35 Melville St, in particular, matters relating to the application of discrimination and building law and heritage considerations.

Information on my expertise and experience is included in Appendix 1.

Introduction
The project involves the re-development of what was originally a residential building and then Class 5 (offices) building to become a Class 6 building to be used as a public bar with associated toilet facilities and beer garden.

I understand the area is designated a Commercial zone for planning purposes.

While 35 Melville St is not listed on the Tasmanian Heritage Register, it is within an area designated under the broad heading 'Places of Archaeological Potential' and the stone wall in front of the building is listed as Item 2050 in the Hobart Interim Planning Scheme.

This report considers two aspects of the development. Firstly, the requirements under the National Construction Code (NCC) and *Disability (Access to Premises – buildings) Standards 2010* (Premises Standards) to provide access to the building and into the building through the principal pedestrian entrance. Second, the relationship between obligations under the Premises Standards and matters relating to heritage protection.

574 Nelson Road, Mount Nelson 7007 **T**: 0400 577 991
E: michael@equalitybuilding.com.au **ABN**: 70 150 241 213

Relevant laws and regulations – access to the building

The triggers that require access to be provided from the allotment boundary footpath on Melville Street to the building are found in the *Building Act 2016* (Tas) section 53 and 55.

Section 53[1] requires that if more than half the volume of an existing building is subject to building work, the owner of the building must ensure that the entire building, as part of that building work, is brought into compliance with the applicable provisions of the NCC.

In addition, section 55[2] refers to change of building use and classification.

Clause 55 requires that where there is a change of use (Classification), as is the case here, the building must comply with the relevant provisions of the NCC appropriate to the new Classification.

In both cases, the building surveyor may exercise discretion in relation to the full application of the NCC. The building surveyor must, however, consider the effect of any exercise of discretion on the amenity of the building for occupants including people with disability.

Once these triggers have been activated, the NCC requires under clause D3.2[3] that an accessible path of travel must be provided from the allotment boundary to the building and through the principal pedestrian entrance.

An accessible path of travel must consist of either level access from the allotment boundary, or a compliant ramp and/or lift if there is a change in level.

---

1 See Appendix 2

2 See Appendix 3

3 Clause D3.2 states in part:

(1) An *accessway* must be provided to a building *required* to be *accessible*:

(a) from the main points of a pedestrian entry at the allotment boundary; and

(b) from another *accessible* building connected by a pedestrian link; and

(c) from any *required accessible* carparking space on the allotment.

(2) In a building required to be accessible an accessway must be provided through the principal pedestrian entrance, and …

In this case, there is a change in level between the footpath at the allotment boundary and the principal pedestrian entrance to the building of more than 4.1 m.

Because of fatigue issues, Clause D3.11[4] of the NCC prohibits the use of ramps where there is a vertical rise of more than 3.6 m. As a result, the only option to achieve compliance with the requirements of the NCC would be to install a lift.

In some circumstances it may be possible to propose an alternative to the requirement for access through the principal pedestrian entrance if an amenable alternative were available or if providing access would result in an unjustifiable hardship to the owner.

For the following reasons, it is my assessment that no amenable alternative is available.

Access into the building using the driveway at the side of the building would require wheelchair users to negotiate a long vehicle ramp that in places has a gradient of 1 in 5 (the maximum gradient for a safe ramp is 1 in 14). Access from the other side of the building would require use of another owner's property and the installation of a lift.

The owner could seek a ruling from the Resource Management and Planning Appeal Tribunal (RMPAT) concerning the question of full application of the NCC on the grounds of 'unjustifiable hardship'. In my view, such an appeal would not be successful as the applicant would have to show both technical infeasibility and cost burden at a very high level.

In my view the installation of a lift as shown in the plans is the most amenable and feasible way of providing compliant access to the building.

Matters relating to heritage protection
The plans show that the provision of access to the principal pedestrian entrance from the allotment boundary on Melville Street

---

[4] **D3.11 Ramps**

On an accessway:

(a) a series of connected ramps must not have a combined vertical rise of more than 3.6 m; …

would involve the installation of a lift behind the wall that is identified as having heritage value in the streetscape.

The installation of the lift would meet obligations under both the NCC and Premises Standards by providing equitable and dignified access to the building.

A question has been raised, however, about the effect the installation would have on the heritage value of the wall.

Photo 1 shows the building and wall

The issue of the relationship between discrimination law and heritage protection has been addressed in a number of publications, most notably the Australian Human Rights Commission's *Frequently asked Questions* (FaQ)[5], the *Guideline on the application of the Premises Standards* (Guideline)[6] and *Improving access to Heritage Buildings*[7].

The FaQ states, in part:

5 <https://humanrights.gov.au/our-work/disability-rights/frequently-asked-questions-access-premises#heritage>
6 <https://humanrights.gov.au/our-work/disability-rights/guidelines-application-premises-standards>
7 <https://www.access.asn.au/accessibility-resources/articles-links-publications/australian-articles-and-publications/details/27/11/improving-access-to-heritage-buildings>

> Registration or claim of heritage value in a building or other items does not create an exemption from the *Disability Discrimination Act* (DDA) and is not in itself a defence.
>
> As shown by decisions under the DDA to date, however, heritage issues can be taken into account in determining whether barriers to access are unreasonable (which is one of the elements required before a finding can be made of indirect discrimination), and can also be taken into account in relation to the defence of unjustifiable hardship where this applies.

The Guideline states, in part:

> The fact that a building might have a heritage listing is not in itself sufficient to justify a claim that providing access might result in unjustifiable hardship.

The publication *Improving access to Heritage Buildings* states, in part:

> The legal view is that the DDA will override Commonwealth, state or territory heritage legislation. The only exception to this would be if implementing proposed changes to provide access can be shown to constitute unjustifiable hardship. This does not include difficulty or cost if a reasonable access solution is achieved. However, alteration or removal of a major aspect of significance in order to provide access could constitute an argument of unjustifiable hardship.

All three publications clearly state that the heritage status of a building or part of a building is not in itself justification for not providing equitable and compliant access.

In some situations, however, providing equitable access might be unreasonable or result in unjustifiable hardship. This may be the case if creating access had a significant effect on essential or major heritage features.

The Premises Standards at paragraph 4.1(3) identify issues that may be considered in relation to a claim of unjustifiable hardship including:

> (l) if detriment under paragraph (k) involves loss of heritage significance — the extent to which the heritage features of the building are essential, or merely incidental, to the heritage significance of the building;

The Guideline provides further guidance:

> Paragraph 4.1(3)(l) [of the Premises Standards], however, proposes that one factor that may be relevant to an assessment of a claim of unjustifiable hardship is evidence that compliance would detrimentally affect heritage features of the building that are 'essential' to the heritage significance of the building.
>
> The intention of this provision is to recognise that an unjustifiable hardship defence may be valid where compliance would substantially detract from the heritage significance of the building by modifying or destroying features of 'essential' heritage significance to the building.
>
> However, the fact that compliance will detrimentally affect elements of the building that are 'merely incidental' to the heritage significance of the building is unlikely to validate a defence of unjustifiable hardship.
>
> Assessment of unjustifiable hardship in relation to heritage buildings will in part turn on the reasons for the heritage significance of the building.

Unfortunately, the question of whether or not a defence of unjustifiable hardship is made out can only be legally determined in relation to an actual complaint of discrimination arising from access not being provided.

This leaves us in a situation where in each case stakeholders need to undertake a careful assessment of all factors to try to achieve a solution that both protects the rights of people with disability, but also respects the value of heritage.

The Guideline refers to a process described in a Heritage Council of Victoria Technical Leaflet. That process involves the following:

> The recommended process for developing and implementing a scheme for improving access to a heritage place is as follows:
>
> 1. Review the significance of the heritage building or place, identify the elements of significance and have a suitably qualified heritage consultant prepare or update a conservation management plan (CMP). CMPs should define policies to assist in resolving how access can be achieved and allow design solutions that meet the legislative requirements while retaining heritage significance.
> 2. Undertake an access audit, using an access consultant if necessary, to determine the place's existing and required level

of accessibility. Not only to the principal pedestrian entry and other parts of the building, but also to services offered and to information provided.

3. Develop accessibility options using an architect with experience of working with heritage places and testing these against the CMP or statement of significance. The option that maximises access but has the minimum impact on heritage significance should generally be selected.

That is essentially what is being done here in relation to this application.

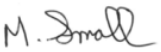
From my perspective there are two issues to consider. The first is whether or not providing access will 'detrimentally affect heritage features of the building that are essential to the heritage significance of the building'.

The second is whether the visual impact of the lift[8] would 'substantially detract from the heritage significance of the building'.

My opinion is that in this case:

- assuming the excavation needed for the lift installation is undertaken safely and effectively, there will be no impact on the heritage-related fabric of the wall;
- any aesthetic impact of the lift installation on the streetscape and wall itself can be minimised by careful selection of materials to be used and is secondary to the legal obligation to provide non-discriminatory access to the building.

Yours sincerely



Michael Small

[8] See Appendix 4 for photographs of examples of lifts installed at older buildings.

Appendix 1

Expertise and experience

Having spent ten years working on the development of the *Disability (Access to Premises – buildings) Standards 2010* (Premises Standards) through membership of the Building Access Policy Committee, its technical committee and a number of Standards Australia committees, I offer a unique expertise in the area of building accessibility and understanding of the intent of the Premises Standards and corresponding changes to the Building Code of Australia (BCA).

In my previous role at the Australian Human Rights Commission, I developed a number of valuable resources to assist industry and the community better understand the requirements for equitable access and how to achieve compliance with legal obligations. This included:

- Advisory Notes on Access to Premises
- Guideline on access to buildings and services
- The good the bad and the ugly - CD
- Developing an effective action plan

In 2011, I prepared the *Guideline on the application of the Premises Standards* that is the most authoritative reference material on the Premises Standards currently available to industry in Australia. In 2013, I completed an update of this Guideline for the Australian Human Rights Commission in the light of application issues raised since its implementation.

In 2011, I also drafted *Module Five - Understanding the Disability Access Provisions* of the Australian Building Codes Board's Awareness Resource Kit on the BCA.

Over the past ten years I have delivered several hundred seminars, workshops and keynote addresses to members of organisations including the Property Council of Australia, the Australian Institute of Building Surveyors, the Australian Institute of Architects, Master Builders Australia and the Australian Building Codes Board (ABCB).

I am an Associate member of the Association of Consultants in Access Australia (ACAA) and in 2012 was awarded the Minister's Award for Excellence in Disability Reform. In 2016, I was awarded a Churchill Fellowship to study building access in north America and Europe.

I established my access consultancy business in July 2011 and current and past clients include:

- Australian Building Codes Board
- Australian Institute of Building Surveyors
- Standards Australia
- Institute of Access Training Australia
- Victorian Government
- Master Builders Tasmania
- Stockland
- Lend Lease
- Overton Projects
- Galloway Building Surveyors
- Lee Tyers Building Surveyors
- Milestone Building Code Certifiers
- 1 Plus 2 Architects
- CIRCA Architects
- ARTAS
- MSJ Architecture – Tamworth Hospital
- Hobart City Council
- Wollongong City Council
- Marrickville Council
- Devonport City Council
- RACT
- CITTA Property Group

Previous consultancies have included providing access advice in China and Sri Lanka and compliance assessment in relation to a wide range of heritage listed buildings including former churches, schools and University buildings.

Appendix 2

Section 53. Existing buildings to be upgraded if altered

(1) This section applies to building work performed on a building if, within the previous 3 years, building work has been performed or permitted on more than half of the original volume of the building.

(1A) This section does not apply to building work performed on a building if –

(a) the building work is being performed to repair damage to the building –

(i) caused by fire, wind, flood or storm or the subsidence of land, other than a subsidence caused by a failure of the owner or occupier of the building to maintain the land; or

(ii) that has not been caused by an act, or a failure to act, of the owner or an occupier of the building; and

(b) the building work is necessary in order for the building to be made suitable for habitation or safe occupation, or for use for the purposes for which it was being used before the damage referred to in paragraph (a) was caused to the building; and

(c) the building work consists of work to restore the building to the condition it was in before the damage referred to in paragraph (a) was caused to the building; and

(d) the materials, components, installations, and equipment, that are used in the building work are substantially similar to those used, in the part of the building to which the works relate, before the damage referred to in paragraph (a) was caused to the building.

(1B) This section does not apply to a building, or a class of buildings, that a determination of the Director of Building Control states are exempt from the requirements of this section.

(2) If building work to which this section applies is performed on an existing building, the owner of the building must ensure that the entire building, as part of that building work, is brought into compliance with this Act and the applicable provisions of the National Construction Code.

(3) The building surveyor, engaged in respect of building work to which this section applies, may consent to partial compliance with the applicable provisions of the National Construction Code in respect of the work if the building surveyor is satisfied that the partial compliance is appropriate, after taking into account –

(a) the structural adequacy of the existing building; and

(b) the requirements necessary to make reasonable provision for –

(i) the amenity of the building and the safety and health of the people using, or intending to use, the building; and

(ii) appropriate measures to ensure that fire cannot spread to, or from, any adjoining building; and

(c) whether the building is a historic building.

(4) The relevant building surveyor must not consent to partial compliance under subsection (3) in respect of building work on an existing building to which this section applies, if that work involves the extension of the existing building –

(a) where the floor area of the extension exceeds –

(i) 25 percent of the floor area of the building before the commencement of the extension; or

(ii) 1000 square metres; or

(b) that a determination of the Director of Building Control makes ineligible for partial compliance under this section.

Appendix 3

Section 55. Change of building use or building classification

(1) In this section –

change of use, in respect of the use of an existing building, includes the re-use of a building where a function control authority is required, under another Act, to provide new registration, licensing or approval for that use.

(2) A person must not cause the change of the use of an existing building, whether erected before or after the commencement of this Act, if the new use requires –

(a) a change of classification of the building; or

(b) the building to comply with different requirements within its existing classification –

and the building does not comply with this Act or the relevant provisions of the National Construction Code in respect of the changed use. .....

(4) A building surveyor may consent to partial compliance with this Act in respect of an application for an occupancy permit that relates to a change of use of a building if the building surveyor is satisfied that the partial compliance is appropriate after taking into account –

(a) the amenity of the building and the safety and health of the people using, or intending to use, the building; and

(b) the risk of the spread of fire to, or from, the building and any adjoining building.

Appendix 4 – examples of lifts attached to older buildings




Traffic Impact Statement

Change of use

35 Melville Street, Hobart

Lounge and Garden Bars

Hubble Traffic

May 2021

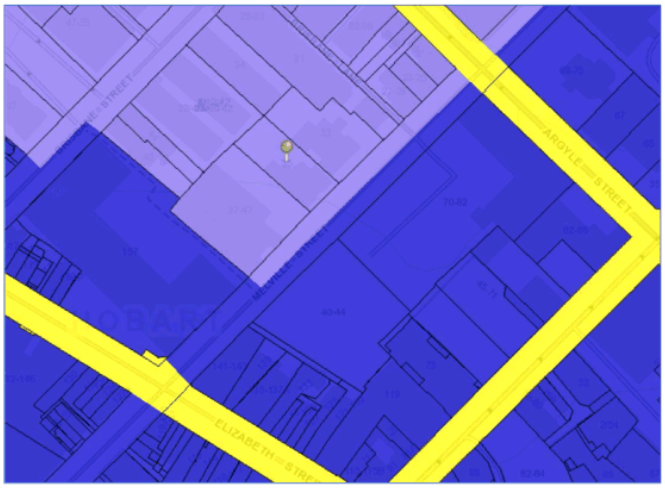
Introduction

The City of Hobart recently approved a development application for 35 Melville Street, Hobart, for a change of use from office space, to lounge and garden bars. Derek Rolls Contracting has engaged Hubble Traffic, to prepare a second Traffic Impact Statement to address an additional increase of the garden bar area, which reduces the number of on-site car parking.

Land-use zoning

Under the planning scheme, 35 Melville Street is located within the commercial zone; however directly opposite this site and two properties to the west, the land-use is zoned as Central Business, which means this site is located on the fringe of the inner-city business precinct.

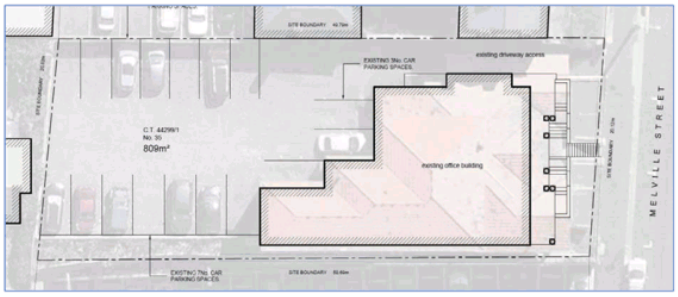
The diagram below is an extract from the zoning overlay of the planning scheme, with the highlighted blue area being the Central Business Zone, with the Commercial Zone highlighted in light purple.



Hubble Traffic
T: 0416 064755
E: Hubbletraffic@outlook.com
W: Hubbletraffic.com.au

Development proposal

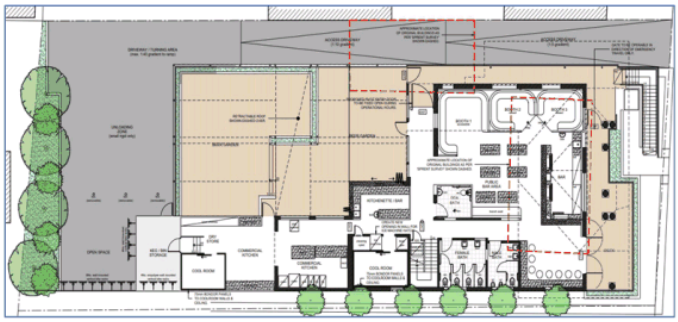
The building at 35 Melville Street is two storeys and currently operates as office space; with some 17 on-site parking spaces located at the rear of the building, with direct vehicular access to Melville Street, as shown in the site plan below.



To incorporate the garden bar, the rear space will be reconfigured to provide an unloading zone for a small delivery vehicle, with sufficient space to accommodate loading and unloading of deliveries, and a vehicle turning area. This is a change from the approved application which included six on-site parking spaces for staff parking, one disabled customer space, and one loading bay.

With this change of use and reconfiguration of the rear parking area, the expected number of traffic movements generated from this property will be less than the current use.

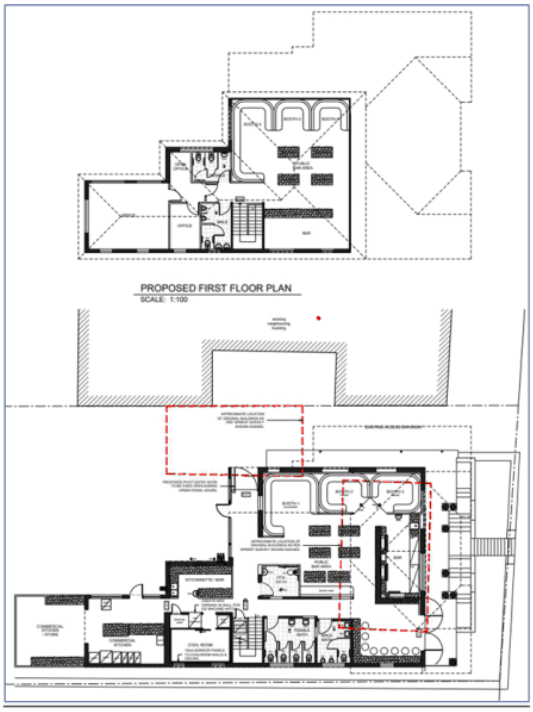
The proposed on-site parking arrangement to incorporate the garden bar is shown below.



The development site will include the following use and hours of operation:

- Garden bar 11am to midnight (7 days)
- Lounge bar 5pm to midnight (Monday to Thursday)
- Lounge bar 1pm to midnight (Friday to Sunday)

Proposed floor plans



Required number of on-site parking spaces

Under the planning scheme E6 Parking and Access Code, with Hotel Industry as the user class, table E6.1 specifies:

- public bar - one parking space per 3 square metres of floor space
- beer garden - one parking space per 6 square metres of floor space, and
- lounge bar - one parking space per 8 square metres of floor space.

Floor space allocation	Floor Area	Planning scheme requirements	Parking spaces
Garden bar	159m^2	1 space per 6m^2	27 spaces
Lower floor – public bar	88.97m^2	1 space per 3m^2	29 spaces
Lower floor – Lounge	31.6m^2	1 space per 8m^2	4 spaces
Upper floor – music bar	63.88m^2	1 space per 3m^2	21 spaces
Front deck	34.72m^2	1 space per 8m^2	4 spaces
Total	**315.22m^2**		**85 spaces**

Based on the above floor space allocation, the development requires 85 parking spaces under the planning scheme.

The two office spaces on the first floor will be used by staff associated with this development or used for storage and will not generate a further parking demand.

Expected customer travel mode

Having consideration to the development sites close proximity to the central business precinct, the expected demand for parking spaces is considered to be less than the planning scheme requirements. Development site patronage is expected to include local residents, and employees from various local businesses, with these users not expected to create a parking demand, as detailed below.

- Residents from inner-city apartments are expected to walk to and from the development site; with the number of inner-city apartments increasing, this could represent a significant proportion of the customer base.
- Employees from local businesses will also not create a parking demand, as they will have off-street parking at their workplace; with this type of customer expected during lunchtime, and immediately after work.
- Similarly, employees from local businesses who travel to work via public transport, will also not create a parking demand.

With residents and local businesses anticipated to be the main customer base during the weekdays, the weekday parking demand is expected to be low.

Evening customers are likely to be drawn from outside the immediate area, and generally use alternative transport methods, including public transport when arriving, and taxi and ride sharing facilities. They are also expected to share on-street parking spaces that become available after the daytime land-use has finished.

Availability of on-street car parking

It is important to consider the availability of current parking supply in the surrounding area, and to optimise these spaces, before considering the need for additional parking spaces. For inner city areas it is more sustainable to maximise the use of current parking capacity, rather than provide additional off-street parking, which is usually uneconomical for small developments.

Shared parking takes advantage of the fact that most on-street parking spaces are only used part time by a particular motorist or group, and many spaces become vacant after that use has finished. Parking spaces can be shared among different buildings and land-use activities, for example: offices, retail, professional services, and banks, typically have a weekday peak, while restaurants, bars and cinemas have an evening peak.

Research from the Victorian Transport Policy Institute indicates that customers attending restaurants and bars will walk 350 metres (less than 5 minutes) to share on-street parking spaces.

To understand the availability of on-street parking spaces along the surrounding streets of the development site, a comprehensive on-street parking survey was conducted. The survey examined available spaces and parking demand located within 150 and 250 metres of the development site, with the following table summarising the collected parking data.

Streets	Number of parking spaces		Spaces available to be shared by another use			
	Metred Spaces	Spaces within loading zones	Friday 4:30pm	Friday 8:00pm	Saturday 1:00pm	Saturday 8:00pm
Within 150 metres	142	16	54	42	47	57
Between 150 and 250 metres	155	14	78	58	57	91
Total	**297**	**30**	**132**	**100**	**104**	**148**

During the day, the parking spaces are restricted to short term parking to cater for the local businesses, but these parking restrictions finish at 6:00pm for weekdays and Saturdays, while on Sundays the restrictions finish at 4:00pm. Similarly, spaces within the loading zones become available after the daytime use has finished.

The surveys were undertaken during the expected busier peaks for the proposed business, and found within 250 metres of the development site, a total of 297 parking spaces, with an additional 30 spaces within the loading zones.

During each of the survey periods, there were a minimum of 100 vacant parking spaces that could be used by the proposed business.

The surveys found that there is sufficient parking available along the surrounding streets, to easily meet the expected parking demand, which the proposed business is expected to generate.

Impact of additional parking

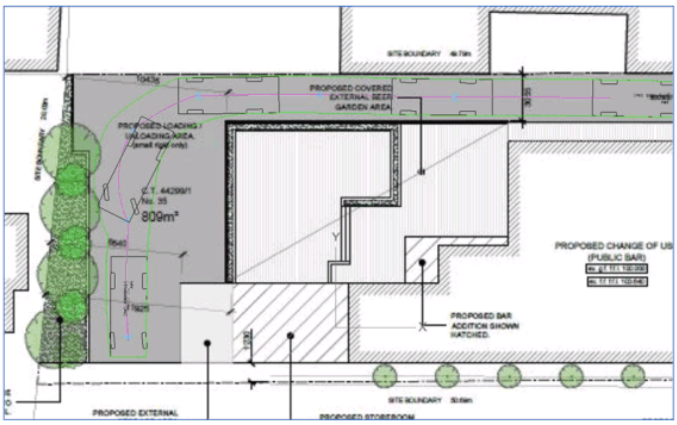
The additional parking demand generated by the proposed use, is not expected to have any adverse impact on adjacent commercial land-use activities or businesses, as the current parking restrictions during the day ensures there is appropriate vehicle turn-over.

On-site parking manoeuvrability

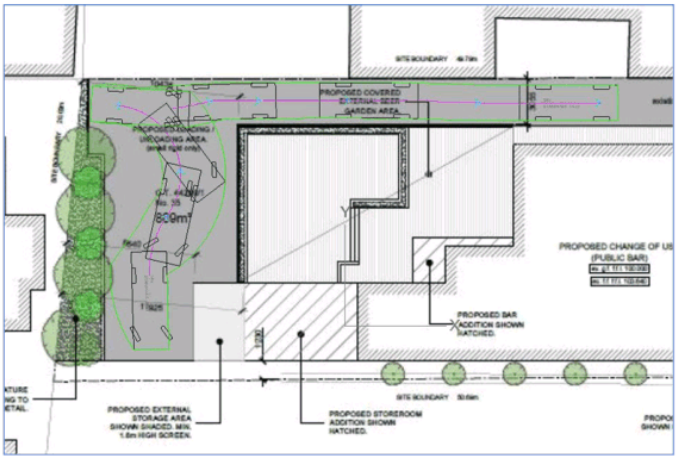
The developer has advised that due to site constraints all deliveries will be made using a 6.4 metre delivery vehicle.

A commercial parking space has been allocated at the rear of the property for deliveries. In the diagram below, Autoturn software demonstrates the vehicle swept path of a single unit vehicle (6.4 metres long), can manoeuvre into and out of the space, so that the vehicle can enter and leave the property in a forward driving position.

6.4 metre delivery van entering the site



6.4 metre delivery van turning around and leaving the site in a forward direction



Planning scheme

E5.5.1 Existing Road Access and Junctions

The reconfiguration of the development site rear area to a garden bar, will change the on-site parking allocation to one delivery space; with the annual average daily traffic movements to and from the site expected to decrease from the current use. Therefore, the proposed use meets the acceptable solution A3, with Melville Street operating under the general default speed limit of 50 km/h.

E6.6.1 Number of Car Parking Spaces

Under the user class for hotel industry, table 6.1 specifies the required number of parking spaces based on floor area of the proposed use; with 85 parking spaces being calculated as the required number under this scheme.

As this development is not supported with on-site parking and reliant on sharing the available on-street parking spaces, it must be assessed against the performance criteria P1.

Performance criteria	Assessment
The number of on-site parking spaces must be sufficient to meet the reasonable needs of users, having regards to all of the following:	
a) car park demand;	Based on the proposed floor area, the planning scheme requires 85 parking spaces. During the weekday, local residents and employees from the surrounding businesses are expected to be the main customers. These customers are thought to walk to and from the venue and are not expected to create a parking demand. Evening customers are likely to travel using alternative transport modes, such as taxi and ride sharing facilities, while customers using private vehicles would be accustomed to share available on-street parking spaces located within the surrounding streets.
b) the availability of on-street and public car parking in the locality;	A parking survey of the on-street parking supply and demand has been undertaken along the streets surrounding the development site. The survey found some 297 parking spaces are available during the day, and an additional 30 spaces become available after 6pm, when the loading zone time restrictions finish. The surveys found that at a minimum 100 parking spaces were vacant that could be shared with the proposed use. The survey demonstrated there is more than sufficient on-street parking available along the surrounding streets, to easily meet the expected demand generated by this change of use, without impacting other land-use developments.
c) the availability and frequency of public transport within 400 metres walking distance of the site;	Metro Tasmania currently operates regular bus services along both Argyle and Elizabeth Streets, with bus stops within 400 metres walking distance of the development site.

d) the availability and likely use of other modes of transport;	Other modes of transport are more likely during weekends and evenings, with customers expected to arrive and depart using taxi and ride sharing facilities, as found at other bars and food venues with an inner-city location. Customers from inner-city residential apartments are expected to walk to and from the site, reducing the parking demand. Employees from local businesses are not expected to create a parking demand, as they have alternative parking spaces associated with their work place, or use public transport to travel to and from their work place.
e) The availability and suitability of alternative arrangements for car parking provision;	The Vodaphone public multi-storey car park is located within 300 metres of the development site, which is walking distance. The multi-storey car park provides off-street parking, and is open 24 hours, 7 days a week.
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 parking spaces;	A comprehensive parking survey found that there are ample on-street parking spaces that can be shared between different land-uses. With the evening peak demand for this new use to occur outside the weekday demand generated by the current business activities.
g) Any car parking deficiencies or surplus associated with the existing use of the land;	None
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 or parking requirements, except in the case of substantial redevelopment of a site;	None
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;	A financial contribution is not considered warranted, given this assessment found more than sufficient on-street parking is available in close proximity of the property to meet the demand.
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 aware of any Council parking plan covering this area.

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 of more significant trees listed in the Significant Trees Schedule.	Not applicable.

E6.2 Number and class of Bicycle parking spaces required

With the current floor area being extended to increase the beer garden, the planning scheme requires on-site bicycle facilities to be provided for both employees and customers. Based on table 6.2, one bicycle parking area for each 25 square metres of bar floor area and one bicycle parking area for each 100 square metres of lounge or beer garden.

For employees, a locked compound with communal access using duplicate keys, will be provided on site at the rear of the building to meet the acceptable solution.

For customers, bicycle wheel frames suitable to cater for ten bicycles will be located at the rear of the site, to meet the acceptable solution.

Conclusion:

Removal of on-site customer parking, with the provision of one on-site delivery vehicle parking space at the rear of the building, with sufficient area to enable the vehicle to enter and leave the property in a forward driving position.

With no customer parking located within the development site, customers will need to share on-street parking spaces with other land-use developments. Sharing on-street parking spaces between different land-uses is a sustainable way to optimise the current parking supply, without the need to consider additional spaces.

The majority of the surrounding land-uses generate a parking demand during the day, while the proposed use will generate its highest parking demand at evenings.

With the development site located on the fringe of the central business precinct, the main customer base during the day, is expected to be generated from local residents and employees from local businesses. This customer base is not expected to create a parking demand, as they are likely to walk to and from the venue.

A comprehensive parking supply and demand survey of the surrounding streets within 250 metres walking distance of the development site, found there is sufficient available parking spaces to meet the expected demand.

The change of use of the existing building at 35 Melville Street, to increase the garden bar area is not expected to create any adverse safety, traffic, or amenity impacts. This proposed use is not dissimilar to other bars and hotels located within the inner-city blocks of Hobart, who also operate successfully sharing on-street parking spaces.

Overall, this impact assessment has concluded this proposed development can be supported on traffic grounds, as it is not expected to create any adverse traffic or parking issues.

Parking survey results

			Available on-street car parking space		Number vehicles parked				Available spaces			
		Number spaces		Loading zone spaces	Friday afternoon 4.30pm	Friday evening 8pm	Saturday 1pm	Saturday 8pm	Friday afternoon 4.30pm	Friday evening 8pm	Saturday 1pm	Saturday 8pm
Bribane St		Northern Side	10	2	4	12	7	8	6	0	3	4
		Southern Side	9	2	6	6	5	3	3	5	4	8
Elizabeth St	Brisbane to Melville	Western side	8	2	6	4	6	9	2	6	2	1
		Eastern side	11		7	11	11	10	4	0	0	1
	Melville to Bathurst	Western side	10	2	3	12	8	12	7	0	2	0
		Eastern side	10		4	9	3	5	6	1	7	5
Bathurst St	Elizabeth to Argle	Northern Side	17	3	14	15	16	13	3	5	1	7
		Southern Side	16	4	12	17	11	12	4	3	5	8
Argyle St	Bathurst to Melville	Western side	7		7	5	7	3	0	2	0	4
		Eastern side	7		6	6	4	1	1	1	3	6
	Meville to Brisbane	Western side	3	1	3	3	3	4	0	1	0	0
		Eastern side	6		6	4	1	6	0	2	5	0
Melville St	Elizabeth to Argle	Northern Side	18		4	8	5	5	14	10	13	13
		Southern Side	10		6	4	8	9	4	6	2	
			142	16	88	116	95	100	54	42	47	57
Melville St	Elizabeth to Murray	Nortern side	5	2	4	7	5	4	1	0	0	3
		Southern side	3	2	3	5	5	4	0	0	-2	1
	Argyle to Campbell	Nortern side	Ambulance parking only									
		Southern side	8		3	8	4	3	5	0	4	5
Brisbane St	Elizabeth to Murray	Nortern side	12	2	1	7	9	2	11	7	3	12
		Southern side	12		6	10	10	5	6	2	2	7
	Argyle to Campbell	Nortern side	9	2	6	11	4	7	3	0	5	4
		Southern side	4		3	4	1	1	1	0	3	3
Elizabeth St	Brisbane to Patrick	Western	12	2	2	8	9	11	10	6	3	3
		Eastern	10	2	6	10	11	12	4	2	-1	0
Argyle St	Brisbane to Patrick	Western	9		6	2	9	5	3	7	0	4
		Eastern	13		7	6	11	4	6	7	2	9
Bathurst St	Argyle to Campbell	Nortern side	15		9	15	4	4	6	0	11	11
		Southern side	11		6	7	2	4	5	4	9	7
Campbell St	Melville to Bathurst	Western	10		3	3	1	3	7	7	9	7
		Eastern	8	2	5	5	8	7	3	5	0	3
	Brisbane to Melville	Western	10		4	3	2	0	6	7	8	10
		Eastern	4		3	0	3	2	1	4	1	2
Total			155	14	77	111	98	78	78	58	57	91
Total for the two zones			297	30	165	227	193	178	132	100	104	148

GES
GEO-ENVIRONMENTAL
SOLUTIONS

ENVIRONMENTAL SITE ASSESSMENT
35 MELVILLE STREET, HOBART TASMANIA

December 2020

Geo-Environmental Solutions Pty Ltd. 29 Kirksway Place, Battery Point. Ph 6223 1839 Fax 6223 4539

DOCUMENT CONTROL

Title	Version	Date	Author
Environmental Site Assessment – 35 Melville Street	Version 1	16/12/20	M Downie

EXECUTIVE SUMMARY

This report presents the findings from a limited scope Environmental Site Assessment undertaken by Geo-Environmental Solutions Pty. Ltd. (GES) at the 35 Melville Street, Hobart - hereby referred to as 'The Site'.

The objective of the limited scope Environmental Site Assessment was to satisfy the planning requirements of a Development Application submitted to Hobart City Council as the site is listed as a potentially contaminated site under the Interim Planning Scheme. GES was required to determine the suitability of the site for the intended use.

The scope of works of this limited scope Environmental Site Assessment was to:

- Conduct a desktop assessment.
- Conduct an invasive soil investigation in areas where site development and excavation works are proposed; dig two soil bores and collect samples from two locations (BH1 and BH2).
- Soil samples were sent with quality assurance/ quality control samples for analysis of petroleum hydrocarbons including total recoverable hydrocarbons, Benzene Toluene Ethylbenzene Xylene and Polynuclear Aromatic Hydrocarbons, plus a suite of 15 Metals to a National Association of Testing Authorities accredited laboratory;
- Compare soil analytical results against the NEPM 2013 guidelines and CRC CARE Technical Report 10 guidelines (Friebel & Nadebaum 2011);
- Determine the presence and level of site contamination;
- If deemed necessary, present recommendations for remediation and protection measures during development and for future land users.
- Report in a limited scope Environmental Site Assessment document the findings of the site investigation and if required provide a conceptual site model and contamination management recommendations.

From the desktop assessment, it is concluded that:

- The geology of the site is mapped as Jurassic dolerite and Triassic Sandstone.
- The site ranges in elevation from approximately 20 to 24 m AHD with a 5% gradient to the South.
- The surface of the site is covered almost entirely by concrete or bitumen with a large building occupying almost half of the property towards the street frontage. Rainfall flow onsite is directed from the roof via gutters and downpipes and the carpark area into storm water drains. The surrounding area is largely paved surfaces of bitumen on the roads, concrete footpaths and densely spaced building; thus opportunity for water to infiltrate the groundwater system is greatly limited.
- The hydrogeology of the area is likely to consist of groundwater moving parallel with slope towards the south, Elizabeth Street and the Hobart Rivulet and ultimately into the River Derwent at Sullivans Cove.
- The Hobart Rivulet is the closest ecological receptor which is approximately 350 m away and then the River Derwent at Sullivans, which is approximately 680 m away. It is unlikely that any potential impact from the site will impact downgradient ecosystem receptors, given the spatial separation and the comprehensive surface covering at the site.
- Based on a review of the historical aerial photographs ranging from 1957 to 1989; The site appears to have had little change over the past 60 years;
- Surrounding sites were identified as having potentially contaminating activities; however, due to the topography and the inferred groundwater contours it is unlikely that potential impact from these sites have migrated to the investigation area.
- Worksafe Tasmania do not hold any files regarding potentially contaminating activities at the site.
- The site has not hosted a known potentially contaminating activity for the past 60 years and the only potential concern is possible site fill and any leakage from parked cars.
- Given the urban setting there is the potential at the site for the following:
  - Uncontrolled historical site fill with building debris;
  - Historical buildings with leaded paint; and
  - PAH's in heating oil or old charcoal waste from fires
- Contaminants of potential concern that may have been present at the site and that were tested for in the soil analysis are listed in the scope of work.

From the soil assessment in the footprint of the redevelopment, it is concluded that:

- Low detections of PAHs and metals did not exceed human health guidelines. Therefore, a risk to human health has not been identified for either during construction for workers or post construction for future site users and future maintenance workers.
- Although there is ecological guideline exceedance for Benzo (a) pyrene, zinc and copper, for the following reasons, GES does not consider that there is a risk to ecological receptors:
    1. The soil at the site is covered by either concrete/asphalt, or building or both and will not be exposed to groundwater percolation; and
    2. The closest ecological receptor is the Hobart Rivulet which is spatially separated from the site by approximately 350 m.
    3. A soil and water management plan will be implemented for all excavation works to eliminate the pathway from potentially contaminated soil to environmental receptors (groundwater & surface water).
- Other than advice provided within the recommendations section of this report, it was not deemed necessary to provide a specific remediation or contamination management plan prior to the commencement of excavation works.

GES can confirm the following recommendations:

- No risk to workers involved in redevelopment of the site, or future users of the site, as a result of proposed excavation of the site has been identified.
- A soil and water management plan must be implemented prior to any excavation at the site to manage the potential environmental risk from excavation of potentially of contaminated soil
- No specific remediation and/or protection measures are required to ensure the redevelopment does not adversely impact human health, however, standard personal protective equipment and comprehensive hand washing is recommended prior to eating or drinking during site works as with any construction site work.
- With regards to soil disposal, benzo(a)pyrene and selected heavy metals are slightly elevated classifying the material at the site as Level 2 and level 3 material. Therefore, it is recommended that all excavated soil at the site should be stockpiled and assessed against IB105 guidelines for Classification and Management of Contaminated Soil for Disposal before it is transported by a licensed operator to an appropriate disposal facility.

This report only applies to the site at 35 Melville Street and is limited to that area only. Any changes to the development or proposed site use, may trigger the need to reassess the analytical results against different investigation levels or conduct further onsite investigations.

If the recommendations are followed, the site is suitable for the proposed development in accordance with potentially contaminated land code of the Hobart Interim planning scheme.

Table of Contents

ABREVIATIONS

ALS	Analytical Laboratory Services
ANZECC	Australia and New Zealand Environment and Conservation Council
BGS	Below Ground Surface
BH	Borehole
BTEX	Benzene Toluene Ethylbenzene Xylene
COA	Certificate of Analysis
COC	Chain of Custody
COPC	Contaminant of Potential Concern
CRC CARE	Corporative Research Centre for Contamination Assessment and Remediation of the Environment
CSM	Conceptual Site Model
DQO	Data Quality Objectives
EPA	Environmental Protection Authority
ESA	Environmental Site Assessment
GES	Geo-Environmental Solutions Pty. Ltd.
HIL	Health Investigation Levels
HSL	Health Screening Levels
IL	Investigation Levels
LOR	Limits of Reporting
NATA	National Association of Testing Authorities
NEPM	National Environmental Protection Measure
NL	Non Limiting
NRMMC	Natural Resource Management Ministerial Council
PAH	Polynuclear Aromatic Hydrocarbons
PHC	Petroleum Hydrocarbons
PPA	Preferential (PVI) Pathways Assessment
TPH	Total Petroleum Hydrocarbons
TRH	Total Recoverable Hydrocarbons
USCS	Unified Soil Classification System

1 INTRODUCTION

1.1 General

This report presents the findings from a limited scope Environmental Site Assessment (ESA) undertaken by Geo-Environmental Solutions Pty. Ltd. (GES) at the 35 Melville Street, Hobart - hereby referred to as 'The Site'. The site location is presented in Figure 1 and an aerial photograph of the site and the surrounding area is presented in Plate 1. GES was commissioned by JSA Engineers (the 'Client') to conduct the limited scope ESA.

The limited scope ESA has been prepared by a suitably qualified and experience practitioner in accordance with procedures and practices detailed in National Environmental Protection Measure (NEPM, 2013) guidelines and key regulations and policies identified in the References section of this document. Personnel engaged in preparing this limited scope ESA are listed in Appendix 1 along with their relevant qualifications and years of experience.

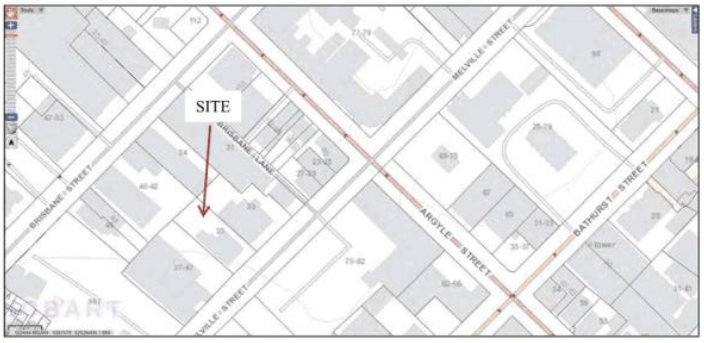


Figure 1 Site Location, site and surrounding area (LIST Image).

Plate 1 Aerial photograph, site and surrounding area (LIST Image).

1.2 Site Details

Site details are presented in Table 1.

Table 1 Site Details

Site Address
35 Melville Street, Hobart.
Current Title identification details
According to the Cadastral Parcels layer on the list, Property ID 5669635 CT 44299/1.
Current land use
Offices
Site total area
Approx 809m^2, existing office building approx. 450m^2
Current Ownership
35 Melville Street Pty Ltd
Zoning
Commercial – Tasmanian Interim Planning Scheme 2015
Local Council
Hobart City Council
Proposed Site Use
Public bar
Surrounding Land Use
The site is situated in the CBD of Hobart and is surrounded by commercial buildings and carparking.

1.3 Investigation Objectives

The objective of the limited scope Environmental Site Assessment was to satisfy the planning requirements of a Development Application submitted to Hobart City Council (HCC) as the site is listed as a potentially contaminated site under the Interim Planning Scheme. GES was required to determine the suitability of the site for the intended use and considered the following;

- Determine whether any site contamination presents a risk to workers involved in redevelopment of the site, or future users of the site because of proposed excavation of the site.
- Determine whether any site contamination presents an environmental risk from excavation conducted during redevelopment of the site.
- Determine whether any specific remediation and/or protection measures are required to ensure proposed excavation does not adversely impact human health or the environment before excavation occurs.
- Provide a statement of suitability based on the results of the assessment that the works will not impact human health or environment, and
- Provide remediation and protection measures (if the assessment concludes they are necessary).

1.4 Scope of Works

The scope of works of this limited scope ESA was to:

- Conduct a desktop assessment.
- Conduct an invasive soil investigation in areas where site development and excavation works are proposed; dig two soil bores and collect a total of 4 samples from two locations (BH1 and BH2).
- Soil samples were sent with quality assurance/ quality control (QA/QC) samples for analysis of total recoverable hydrocarbons (TRH) Benzene Toluene Ethylbenzene Xylene (BTEX), Polynuclear Aromatic Hydrocarbons (PAH) and 15 Metals to a National Association of Testing Authorities (NATA) accredited laboratory;

- Compare soil analytical results against the NEPM 2013 guidelines and CRC CARE Technical Report 10 guidelines (Friebel & Nadebaum 2011);
- Determine the presence and level of site contamination;
- If deemed necessary, present recommendations for remediation and protection measures during development and for future land users.
- Report in a limited scope ESA document the findings of the site investigation and if required provide a conceptual site model (CSM) and contamination management recommendations.

2 PLANNING

2.1 Zoning

The site is zoned commercial under the Tasmanian Interim Planning Scheme of 2015, see Figure 2. The land use surrounding the site is consistent with the zoning.

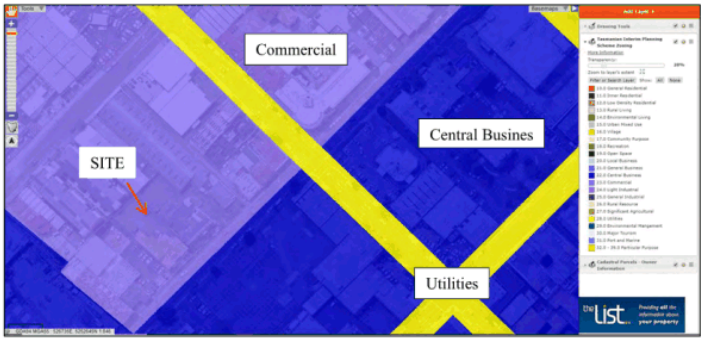


Figure 2 Council Planning Zones (2015)

2.2 Proposed Site Development Works

The proposed development involves alterations which will involve the installation of new access to the front of the building and the addition of a small storeroom to the rear of the building and change of use from offices to a bar. A carparking area will remain at the rear of the site, however part of the rear yard will be converted to a beer garden.

The existing building plan is presented in Figure 3 and the proposed redevelopment plans are presented in Figure 4.

2.3 Assessment Trigger

The need for the assessment is a requirement of any development that may take place on a potentially contaminated site.

As the history of the site suggests that potentially contaminating activities may have taken place adjacent to the site and there is proposed ***excavation works*** at the site, there are no acceptable solutions to proposed works, and therefore E2.6.2 P1 performance criteria are to be addressed.

E2.6.2 P1 Performance Criteria:

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.

Figure 3 Existing floor plan

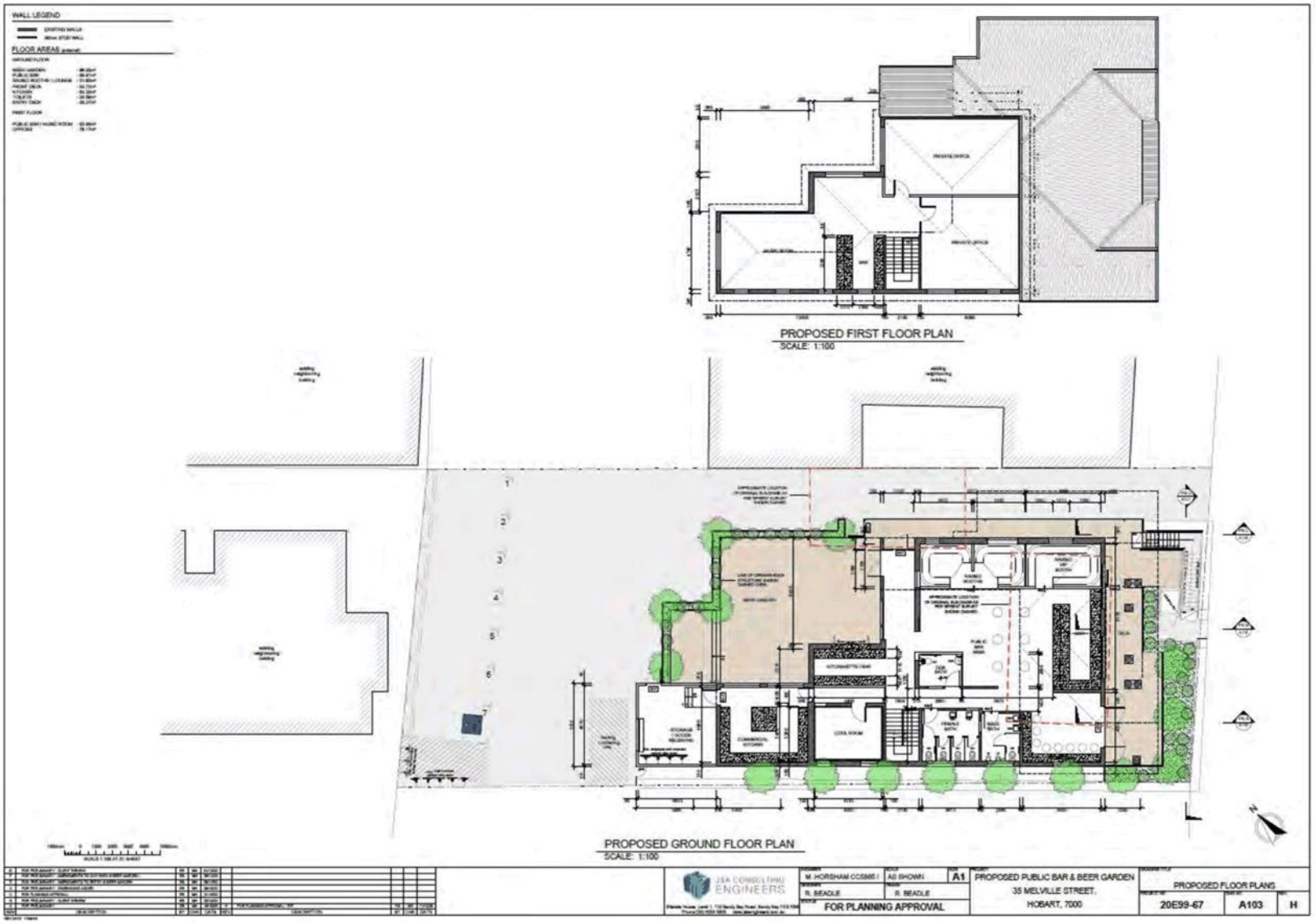


Figure 4 Proposed floor plan

3 DESKTOP STUDY

3.1 Site Walkover

A site walkover was completed by GES staff and site photographs are presented in Appendix 2.

3.1.1 Surface Coverings

The majority of the site is covered in either asphalt or concrete, with a small area of exposed soil/garden bed along the boundary with 37 Melville Street. The boundary with 37 Melville is distinguished by a high retaining wall as the property is located some 3 to 4m in elevation higher than number 37.

3.1.2 Signs of Contamination

Despite the sue of the rea of the property as a carpark for the offices, there are no signs of surface staining contamination that may suggest soil contamination has occurred. The soil excavated on site appeared relatively natural, with a trace of charcoal typical of inner-city Hobart areas.

3.2 MRT Geology Mapping

The geology of the site is mapped as Jurassic dolerite and Triassic sandstone see Figure .

Jd – Jurassic Dolerite, Jurassic igneous rocks, (tholeiitic) with locally developed granophyre.
R – Undifferentiated Upper Parmeener Supergroup Rocks
Rqph – Freshwater predominantly cross-bedded quartzose to feldspathic sandstone commonly with overturned cross-bedding subordinate siltstone with sparse plant and vertebrate fossils (knocklifty Formation)
Figure 5 Mineral Resources Tasmania 1:25000 Scale Mapping (The LIST).

3.3 Site Topography, Drainage & Hydrogeology

The site ranges in elevation from approximately 20 to 24 m AHD with a 5% gradient to the South. The surface of the site is almost entirely covered with asphalt and concrete plus the office building. Rainfall flow onsite is directed from the roof via gutters and downpipes and the carpark area into storm water drains. The surrounding area is largely paved surfaces of bitumen on the roads, concrete footpaths and densely spaced building; thus opportunity for water to infiltrate the groundwater system is limited.

The hydrogeology of the area is likely to consist of groundwater moving parallel with slope to the south from the site towards Elizabeth Street and the Hobart Rivulet and ultimately the River Derwent at Sullivans Cove. The inferred regional groundwater flow is illustrated in Figure 6.

Figure 6 Inferred Groundwater Flow (blue dashed line)

3.4 Historical Aerial Photography Interpretation

The 1989, 1977 and 1957 historical aerial photograph were viewed as part of this limited scope ESA and they are presented in Plate 2 to 4. The site appears to have been offices for over 60 years and the carpark has also been used almost continuously. In the surrounding area there appears to be two former service stations, one on the corners of Melville Street and Argyle Street, 69-75 Argyle Street, Former Mobil Service Station which is now a McDonalds Restaurant. The second former service station is on the corner of Brisbane Street and Argyle Street at 98-110 Argyle Street, which is now a car sales room owned by Co-operative Motors company.

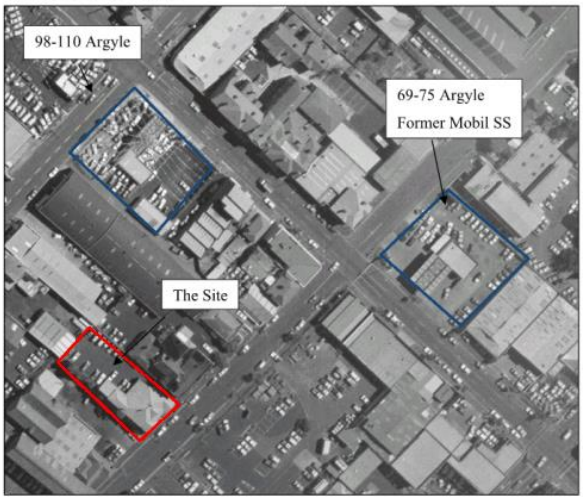


Plate 2 The 1989 Historical Aerial Photograph of the site (former service stations in Blue).

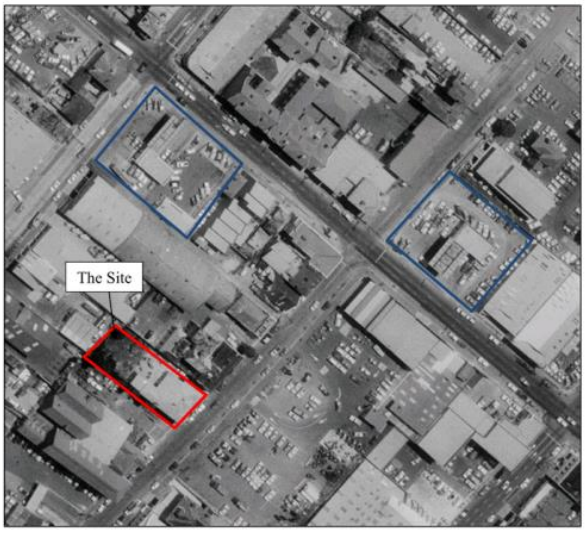


Plate 3 The 1977 Historical Aerial Photograph of the site (former service stations in Blue).

Plate 4 The 1957 Historical Aerial Photograph of the site.

3.5 Previous Site Investigations

GES is not aware of any previous site investigations for the site. GES is aware of the following investigations for neighboring properties:

- Pitt and Sherry, 2018 Phase I ESA for 40-44 Melville Street, Hobart
- GES, 2018a Limited Scope ESA for 27-29 Melville Street, Hobart.
- GES, 2018b Phase II ESA for 40-44 Melville Street, Hobart
- GES 2017, ESA 92-96 Argyle Street, Hobart
- GES 2019, ESA for 37-39 Melville Street, Hobart
- GES 2020, ESA for 72-80 Argyle Street, Hobart

It was the conclusion of the ESA reports for nearby properties that low level contamination in soil/fill is present in the general area consistent with inner city Hobart, and that no health risks for commercial land use were identified. Management of low-level contaminated soils was generally required during development works on the nearby properties.

3.6 Dangerous Goods Records (Workplace Standards)

It was confirmed with Worksafe Tasmania, that they do not hold any files for the site.

3.7 EPA Property Information Request

Due to COVID restrictions normal searches have been suspended, and public referred to the register of sites on the List map or to local council to obtain records. No registered contaminated sites are listed at the site or nearby.

3.8 Council Environmental Records

It was confirmed that HCC do not hold any contamination files for the site. However the following information regarding the site and neighboring properties was obtained from the Council's Potentially Contaminated Sites register.

- 37-47 Melville Street – Formally owned by Webster. Motor car dealers, engineers & garage, Iron/Steel works & Brewery operated on site and there may be possible hydrocarbons contamination. Site redeveloped into a gym.
- 70-82 Argyle Street – current carpark owned by UTAS, former fuel supplier and motor car, dealers, engineers and garages.
- 27-29 Melville Street – Former *Paul's Body Works.* Currently site has been redeveloped into office space.
- 47-53 Brisbane Street - *Honda Centre* – Vehicle servicing and sales.
- 35-43 Brisbane Street – Tilford – Vehicle servicing and sales.

3.9 Groundwater

3.9.1 Potential Up-Gradient Contamination Sources

The site is in the center of Hobart, as discussed in the previous sections of this report, there have been several potentially contaminating activities on sites close to the current site. The most likely potential source of upslope contamination is 98-110 Argyle Street, the former Ampol. However, soil testing at the former sheet metal works, Minties (92-96 Argyle street; GES, 2017) adjacent to that property confirmed that although there was low level metal contamination at that site (expected for that site use) there were no shallow detections of hydrocarbons. This suggests one of the following for the Minites site; groundwater is not contaminated; groundwater is traveling east away from Minites (and 35 Melville Street, as shown in Figure 6) or groundwater is contaminated but is at a sufficient depth that it is not impacting the site (Minties or 35 Melville Street)

At the other proximal properties, the Fire Station, the former Mobil site, and 37-47 Melvilel Street; groundwater is likely to be traveling away from the current investigation area and has been discounted at a potential contaminating source for the site.

3.9.2 Downgradient Ecosystem Receptors

The surface of the site is sealed by concrete, asphalt and the existing building. Surface water/ groundwater from the site is likely to be captured by the storm water drains on the site and on Melville Street.

The closest ecological receptor is the Hobart Rivulet, approximately 350 m away and then the River Derwent at Sullivans, which is approximately 680 m away. It is unlikely that any potential impact from the site will impact downgradient ecosystem receptors, given the spatial separation and the comprehensive surface covering at the site.

3.9.3 Registered Water Bores

There are no Mineral Resources Tasmania Registered water bores within the central business district.

3.10 Potential Contamination Issues

3.10.1 Areas of Potential Concern

The site has hosted office for over 50 years with a car park constructed sometime between 1957 and 1977 and therefore the carpark of the site is an area of potential concern from the drilling of oils or fluids from vehicles. Though it is thought that exposure to soil is limited, given sealed surface.

Given the urban setting there is the potential at the site for the following:

- Historical site fill;
- Historical building lead paint; and
- PAH's from possible old heating oils and in charcoal waste.

There is a very small possibility that activities on adjacent properties have impacted the soil and groundwater at the site.

3.10.2 Contaminants of Potential Concern

Contaminants Of Potential Concern (COPC) at the site could include the following:

- Total Petroleum/Recoverable Hydrocarbons (TPH/TRH);
- Mono Aromatic hydrocarbons: Benzene, Toluene, Ethylbenzene, Xylene, Naphthalene (BTEXN);
- Polynuclear Aromatic Hydrocarbons (PAHs); and
- Metals.

4 FIELD INVESTIGATION PROCEDURES

4.1 Works Summary

One site visit was conducted on the 3rd of December 2020 and involved the hand auguring of two soil bores within the site. The soil bores were labeled as BH1 – BH2 and the approximate location of the soil bores is presented in Figure 7. The locations were chosen to be close to planned excavation for new access and the new storeroom.

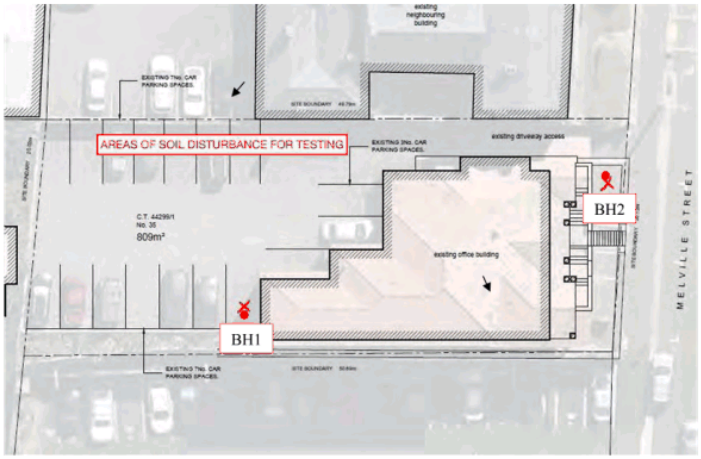


Figure 7 Borehole (BH1 to BH2) Investigation Areas

4.2 Soil Investigation

Site investigation works are summarised in Table 2.

Table 2 Summary of Site Investigation Works

Hole ID	Method of Investigation	Date of Sampling	Location Accuracy of sampling point
BH1 to BH2	Hand auger	3/12/20	Estimate with plans and site photographs

4.2.1 Borehole Drilling

At each of the bore locations, the following precautions were put in place to avoid disrupting underground service assets:

- Dial Before You Dig plans were obtained;

A total of two 65 mm diameter soil bores were hand augured for assessing site geology and sampling for any potential contamination impact.

4.2.2 Soil Sampling

Soil bore soil sampling was conducted per the National Environmental Protection Measure (NEPM 2013) and AS4482 sampling guidelines. Table 3 presents a summary of the soil assessment methodology adopted at the site.

Table 3 Summary of Soil Sampling Methods

Activity	Details / Comments
Drilling Method	Concrete was cored with a concrete corer and the soil bores were hand auger. Grab samples were collected.
Soil Logging	Logging the soil was conducted in accordance with the unified soil classification system (USCS) as detailed in AS1726 (1993).
Decontamination of Sampling Equipment	Quantum Clean Laboratory Detergent Decon 90 was used to decontaminate reusable sampling equipment which was triple rinsed, the final rinse was deionised water.
Laboratory Soil Sample Collection	In accordance with AS4482.2. All samples were collected using disposable nitrile gloves. A minimum number of samples were carefully selected which would provide sufficient information to identify hydrocarbon contamination in soils.
Sample preservation	Samples were placed into a jar for laboratory analysis. Soil jars were placed in a pre-chilled cool box with ice bricks.
Sample holding times	Sample holding times were within acceptable range (based on NEPM B3-2013) from collection to extraction.

4.2.3 Soil Analysis

Primary and QC samples were submitted to Analytical Laboratory Services (ALS) Springvale Avenue in Melbourne for analysis. A total of four samples were collected systematically for analysis. Analysis included TPH/TRH, PAH, BTEX and 15 Metals. One duplicate sample was also collected. Chain of Custody (COC) documentation was completed and is provided in Appendix 4.

Given that a full 15 metal suite was analysed, there was requirement to assess the following soil physical properties to determine soil threshold investigation levels:

- Soil grain class (sand/silt or clay)
- % Clay content;
- Cation exchange capacity; and
- Soil pH

The soil physical properties were assessed through site assessment and chemical properties were based on knowledge of similar soil types encountered around Hobart.

5 QUALITY CONTROL

All field and Laboratory Quality Assurance and Quality Control details are presented in Appendix 3.

5.1 Field

It is standard to expect up to 10% error in field duplication and up to 10% laboratory error. Therefore, in theory up to 20% error can be assumed on duplicate analysis. Some variation may exist in soil and groundwater because even though all efforts are made to split samples homogeneously, fragments of materials may bias samples in certain elements.

Relative Percentage Differences (RPDs) for the duplicate and triplicate samples where applicable are calculated using the method outlined below.

The acceptance criteria used for the RPDs depend on the levels of contaminants detected and the laboratory's Method Detection Limits (MDL). The closer the levels detected are to the MDL the greater the acceptable RPD.

RPDs are calculated as follows:

- RPD <50% for low level results (<20 * MDL)
- RPD <30% for medium level results (20-100 * MDL)
- RPD <15% for high level results (>100 * MDL)
- No limit applies at <2 * MDL

Field QA/QC procedures and compliance are summarised in Table 4.

Table 4 Field QA/QC procedures and Compliance

QA/QC Requirement	Completed	Comments
Appropriate sampling strategy used and representative samples collected	Yes	Sampling program was undertaken in accordance with AS4482.1-2005
Appropriate and well documented sample collection, handling, logging and transportation procedures.	Yes	Appropriate and well documented
Decontamination	Yes	Appropriate decontamination such as cleaning tools before sampling and between sample locations was undertaken
Chain-of-custody documentation completed	Yes	COC were completed in accordance with NEPM Schedule B2, Section 5.4.5 and transported under strict COC procedures. The signed COC documents are included in this report, which includes the condition report on arrival of samples to the Laboratory, cross checking of sample identification and paperwork and preservation method.
Required number of duplicate samples collected (1:20)	Yes	A single duplicate from 3 primary samples
QA/QC samples reported method detection limits within indicated guidelines.	Yes	RPD Exceedance for Cu, Mn, H and Chrysene (PAH).
Required numbers of field and rinse blank samples collected	No	One rinsate sample was collected. No field blank.
Samples delivered to the laboratory within sample holding times and with correct preservative	Yes	All samples were sent to the laboratory within holding times and correct preservative.

5.2 Laboratory

Laboratory QA/QC procedures and compliance are summarised in Table 5.

Table 5 Laboratory QA/QC procedures

QA/QC Requirement	Compliance	Comments
All analyses NATA accredited	Yes	ALS Laboratories is NATA Accredited.
Appropriate analytical methods used, in accordance with Schedule B(3) of the NEPM	Yes	
Acceptable laboratory limits of reporting (LORs) adopted.	Yes	
Method Blanks: zero to <Practical Quantitation Limit (PQL)	Yes	There were no method blank value outliners.
Duplicate Samples:<30% to 50% RPD.	Yes	There were no Duplicate outliners for samples. Internal lad duplicate outliers for water for TRH not applicable to analysis results for soil.
Laboratory Control Samples: 70% to 130% recovery for soil; or 80% to 120% recovery for waters;	Yes	There were no Laboratory Control outliners.
Matrix spikes: 70% to 130% recovery for organics or 80%-120% recovery for inorganics	Yes	Spikes within limits.
Surrogates: 70% to 130% recovery	Yes	There were no surrogate recovery outliners for regular samples.
Analysis holding time outliers	Yes	No hold-time outliners exist.
Quality Control Sample Frequency Outliers	Yes	No outliers

6 FIELD INVESTIGATION FINDINGS

6.1 Soil Bores

6.1.1 Geological Interpretation

The geology is consistent across the site and soil bore logs are presented in Appendix 6. Below the concrete or asphalt, is fill mixed with natural soil material, encountered to variable depths typically from 0.1metres below ground surface (mbgs) to 0.2mbgs; including a thin weak concrete slab in BH2. Below 0.2 m bgs is SILTY CLAY and in BH1 a CLAYEY SAND at 0.5mbgs. Both boreholes ceased at 0.6m bgs.

6.1.2 Grain Class Interpretation

Grain size classifications are applied to all soils at the site to determine threshold screening level concentrations for hydrocarbons (and chromium) to assess soil ecological and human health risks.

Grain class threshold values are determined based on either the:

- sample grain size (in the case of ecological screening levels or chromium limits); or
- average grain class overlying the sample point (when assessing petroleum vapour screening levels).

When assessing petroleum vapour intrusion screening levels, where soil is proposed to be excavated from the site, the excavated material is excluded from the grain class averaging.

All material is classified as CLAY, for the purposes of interpretation.

7 SOIL ECOLOGICAL IMPACT ASSESSMENT

7.1 Protected Environmental Values

The requirement for protecting soil from contaminated activities in Tasmania is managed under the Environmental Management and Pollution Control Act 1994 (EMPCA) which states in Part 5A:

(2) An area of land is a contaminated site if –

(a) there is in, on or under that area of land a pollutant in a concentration that –

(i) is above the background concentration; and

(ii) is causing or is likely to be causing serious or material environmental harm or environmental nuisance, or is likely to cause serious or material environmental harm or environmental nuisance in the future if not appropriately managed;

Potential soil impact at the site is assessed through application of the following environmental investigation guidelines.

7.2 NEPM (2013) Guidelines

The following ecological investigation guidelines are to be addressed to assess acceptable levels of risk to terrestrial ecosystems:

- NEPM (2013) Ecological Investigation Levels (EIL's) – have been developed for selected metal and organic substances. EIL's depend on specific soil and physicochemical properties and land use scenarios and generally apply to the top two (2) metres of the soil profile (NEPM 2013);
- NEPM (2013) Ecological Screening Levels (ESL's) – have been developed for selected petroleum hydrocarbon compounds and total petroleum hydrocarbon fractions. ESL's broadly apply to coarse and fine grained soils and various land use scenarios within the top two (2) metres of the soil profile (NEPM 2013).

Soil analytical results are compared against Ecological Screening Levels (ESL's) and Ecological Investigation Levels (EIL's) limits presented in Table 6.

Table 6 Summary of Soil Investigation Limits Considered at the Site based in NEPM (2013) ASC

Investigation Levels (IL)	Analytes Investigated						
	Hydrocarbons				Metals		DDT
	BTEX	TRH (F1 to F4)	Benzo(a) pyrene (PAH)	Naphthalene (PAH)	Zn, Cu, Cr(III), Ni & As	Lead	
ESL's	Analysed	Analysed	Analysed				
EIL's				Analysed	Analysed	Analysed	Not Analysed

7.3 Guidelines

7.3.1 Ecological Screening Levels

The following compounds were compared against NEPM (2013) Ecological Screening Levels (ESL's):

- BTEX;
- F1 to F4 TRH; and
- Benzo(a)pyrene

Selection of ESL threshold investigation limits are set out in the NEPM (2013) guidelines and require classification of the soil according to:

- Land use sensitivity:
    - Areas of ecological significance
    - Urban residential and public open space; and
    - Commercial and industrial.

- Dominant particle size passing through a 2 mm sieve into:
    - Coarse – sand sizes and greater; and
    - Fine – clay and silt sizes.

Adopted NEPM (2013) soil and land use classifications are presented below.

7.3.2 Ecological Investigation Levels

The following compounds were compared against Environmental Investigation Levels:

- Lead;
- Nickel;
- Chromium;
- Zinc;
- Copper;
- Arsenic; and
- Naphthalene.

There was a requirement to classify the soil according to physicochemical properties given that the above listed compounds. Adopted physicochemical parameters are presented in the results tables.

Selection of EIL threshold investigation limits are set out in the NEPM (2013) guidelines and require classification of the soil per specific soil and physicochemical properties which are presented in the results tables. The adopted land use scenarios are presented in Table 7, commercial and industrial guidelines were selected because it is more fitting for the current land use.

Table 7 Adopted Land Use Scenario For the Various Soil Bores

Land Use Scenario	Applicable Soil Bores
Areas of Ecological Significance	
Urban Residential & Public Open Space	
Commercial & Industrial	All soil bores

Based on a preliminary assessment of site soil conditions, the following physicochemical properties are applied to assess guideline EIL's:

- Clay content consistent with field observations;
- A cation exchange capacity (CEC) consistent with Table 8.

Table 8 Cation Exchange, Clay content and pH, Adopted For the Site

USCS	Clay %	CEC	pH
R	0	10	4.5
GW	0	10	4.5
GP	0	10	4.5
GM	10	15	4.5
GC	30	20	4.5
SW	0	10	4.5
SP	0	10	4.5
SM	10	15	4.5
SC	20	20	4.5
ML	30	20	4.5
CL	100	35	4.5
OL	50	35	4.5
MH	30	35	4.5
CH	100	45	4.5
OH	100	60	4.5
PT	100	80	4.5
P	0	0	4.5
CL	100	35	4.5
CI	100	35	4.5

7.4 Findings

7.4.1 Ecological Screening Levels

Laboratory analytical results for soil are presented in Appendix 5. Table 9 compares all soil analytical results relevant to ESLs guideline limits. Concentrations which exceeded laboratory limits of reporting (LOR) are highlighted in bold, and ESL exceedances are highlighted with a colored cell.

Two samples exceeded the ESL guideline limits; in both samples Benzo (a) pyrene exceeded ESL limits in shallow soil collected from 0.2-0.6 m bgs.

Given the locations are currently under concrete or asphalt and it will not be exposed rain, there is a low risk that the soil will leach into the groundwater and cause offsite risks to the ecosystem unless excavated and left exposed.

Table 9 Summary of Soil Analytical Results Compared with Ecological Screening Level's

NEPM Ecological Screening Levels for Soil				BTEX				PAH	TRH			
Bold - Indicates LOR Exceedances X - Indicates Sample has been Excavated Colour Shading - Indicates ESL Exceedances: >1 x, * 2-5 x, ** 5-20 x, *** 20-50 x, **** >50 x				Benzene	Toluene	Ethylbenzene	Xylenes	Benzo(a)pyrene	F1 (C6 - C10)	F2 (>C10 - C16)	F3 (>C16 - C34)	F4 (>C34 - C40)
Sample ID	Sample Date	Soil Texture Class (fine /coarse)	Land Use	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
				LOR 0.2	LOR 0.5	LOR 0.5	LOR 0.5	LOR 0.5	LOR 10	LOR 50	LOR 100	LOR 100
BH1 0-0.2 X	3/12/20	F	COM/IND	<0.2	<0.5	<0.5	<0.5	**0.6**	<10	<50	<100	<100
BH1 0.5-0.6	3/12/20	F	COM/IND	<0.2	<0.5	<0.5	<0.5	**2***	<10	<50	**140**	<100
BH2 0.3-0.5	3/12/20	F	COM/IND	<0.2	<0.5	<0.5	<0.5	**5.3****	<10	<50	**370**	**100**

7.4.2 Ecological Investigation Levels

Laboratory analytical results are presented in Appendix 5. Table 10 compares all soil analytical results against relevant ecological investigation limits (EIL's) for commercial land use. Concentrations which exceeded laboratory LOR are detailed in the table and EIL exceedances would be highlighted with a colored cell. Zinc exceeded the EIL guideline limits in all sample and copper in one sample.

Table 10 Soil Analytical Results Compared Against Ecological Investigation Levels

NEPM Ecological Investigation Levels for Soil													
Bold - Indicates LOR Exceedances X - Indicates Sample Within Inferred Excavation													
Colour Shading - Indicates EIL Exceedances: >1 x, * 2-5 x, ** 5-20 x, *** 20-50 x, **** >50 x													
Sample ID	Sample Date	EIL Land Use Sensitivity Class	Soil CEC (cmolc/kg)	Soil pH	Soil Texture Class (fine /coarse)	Copper (CEC)	Copper (pH)	Nickel	Zinc	Chromium III	Lead	Arsenic	Naphthalene
						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
BH1 0-0.2 X	3/12/20	COM/IND	35	4.5 (3)	F	32	32	6	233	7	80	<5	<1
BH1 0.5-0.6	3/12/20	COM/IND	35	4.5 (3)	F	64	64	8	269	6	90	6	<1
BH2 0.3-0.5	3/12/20	COM/IND	35	4.5 (3)	F	105	105	17	799*	21	400	33	<1

8 SOIL HUMAN HEALTH DIRECT CONTACT ASSESSMENT

8.1 Guidelines

Guidelines presented herein are based on potential exposure of human receptors to soil impact which may include:

- Trench workers repairing or building services (typically to 1 m bgs). This classification is not dependent on the land use class.
- Onsite inhabitants which may be exposed to potential shallow soil impact in non-paved areas of the site; and
- Onsite excavation works which may include potential swimming pools (up to 3 m bgs); basement carparks; and deep foundations.

8.1.1 Land Use Classification

The NEPM (2013) guidelines have been referenced to ensure that the correct land use and density category has been adopted for the site and the surrounding properties (where applicable). As per NEPM (2013) guidelines, the adopted land use class is dependent on the building density and the opportunity for soil access by site occupants (exposure to potentially impacted soil). Aspects needing to be considered include:

- Whether the site is of sensitive land use such as a childcare center, preschool, primary school or aged care facility in which case land use Class A is applicable;
- The percentage of paved area to determine direct contact exposure risk and therefore classification as low or high density; and
- Classification based on residential, recreational or commercial/industrial setting.

8.1.2 Adopted Land Use Classification

The adopted land use class is presented in Table 11.

Land use class is based on the opportunity for soil access as per NEPM (2013) guidelines. A land use class of D has been applied to all soil samples which is consistent with the surrounding setting with little opportunity for access to impacted soil.

Table 11 Summary of Land Use Setting and Density for Determining Exposure Risk

Soil Bores	Relevant Properties	Adopted Land Use Class
All soil bores	The site – commercial workers	D
All soil bores	The site – intrusive maintenance workers	D

8.1.3 Health Investigation & Screening Levels

The main exposure pathways and methods for assessing short term heath risk from contaminated soils are presented in Table 12. Vapour inhalation risk is addressed in Section 10 of this report.

Table 12 Summary of Exposure Pathways and Preliminary (Tier 1) Methods for Assessing Human Exposure Risk

Exposure Scenario	Contaminant Type	Tier 1 Assessment Method	Reference
Vapour Inhalation (Petroleum Vapour Intrusion – PVI)	Petroleum Hydrocarbons	HSLs (addressed in PVI section)	CRC CARE (Friebel & Nadebaum, 2011)
Dermal Contact		HSLs	
Dust Inhalation	Metals PAHs Organochlorides Phenols Herbicides Other Pesticides	Health Investigation Levels (HILs)	NEPM (2013)
Soil Ingestion			

PVI – Petroleum Vapour Intrusion

8.2 Findings

8.2.1 Dermal Contact - Petroleum Hydrocarbons

Laboratory analytical results are presented in Appendix 5. Table 13 presents soil hydrocarbon analytical results compared against CRC CARE (Friebel & Nadebaum, 2011) Health Screening Levels (HSL) guidelines for assessing dermal contact risk. Concentrations which exceeded laboratory LOR would be highlighted in bold, and HSL exceedances would be highlighted with a colored cell indicating the highest HSL land used class which is exceeded.

There were no exceedances above the HSL D guidelines for *commercial land use* for Dermal Contact.

Table 13 Soil Analytical Results Compared Against CRC CARE Guidelines for Dermal Contact

CRC CARE Health Screening Level Dermal Contact Hazard from Soil Hydrocarbons'		EP080: BTEXN					EP080/071: TRH			
		Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene	C6 - C10 Fraction	>C10 - C16 Fraction	>C16 - C34 Fraction	>C34 - C40 Fraction
Units		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR		0.2	0.5	0.5	0.5	1	10	50	100	100
HSL D Commercial/Industrial		430	99000	27000	81000	11000	26000	20000	27000	38000
Intrusive Maintenance Worker		1100	120000	85000	130000	29000	82000	62000	85000	120000
Date	Sample									
3/12/2020	BH1 0-0.2 X	<0.2	<0.5	<0.5	<0.5	<1	<10	<50	<100	<100
3/12/2020	BH1 0.5-0.6	<0.2	<0.5	<0.5	<0.5	<1	<10	<50	**140**	<100
3/12/2020	BH2 0.3-0.5	<0.2	<0.5	<0.5	<0.5	<1	<10	<50	**370**	**100**

8.2.2 Dust Inhalation & Soil Ingestion

Laboratory analytical results are presented in Appendix 5. Soil analytical results are compared against combined dust inhalation and soil ingestion risk is assessed through the application of NEPM (2013) Health Investigation Levels (HILs) for exposure to soil contaminants are presented in Table 14. Concentrations which exceeded laboratory LOR would be highlighted in bold except for the metals, and HIL exceedances would highlighted with a colored cell indicating the highest HIL land used class which is exceeded.

There are no perceived exposure pathways for dust inhalation and soil ingestion for *commercial land use* at the site and there were no HIL D guidelines exceedances.

Table 14 Soil Analytical Results Compared Against NEPM (2013) Health Investigation Limit Guidelines

Bold - Indicates LOR Exceedance in Non Metalic Compounds		EA055: Moisture Content	EG005T: Total Metals by ICP-AES														EG035T: Total Recoverable Mercury by FIMS	EP075(SIM)B: Polynuclear Aromatic Hydrocarbons																							
NEPM Health Investigation Levels (HIL's) Dust Inhalation and Soil Ingestion Assessment X - Indicates Sample Within Proposed Excavation Zone		Moisture Content	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium Total	Cobalt	Copper	Lead	Manganese	Nickel	Selenium	Vanadium	Zinc	Mercury	Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benz(a)anthracene	Chrysene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-cd)pyrene	Dibenz(a,h)anthracene	Benzo(g,h,i)perylene	PAHs	Benzo(a)pyrene TEQ (WHO)
Units		%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR		1	5	10	1	50	1	2	2	5	5	5	2	5	5	5	0.1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
HIL D Commerial/Industrial	☑ HIL D		3000		500	300000	900		4000	240000	1500	60000	6000	10000		400000	730																						
Sample date	Sample ID																																					
3/12/2020	BH1 0-0.2 X	4.6	<5	70	<1	<50	<1	7	7	32	80	185	6	<5	30	233	<0.1	<0.5	<0.5	<0.5	<0.5	1.1	<0.5	1.2	1.3	0.6	0.6	0.6	<0.5	0.6	<0.5	<0.5	<0.5	**6**	**0.7**
3/12/2020	BH1 0.5-0.6	4.5	6	80	<1	<50	<1	6	12	64	90	285	8	<5	50	269	0.1	0.6	1.0	<0.5	<0.5	7.8	1.5	6.0	6.1	2.3	2.0	2.2	0.7	2.0	0.9	<0.5	1.1	**34**	**2.6**
3/12/2020	BH2 0.3-0.5	13.7	33	240	<1	<50	1	21	12	105	400	366	17	<5	38	799	0.3	<0.5	0.8	<0.5	<0.5	3.2	0.7	7.0	7.2	3.6	3.2	5.6	1.2	5.3	2.9	0.7	4.0	**45**	**7.4**

9 INDOOR INHABITANT PVI ASSESSMENT – HSL's

This PVI assessment has been conducted in accordance with relevant CRC CARE Technical Documentation and NEPM 2013 guidelines presented in references section of this report. The HSL assessment approach is generally the first (Tier 1) investigation phase adopted for assessing PVI risk at petroleum hydrocarbon (PHC) impacted sites. HSL guidelines have been applied for samples collected from the site to account for risks that may be associated with volatile hydrocarbon vapour intrusion into confined spaces where there may be an inhalation risk through longer term exposure. This does not constitute a full vapour risk assessment but provides additional information from which to further quantify any risk.

A detailed investigation (Tier 2 to 3) is recommended over an HSL assessment where an acute risk has been identified at the site (CRC CARE 2013) because of:

- Migrating product on surface soils beneath buildings;
- Strong PHC odors;
- Flammable risk in confined spaces; and/or
- Health complaints from occupants.

Based on the preliminary site visit, none of the above conditions have been identified at the site. If the outcome of this Tier 1 assessment reveals HSL exceedances for hydrocarbon vapour intrusion, a more detailed (Tier 2) assessment will be required to further evaluate the human health risk.

PVI risk is initially interpreted through the development of HSL threshold limits from the following classifications:

- The geology and or hydrogeology of the investigation point; and
- Land use sensitivity:

The resulting HSL threshold limits are compared with laboratory analytical results.

9.1 Land Use Class

For surrounding properties, the potential PVI risk is characterized through application of CRC CARE HSL's for each individual properties based on their existing land use (NEPM 2013; Friebel & Nadebaum 2010). The CRC CARE guidelines have been referenced to ensure that the correct land use and density category has been adopted for surrounding land use to ensure health risks are consistent with the HSL models. Aspects considered include the:

- Sensitivity of the existing or potential land use;
- Percentage of paved area for defining potential vapour migration risk;
- Type of basement garage which may influence the confinement of PHC vapors;
- Presence of a slab or cavity for discerning vapour intrusion risk.

Site land use class and land use class of downgradient receptors (where onsite HSL exceedances have been identified) are indicated in Table 15.

Table 15 Summary of Land Use Setting and Density for Determining Exposure Risk

Property	Land Use Class	Land Use Density	Paved Area	Sensitive Land Use
35 Melville Street	D	High	100%	No

9.2 Selected Media for Assessing PVI Risk

Table 16 presents a summary of the preferred HSL approach to assessing PVI risk.

Table 16 Preferred Methods for Determining Site PVI Risk

Media Analysed	Method	Limitations	Order of Preference
Soil Gas	Concentrations of a soil gas through a soil vapor probe	This approach provides the most reliable data in interpreting PVI risk, although direct modelling should be applied if concentrations exceed HSL threshold limits.	Primary
Groundwater	Concentrations of PHC in groundwater through deployment of monitoring wells	Determining PVI risk based on groundwater is inherently conservative when interpreting vapour risk to account for not readily discernable preferential pathways. Reference may be drawn to alternative assessment approaches: 1) Application of site specific conditions to the CRC CARE model for assessing PVI risk 2) Soil gas interpretation for areas where a PVI risk is identified from groundwater analysis.	Secondary
Soil	Concentrations of PHC in soil	Concentrations in soil may be subject variability due to soil moisture, organic content and oxygen ingress all which create significant bias in threshold values. Reliance is place on utilizing groundwater analysis over soil.	Tertiary

9.3 Soil

9.3.1 Guidelines

Soil HSL's are specific to each soil sample and involves characterisation based on the following variables:

- Land use class;
- Dominant grain size class of material at the soil sample depth or based on the dominant grain class of the backfill material based on US Agriculture Soil Classification System (SCS) and partitioning into either sand, silt or clay; and
- Classifying soil according to depth ranges: 0 to 1 m; 1 to 2 m; 2 to 4 m; and greater than 4 m;

Table 17 summarises soil bores and land use classification used to characterise PVI risk for various properties near the site.

Table 17 Classification Used to Assess Petroleum Vapour Intrusion Risk to Local Receptors from Soil

Property	Soil Bores	Land Use Class
35 Melville Street	All bores	D

9.3.2 Findings

Laboratory analytical results are presented in Appendix 5. Table 18 presents soil hydrocarbon analytical results compared against NEPM (2013) health screening levels (HSL). Concentrations which exceeded laboratory LOR would be highlighted in bold, and HSL exceedances would be highlighted with a colored cell indicating the highest HSL land used class which is exceeded.

There were no HSL D exceedances, indicating a low PVI risk to commercial occupants at the site.

Table 18 Soil Analytical Results Compared Against HSL D

Soil Hydrocarbon HSL's for Assessing Indoor Vapour Intrusion (NEPM 2013) Soil Sample Analysis					EP080: BTEXN					EP080/071: TRH	
Bold - Indicates LOR Exceedances					Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene	F1	F2
Colour Shading - Indicates HSL Exceedances: >1 x, * 2-5 x, ** 5-20 x, *** 20-50 x, **** >50 x											
Sample ID	Sample Date	Depth Class	Grain Class	HSL	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
					LOR 0.2	LOR 0.5	LOR 0.5	LOR 0.5	LOR 1	LOR 10	LOR 50
BH1 0-0.2	3/12/2020	>SLAB/CUT RL	CLAY	D	<0.2	<0.5	<0.5	<0.5	<1	<10	<50
BH1 0.5-0.6	3/12/2020	0 - 1	CLAY	D	<0.2	<0.5	<0.5	<0.5	<1	<10	<50
BH2 0.3-0.5	3/12/2020	0 - 1	CLAY	D	<0.2	<0.5	<0.5	<0.5	<1	<10	<50

10 TRENCH WORKER PVI ASSESSMENT – HSL's

10.1 Classification

The following Health Screening Assessment is based on hydrocarbon vapour intrusion risk to subsurface excavation workers within excavations. This is assessed through analysis of vapors from soil and soil vapours. Groundwater is generally not used to assess risk as threashold limits for all depth and grain classes are non-limiting. Land use classes are not applicable when assessing vapour intrusion into trenches.

Soil and soil vapour HSL's for assessing hydrocarbon risk to maintenance workers are based on CRC CARE Technical Report 10 guidelines (Friebel & Nadebaum 2011) and the following variables:

- Dominant grain size class of material at the soil sample depth or based on the dominant grain class of the backfill material based on US Agriculture Soil Classification System (SCS) and partitioning into either sand, silt or clay; and
- Classifying soil according to depth ranges: 0 to 2 m; 2 to 4 m; 4 to 8 m; and greater than 8 m;

10.2 Findings

Laboratory analytical results are presented in Appendix 5. Table 19 Summary of Soil Analytical Results Compared against HSL's for Assessing PVI Risk to Trench Workers. If concentrations exceeded laboratory LOR they would be highlighted in bold, and if there were any HSL exceedances they would be highlighted with a colored cell. There were no results above the laboratory LOR and there were no exceedances of the CRC CARE HSL guidelines for Assessing PVI Risk to Trench Workers.

Table 19 Summary of Soil Analytical Results Compared against HSL's for Assessing PVI Risk to Trench Workers

CRC CARE Health Screening Level Assessment for PHC Inhalation Risk To Trench Workers From Soil Sample Analysis				EP080: BTEXN					EP080/071: TRH	
Bold - Indicates LOR Exceedances				Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene	C6 - C10 Fraction	>C10 - C16 Fraction
Dark Grey Shading - Indicates HSL Exceedances: >1 x, * 2-5 x, ** 5-20 x, *** 20-50 x, **** >50 x										
Sample ID	Sample Date	Depth Class	Grain Class	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
				LOR 0.2	LOR 0.5	LOR 0.5	LOR 0.5	LOR 1	LOR 10	LOR 50
BH1 0-0.2	3/12/2020	4 to 8m	CLAY	<0.2	<0.5	<0.5	<0.5	<1	<10	<50
BH1 0.5-0.6	3/12/2020	0 to 2m	CLAY	<0.2	<0.5	<0.5	<0.5	<1	<10	<50
BH2 0.3-0.5	3/12/2020	0 to 2m	CLAY	<0.2	<0.5	<0.5	<0.5	<1	<10	<50

11 SOIL DISPOSAL ASSESSSMENT

11.1 Guidelines

Soil which is excavated from the site for landfill disposal is to be assessed against Information Bulletin 105 (IB105) for Classification and Management of Contaminated Soil for Disposal. The Environmental Protection Authority (EPA) uses 4 categories to classify contaminated soil as per Table 10:

- (Level 1) Fill Material;
- (Level 2) Low Level Contaminated Soil;
- (Level 3) Contaminated Soil; and
- (Level 4) Contaminated Soil.

Fixed numerical values are presented for soil concentrations and leachable fraction concentrations.

Table 10 Summary of IB105 Classification Guidelines

	Classification (with reference to Table 2)	Controlled Waste[1]	Comments
Fill Material[2] (Level 1)	Soil that exhibits levels of contaminants below the limits defined under *Fill Material* in Table 2.	Unlikely	Soil classified as *Fill Material* can still be a 'pollutant' under the *Environmental Management and Pollution Control Act 1994* and needs to be responsibly managed.
Low Level Contaminated Soil (Level 2)	Soil that exhibits levels of contaminants above the limits defined under *Fill Material* but below the limits defined under *Low Level Contaminated Soil* in Table 2.	Likely	Where leachable concentrations have not been prescribed, maximum total concentrations will be used to classify the soil.
Contaminated Soil (Level 3)	Soil that exhibits levels of contaminants above the limits defined under *Low Level Contaminated Soil* but below the limits defined under *Contaminated Soil* in Table 2.	Yes	Where leachable concentrations have not been prescribed, maximum total concentrations will be used to classify the soil.
Contaminated Soil for Remediation (Level 4)	Soil that exhibits levels of contaminants above the limits defined under *Contaminated Soil* in Table 2 (regardless of the maximum total concentrations) is generally ***not*** considered acceptable for off-site disposal without prior treatment.	Yes	Soil that contains contaminants that do not have criteria for leachable concentrations (*e.g.* petroleum hydrocarbons), and the levels of contaminants exceed the maximum total concentrations listed in *Contaminated Soil*, are generally classified as *Contaminated Soil for Remediation*.

[1] Controlled Waste is defined in the *Environmental Management and Pollution Control Act 1994*.
[2] Criteria for *Fill Material* are the limits set by the Director for the purposes of R.9(2)(a)(ii) in the *Regulations*.

11.2 Findings

The soil samples were compared against IB105 guidelines for soil disposal, see Table 11. All material tested are classified as Level 2 Material; except for Benzo(a)pyrene and PAH in BH2 which is at level 3 for total concentrations.

As a precaution, any soil excavated from the site should be managed in accordance with IB 105 to ensure that does not pose a risk to human health or the environment. This must include adequate stockpiling, sampling and testing for disposal by licensed contractors.

Table 11 Soil Analytical Results Compared Against IB105 Investigation Limits for soil Disposal

Information Bulletin 105 Classification and Management of Contaminated Soil For Disposal		Arsenic	Barium	Beryllium	Cadmium	Chromium Total	Copper	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	Zinc	Benzo(a)pyrene	C6 - C9 Fraction	C10 - C36 Fraction (sum)	Sum of polycyclic aromatic hydrocarbons	Benzene	Toluene	Ethylbenzene	Total Xylenes
Unit		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR		5	10	1	1	2	5	2	5	5	0.1	2	5	5	0.5	10	50	0.5	0.2	0.5	0.5	0.5
Investigation Level Selected																						
IB105 Level 1		<20	<300	<2	<3	<50	<100	<100	<300	<500	<1	<60	<10	<200	<0.08	<65	<1000	<20	<1	<1	<3	<14
IB105 Level 2		20	300	2	3	50	100	100	300	500	1	60	10	200	0.08	65	1000	20	1	1	3	14
IB105 Level 3		200	3000	40	40	500	2000	200	1200	5000	30	600	50	14000	2	650	5000	40	5	100	100	180
IB105 Level 4		750	30000	400	400	5000	7500	1000	3000	25000	110	3000	200	50000	20	1000	10000	200	50	1000	1080	1800
3/12/2020	BH1 0-0.2 X	<5	70	<1	<1	7	32	7	80	185	<0.1	6	<5	233	0.6	<10	<50	6	<0.2	<0.5	<0.5	<0.5
3/12/2020	BH1 0.5-0.6	6	80	<1	<1	6	64	12	90	285	0.1	8	<5	269	2	<10	110	34.2	<0.2	<0.5	<0.5	<0.5
3/12/2020	BH2 0.3-0.5	33	240	<1	1	21	105	12	400	366	0.3	17	<5	799	5.3	<10	430	45.4	<0.2	<0.5	<0.5	<0.5

12 CONCEPTUAL SITE MODEL

It should be noted that the area onsite investigated was limited to the footprint of the redevelopment. Any changes to the development or proposed site uses, may trigger the need to reassess the analytical results against different investigation levels or conduct further onsite investigations.

12.1 Potential & Identified Sources of Contamination

12.1.1 Potential onsite Contamination

The primary potential sources of contamination impact in the urban setting of the investigation area includes the following, though probably limited exposure given the site is sealed by concrete/asphalt:

- The urban setting – heavy metals from historical building or historical site fill –- low level detections within safe guideline levels for Human Health; and
- PAHs from heating oil tanks/ coal or charcoal burning – low level detections within safe guideline levels for Human Health.

Given the historical use of the site there may have been other areas at the site where potentially contaminating activities have occurred. GES is not aware of any other such activities at the time this report was written.

12.1.2 Confirmed Primary Source

No primary source of contamination have been identified on site with the exception of low level metal contamination.

12.1.3 Potential Primary Sources

There may be unknown potential sources of onsite or offsite impact (outside of the sampling areas) which GES are unaware of and therefore have not been investigated within this assessment.

12.1.4 Potential Offsite Contamination

Potentially contaminating activities may have occurred at the following locations;

- 69-75 Argyle Street; Former Mobil Service Station – if contaminated groundwater is present it is unlikely to impact the site, as groundwater is likely travelling east away from the site;
- 77-79 Argyle Street; Fire Station with known USTs – if contaminated groundwater is present it is unlikely to impact the site, as groundwater is likely travelling east away from the site;
- 98-110 Argyle Street; Co-operative Motors (Former Ampol Service Station). (GES, 2017 confirmed that there was not hydrocarbon impact affecting 92-96 Argyle Street so it is likely to assume that no impact from 98-110 Argyle street is impacting the current site.
- 37-47 Melville street, former webster vehicle workshop, located down gradient of the site, the site is now redeveloped and known soil contamination removed. Considered very unlikely to impact the site.
- 27 Melville Street, former bodyworks, site now redeveloped into offices, no contamination identified of concern during redevelopment.

Given the site has been in an urban setting for over 150 years, there may be residual low level contamination from building and or road surfacing materials such as paints and asphalt mix as well as contamination from leaded fuel exhaust fallout.

12.1.5 Potential Secondary Sources of Contamination

No secondary sources of contamination has been identified.

12.2 Potential Receptors

The following presents a summary of all potential receptors considered in the assessment.

12.2.1 Potential Future Onsite Users

Although contamination has not exceeded guideline limits, potential future onsite receptors are presented in

Table 123.

Table 123 Summary of Potential Future Onsite Receptors

Medium	Specific Onsite Receptor
Soil Impact	Future site commercial workers involved soil removal – redevelopment phase
	Future trench workers - ongoing
	Future onsite inhabitants (grounds and maintenance workers) - ongoing
	Ecological receptors

12.2.2 Excluded Ecological Receptors

Despite low level detections of B(a)p and heavy metals for ESL and EIL guidelines, all ecological receptors have been excluded for the following reasons:

1. The soil at the site is covered by either concrete, asphalt, or building or both and will not be exposed to groundwater percolation following redevelopment; and
2. The closest ecological receptor is the Hobart Rivulet which is spatially separated from the site by approximately 350 m.
3. This conclusion is based upon implementation of a soil and water management plan (SWMP) for all excavation works.

12.2.3 Potential Offsite Human Receptors

No human health risks have been identified and therefore it is very unlikely any potential impact from the site would impact offsite human receptors.

12.3 Transport Mechanisms and Exposure Routes

Figure 5 illustrates the potential pathways, receptors and exposure pathways of contamination between those sources and receptors. No plausible contamination or contamination exposure pathways have been identified.

12.3.1 Incomplete Contaminant Exposure Pathways

No contamination has been identified that would adversely impact human health. Therefore, all exposure pathways are currently incomplete.

12.3.2 Potential Pathways

As the heavy metal impacted soil does not exceed commercial guideline limits therefore a risk to site development workers is not apparent.

12.3.3 Plausible Contaminant Exposure Pathway Details

Plausible exposure pathways have not been identified at the site for soil or groundwater contamination.

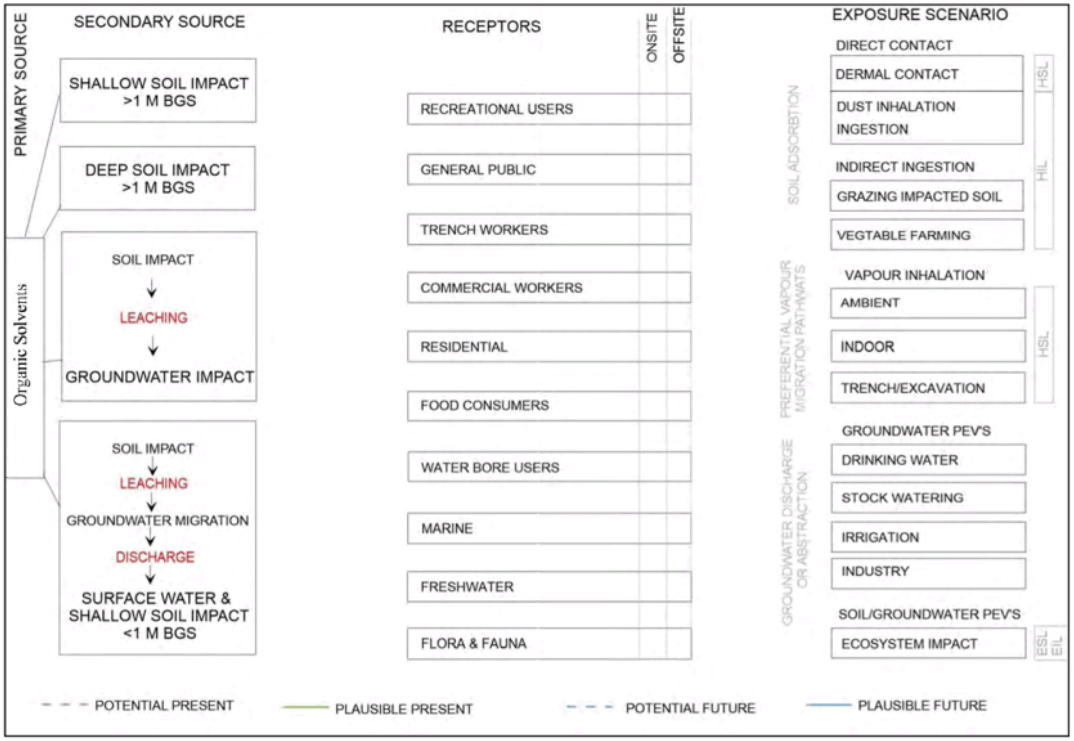


Figure 5 Conceptual Site Model Identifying Contamination Source, Receptors and Transport Mechanisms/Exposure Routes

13 CONCLUSIONS

13.1 Desktop Assessment

From the desktop assessment, it is concluded that:

- The geology of the site is mapped as Jurassic dolerite and Triassic sandstone.
- The site ranges in elevation from approximately 20 to 24 m AHD over 26 m with a 5% gradient to the South.
- The surface of the site is almost entirely covered by concrete, asphalt, and the existing building. Rainfall flow onsite is directed from the roof via gutters and downpipes and the carpark area into storm water drains. The surrounding area is largely paved surfaces of bitumen on the roads, concrete footpaths and densely spaced building; thus opportunity for water to infiltrate the groundwater system is greatly limited.
- The hydrogeology of the area is likely to consist of groundwater moving parallel with slope to the south from the site towards Elizabeth Street and the Hobart Rivulet and ultimately the River Derwent at Sullivans Cove.
- The Hobart Rivulet is the closest ecological receptor which is approximately 350 m away and then the River Derwent at Sullivans, which is approximately 680 m away. It is unlikely that any potential impact from the site will impact downgradient ecosystem receptors, given the spatial separation and the comprehensive surface covering at the site.
- Based on a review of the historical aerial photographs ranging from 1957 to 1989; The site appears to have had little change over the past 60 years;
- Surrounding sites were identified as having potentially contaminating activities; however, due to the topography and the inferred groundwater contours it is unlikely that potential impact from these sites have migrated to the investigation area.
- Worksafe Tasmania do not hold any files regarding potentially contaminating activities at the site.
- The site has not hosted a known potentially contaminating activity for the past 60 years and the only potential concern is possible site fill and any leakage from parked cars.
- Given the urban setting there is the potential at the site for the following:
  - Uncontrolled historical site fill with building debris;
  - Historical buildings with leaded paint; and
  - PAH's in heating oil or old charcoal waste from fires
- Contaminants of potential concern that may have been present at the site and that were tested for in the soil analysis are listed in the scope of work.

13.2 Adopted Land Use Settings

The following investigation limits of land use guidelines were adopted for the site:

- Ecosystem – commercial/ Industrial use;
- Future land users access to soil – limited soil access in commercial space (The footprint of the workshop extension will be 100% paved) therefore:
  - HIL D for soil ingestion and inhalation and
  - HSL D for dermal contact;
- Future land users vapour inhalation risk – HSL D for commercial workers
- Site development works:
  - HSL D for vapour intrusion risk based on commercial land use;
  - Standard guidelines for assessing dermal contact risk; and
  - HIL D for assessing dust inhalation and soil ingestion risk
- Contamination exposure to trench workers:
  - HSL D for vapour intrusion risk based on commercial land use;
  - Standard guidelines for assessing dermal contact risk; and
  - HIL D for assessing dust inhalation and soil ingestion risk

13.3 Invasive Soil Assessment

From the soil assessment in the footprint of the redevelopment, it is concluded that:

- Low detections of PAHs and metals did not exceed human health guidelines. Therefore, a risk to human health has not been identified for either during construction for workers or post construction for future site users and future maintenance workers.
- Although there ecological guideline exceedance for Benzo (a) pyrene, zinc and copper, for the following reasons, GES does not consider that there is a risk to ecological receptors:
    1. The soil at the site is covered by either concrete/asphalt, or building or both and will not be exposed to groundwater percolation; and
    2. The closest ecological receptor is the Hobart Rivulet which is spatially separated from the site by approximately 350 m.
    3. A soil and water management plan will be implemented for all excavation works to eliminate the pathway from potentially contaminated soil to environmental receptors (groundwater & surface water).
- Other than advice provided within the recommendations section of this report, it was not deemed necessary to provide specific remediation and protection measures prior to the commencement of excavation works.

14 RECOMMENDATIONS

GES can confirm the following recommendations:

- No risk to workers involved in redevelopment of the site, or future users of the site, as a result of proposed excavation of the site has been identified.
- A soil and water management plan must be implemented prior to any excavation at the site to manage the potential environmental risk from excavation of potentially of contaminated soil
- No specific remediation and/or protection measures are required to ensure the redevelopment does not adversely impact human health, however, standard personal protective equipment and comprehensive hand washing is recommended prior to eating or drinking during site works as with any construction site work.
- With regards to soil disposal, benzo(a)pyrene and selected heavy metals are slightly elevated classifying the material at the site as Level 2 and level 3 material. Therefore, it is recommended that all excavated soil at the site should be stockpiled and assessed against IB105 guidelines for Classification and Management of Contaminated Soil for Disposal before it is transported by a licensed operator to an appropriate disposal facility.

This report only applies to the site at 35 Melville Street and is limited to that area only. Any changes to the development or proposed site uses, may trigger the need to reassess the analytical results against different investigation levels or conduct further onsite investigations.

If the recommendations are followed, the site is suitable for the proposed development in accordance with potentially contaminated land code of the Hobart Interim planning scheme.

Yours faithfully,

Mark Downie BAgrSc

Soil Scientist

15 LIMITATIONS STATEMENT

This limited scope ESA Report has been prepared in accordance with the scope of services between Geo-Environmental Solutions Pty. Ltd. (GES) and JSA (the Client'). To the best of GES's knowledge, the information presented herein represents the Client's requirements at the time of printing of the Report. However, the passage of time, manifestation of latent conditions or impacts of future events may result in findings differing from that described in this Report. In preparing this Report, GES has relied upon data, surveys, analyses, designs, plans and other information provided by the Client and other individuals and organisations referenced herein. Except as otherwise stated in this Report, GES has not verified the accuracy or completeness of such data, surveys, analyses, designs, plans and other information.

The scope of this study does not allow for the review of every possible soil and groundwater contaminant over the whole area of the site. Samples collected from the investigation area are assumed to be representative of the areas from where they were collected and indicative of the contamination status of the site at that point in time. The conclusions described within this report are based on these samples, the results of their analysis and an assessment of their contamination status.

This report does not purport to provide legal advice. Readers of the report should engage professional legal practitioners for this purpose as required.

No responsibility is accepted for use of any part of this report in any other context or for any other purpose by third party.

16 REFERENCES

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AS 4482:2005 Guide to the sampling and investigation of potentially contaminated soil – Part 1: Non-volatile and semi-volatile compounds, Standards Australia, 2005.

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NEPM, 1999.Guideline on Investigation Levels for Soil and Groundwater, Schedule B (1), National Environment Protection (Assessment of Site Contamination) Measure, National Environment Protection Council, 1999. Measures as amended, taking into account amendments up to National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1)

Queensland Government Natural Resources and Water 'Land Series' bulletin, Measuring Salinity. 2007. Managing Queensland's natural resources for today and tomorrow.

Appendix 1 GES Staff

GES is a specialist geotechnical and environmental consultancy providing advice on all aspects of soils, geology, hydrology, and soil and groundwater contamination across a diverse range of industries.

Geo Environmental Solutions Pty Ltd:

- ACN – 115 004 834
- ABN – 24 115 004 834

GES STAFF - ENGAGED IN SITE INVESTIGATION WORKS

Dr John Paul Cumming B.Agr.Sc (Hons) Phd CPSS GAICD

- Principle Author and Principle Environmental Consultant
- PhD in Environmental Soil Chemistry from the University of Tasmania in 2007
- 18 years' experience in environmental contamination assessment and site remediation.

Ms Sarah Joyce BSc (Hons)

- Senior Environmental Scientist
- Honours in Geography and Environmental Science at the University of Tasmania in 2003;
- Undergraduate Degree Double Major in Geology and Geography & Environmental Science
- 15 years professional work experience and 7 years contaminated site assessment

GES STAFF – WITH CONTAMINATED SITES EXPERIENCE

Mr Aaron Plummer(Cert. IV)

- Soil Technician
- 5 years' experience in hydrocarbon and heavy metal contamination sampling of soils and groundwater.

Mr Grant McDonald (Adv. cert. hort.)

- Soil Technician
- 10 years' experience in hydrocarbon and heavy metal contamination sampling of soils and groundwater.

Mr Mark Downie B.Agr.Sc (Hons)

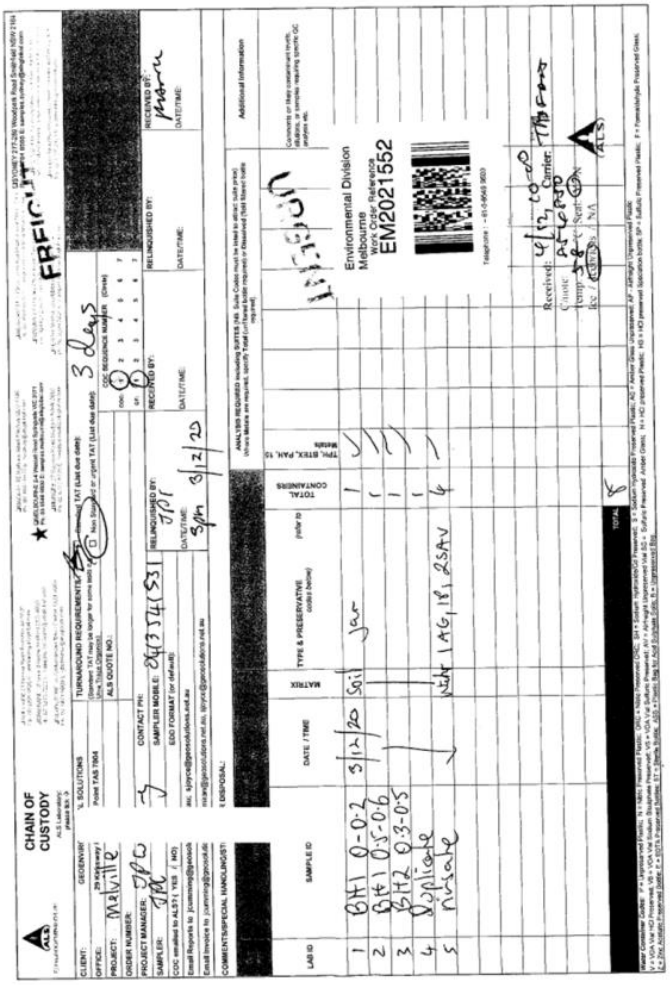
- Soil Scientist
- 8 Years experience in contamination assessment and reporting of soils and groundwater.

Ms Peri Lucas B.Agr.Sc (Hons)

- Soil Scientist
- 2 Year experience in contamination assessment and reporting of soils and groundwater.

Appendix 2 Site Photographs

Appendix 3 Laboratory Chain of Custody



CHAIN OF CUSTODY

ALS

Environmental Division
Melbourne
Work Order Reference
EM2021552

Appendix 4 Quality Assurance and Quality Control Documentation

Soil Duplicate

Duplicate Comparrison	Sample	Arsenic	Barium	Beryllium	Cadmium	Chromium Total	Cobalt	Copper	Lead	Manganese	Nickel	Zinc	Mercury	Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benz(a)anthracene	Chrysene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-cd)pyrene	Dibenz(a,h)anthracene	Benzo(g,h,i)perylene	Sum of polycyclic aromatic hydr	Benzo(a)pyrene TEQ (WHO)	Benzene	Toluene	Ethylbenzene	meta- & para-Xylene	ortho-Xylene	Sum of BTEX	Total Xylenes	Naphthalene	C6 - C9 Fraction	C10 - C14 Fraction	C15 - C28 Fraction	C29 - C36 Fraction	C10 - C36 Fraction (sum)	C6 - C10 Fraction	F1	>C10 - C16 Fraction	>C16 - C34 Fraction	>C34 - C40 Fraction	>C10 - C40 Fraction (sum)	F2	Benzo(a)pyrene TEQ (half LOR)	Benzo(a)pyrene TEQ (LOR)
Unit		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR		5	10	1	1	2	2	5	5	5	2	5	0.1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.2	0.5	0.5	0.5	0.5	0.2	0.5	1	10	50	100	100	50	10	10	50	100	100	50	50	0.5	0.5
3/12/2020	BH2 0.3-0.5	33	240	<1	1	21	12	105	400	366	17	799	0.3	<0.5	0.8	<0.5	<0.5	3.2	0.7	7	7.2	3.6	3.2	5.6	1.2	5.3	2.9	0.7	4	45.4	7.4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	<1	<10	<50	210	220	430	<10	<10	<50	370	100	470	<50	7.4	7.4
3/12/2020	Duplicate	33	200	<1	1	23	16	106	385	352	18	825	0.3	<0.5	0.8	<0.5	<0.5	3.5	0.8	7.8	8.1	4	3.7	6.1	2.4	6.2	3.4	0.8	4.6	52.2	8.7	<0.2	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	<1	<10	<50	210	220	430	<10	<10	<50	380	100	480	<50	8.7	8.7
Relative Percentage Difference (RPD) %		0.0	18.2	NA	0.0	9.1	28.6	0.9	3.8	3.9	5.7	3.2	0.0	NA	0.0	NA	NA	9.0	13.3	10.8	11.8	10.5	14.5	8.5	66.7	15.7	15.9	13.3	14.0	13.9	16.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.7	0.0	2.1	NA	16.1	16.1
RPD Compliance Limit %		50	30	NA	NA	50	50	30	30	30	50	15	50	NA	NA	NA	NA	50	NA	50	50	50	50	50	50	50	50	NA	50	30	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	50	50	50	NA	NA	NA	NA	50	NA	50	NA	50	50
Method Detection Limit (MDL)		100	1000	NA	NA	40	40	500	500	500	40	>500	2	NA	NA	NA	NA	10	NA	10	10	10	10	10	10	10	10	NA	10	50	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2000	2000	1000	NA	NA	NA	2000	NA	1000	NA	10	10
MDL Class		LOW	MED	NONE	NONE	LOW	LOW	MED	MED	MED	LOW	HIGH	LOW	NONE	NONE	NONE	NONE	LOW	NONE	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW	NONE	LOW	MED	LOW	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	LOW	LOW	LOW	NONE	NONE	NONE	NONE	LOW	NONE	LOW	NONE	LOW	LOW
RPD Compliance With MDL?	55/56 (98%)	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EM2021552	Page	: 1 of 8
Client	: GEO-ENVIRONMENTAL SOLUTIONS	Laboratory	: Environmental Division Melbourne
Contact	: DR JOHN PAUL CUMMING	Telephone	: +6138549 9630
Project	: Melville	Date Samples Received	: 04-Dec-2020
Site	: ----	Issue Date	: 09-Dec-2020
Sampler	: JPC	No. of samples received	: 5
Order number	: ----	No. of samples analysed	: 5

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.

RIGHT SOLUTIONS | RIGHT PARTNER

Page : 2 of 8
Work Order : EM2021662
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : Melville

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
TRH - Semivolatile Fraction	0	9	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
TRH - Semivolatile Fraction	0	9	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: **SOIL**

Evaluation: x = 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
EA055: Moisture Content (Dried @ 105-110°C)								
Soil Glass Jar - Unpreserved (EA055)								
BH1 0-0.2,	BH1 0.5-0.6,	**03-Dec-2020**	---	---	---	**04-Dec-2020**	17-Dec-2020	✓
BH2 0.3-0.5,	Duplicate							
EG005(ED093)T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved (EG005T)								
BH1 0-0.2,	BH1 0.5-0.6,	**03-Dec-2020**	**04-Dec-2020**	01-Jun-2021	✓	**04-Dec-2020**	01-Jun-2021	✓
BH2 0.3-0.5,	Duplicate							
EG035T: Total Recoverable Mercury by FIMS								
Soil Glass Jar - Unpreserved (EG035T)								
BH1 0-0.2,	BH1 0.5-0.6,	**03-Dec-2020**	**04-Dec-2020**	31-Dec-2020	✓	**07-Dec-2020**	31-Dec-2020	✓
BH2 0.3-0.5,	Duplicate							
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP075(SIM))								
BH1 0-0.2,	BH1 0.5-0.6,	**03-Dec-2020**	**07-Dec-2020**	17-Dec-2020	✓	**07-Dec-2020**	16-Jan-2021	✓
BH2 0.3-0.5,	Duplicate							

Page : 3 of 8
Work Order : EM2021552
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : Melville

Matrix: **SOIL** Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Petroleum Hydrocarbons								
Soil Glass Jar - Unpreserved (EP080)								
BH1 0-0.2,	BH1 0.5-0.6,	03-Dec-2020	04-Dec-2020	17-Dec-2020	✓	04-Dec-2020	17-Dec-2020	✓
BH2 0.3-0.5,	Duplicate							
Soil Glass Jar - Unpreserved (EP071)								
BH1 0-0.2,	BH1 0.5-0.6,	03-Dec-2020	07-Dec-2020	17-Dec-2020	✓	07-Dec-2020	16-Jan-2021	✓
BH2 0.3-0.5,	Duplicate							
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Soil Glass Jar - Unpreserved (EP080)								
BH1 0-0.2,	BH1 0.5-0.6,	03-Dec-2020	04-Dec-2020	17-Dec-2020	✓	04-Dec-2020	17-Dec-2020	✓
BH2 0.3-0.5,	Duplicate							
Soil Glass Jar - Unpreserved (EP071)								
BH1 0-0.2,	BH1 0.5-0.6,	03-Dec-2020	07-Dec-2020	17-Dec-2020	✓	07-Dec-2020	16-Jan-2021	✓
BH2 0.3-0.5,	Duplicate							
EP080: BTEXN								
Soil Glass Jar - Unpreserved (EP080)								
BH1 0-0.2,	BH1 0.5-0.6,	03-Dec-2020	04-Dec-2020	17-Dec-2020	✓	04-Dec-2020	17-Dec-2020	✓
BH2 0.3-0.5,	Duplicate							

Matrix: **WATER** Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		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)							
Rinsate	03-Dec-2020	---	---	---	07-Dec-2020	01-Jun-2021	✓
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Filtered; Lab-acidified (EG035F)							
Rinsate	03-Dec-2020	---	---	---	07-Dec-2020	31-Dec-2020	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM))							
Rinsate	03-Dec-2020	04-Dec-2020	10-Dec-2020	✓	07-Dec-2020	13-Jan-2021	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071)							
Rinsate	03-Dec-2020	04-Dec-2020	10-Dec-2020	✓	07-Dec-2020	13-Jan-2021	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
Rinsate	03-Dec-2020	04-Dec-2020	17-Dec-2020	✓	05-Dec-2020	17-Dec-2020	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071)							
Rinsate	03-Dec-2020	04-Dec-2020	10-Dec-2020	✓	07-Dec-2020	13-Jan-2021	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
Rinsate	03-Dec-2020	04-Dec-2020	17-Dec-2020	✓	05-Dec-2020	17-Dec-2020	✓

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Matrix: **WATER** Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080)							
Rinsate	**03-Dec-2020**	**04-Dec-2020**	17-Dec-2020	✓	**05-Dec-2020**	17-Dec-2020	✓

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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)							
Moisture Content	EA055	4	40	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	1	6	16.67	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	14	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	4	25.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	15	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	6	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	14	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	4	25.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	6	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	14	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	4	25.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	6	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	14	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	4	25.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	15	6.67	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)							
Dissolved Mercury by FIMS	EG035F	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	20	10.00	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	0	9	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Dissolved Mercury by FIMS	EG035F	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard

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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 Control Samples (LCS) - Continued							
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	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	9	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Dissolved Mercury by FIMS	EG035F	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	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	9	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Dissolved Mercury by FIMS	EG035F	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	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	0	9	0.00	5.00	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	5.00	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
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).
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 (SnCl2) (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 SnCl2 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	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)
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.
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 (SnCl2)(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 SnCl2 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)

Appendix 5 Soil Analytical Results - Certificate of Analysis

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: EM2021552	Page	: 1 of 9
Client	: GEO-ENVIRONMENTAL SOLUTIONS	Laboratory	: Environmental Division Melbourne
Contact	: DR JOHN PAUL CUMMING	Contact	: Shirley LeCornu
Address	: 29 KIRKSWAY PLACE BATTERY POINT TASMANIA, AUSTRALIA 7004	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: +61 03 6223 1839	Telephone	: +6138549 9630
Project	: Melville	Date Samples Received	: 04-Dec-2020 10:00
Order number	: ----	Date Analysis Commenced	: 04-Dec-2020
C-O-C number	: ----	Issue Date	: 09-Dec-2020 15:16
Sampler	: JPC		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 5		
No. of samples analysed	: 5		

ilac-MRA NATA
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 Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

RIGHT SOLUTIONS | RIGHT PARTNER

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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.

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.

- EG005T: EM2021552-003 Total metal results have been confirmed by re-digestion and re-analysis
- 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.
- 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.
- EG020-F : EM2021552 #5 results for dissolved Barium have been confirmed by re-preparation and re-analysis.

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Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH1 0-0.2	BH1 0.5-0.6	BH2 0.3-0.5	Duplicate	----
				Sampling date / time	03-Dec-2020 00:00	03-Dec-2020 00:00	03-Dec-2020 00:00	03-Dec-2020 00:00	----
Compound	CAS Number	LOR	Unit		EM2021552-001	EM2021552-002	EM2021552-003	EM2021552-004	----------
					Result	Result	Result	Result	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		4.6	4.5	13.7	13.4	----
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	6	33	33	----
Barium	7440-39-3	10	mg/kg		70	80	240	200	----
Beryllium	7440-41-7	1	mg/kg		<1	<1	<1	<1	----
Boron	7440-42-8	50	mg/kg		<50	<50	<50	<50	----
Cadmium	7440-43-9	1	mg/kg		<1	<1	1	1	----
Chromium	7440-47-3	2	mg/kg		7	6	21	23	----
Cobalt	7440-48-4	2	mg/kg		7	12	12	16	----
Copper	7440-50-8	5	mg/kg		32	64	105	106	----
Lead	7439-92-1	5	mg/kg		80	90	400	385	----
Manganese	7439-96-5	5	mg/kg		185	285	366	352	----
Nickel	7440-02-0	2	mg/kg		6	8	17	18	----
Selenium	7782-49-2	5	mg/kg		<5	<5	<5	<5	----
Vanadium	7440-62-2	5	mg/kg		30	50	38	41	----
Zinc	7440-66-6	5	mg/kg		233	269	799	825	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	0.1	0.3	0.3	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	0.6	<0.5	<0.5	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	1.0	0.8	0.8	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Phenanthrene	85-01-8	0.5	mg/kg		1.1	7.8	3.2	3.5	----
Anthracene	120-12-7	0.5	mg/kg		<0.5	1.5	0.7	0.8	----
Fluoranthene	206-44-0	0.5	mg/kg		1.2	6.0	7.0	7.8	----
Pyrene	129-00-0	0.5	mg/kg		1.3	6.1	7.2	8.1	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		0.6	2.3	3.6	4.0	----
Chrysene	218-01-9	0.5	mg/kg		0.6	2.0	3.2	3.7	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		0.6	2.2	5.6	6.1	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	0.7	1.2	2.4	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		0.6	2.0	5.3	6.2	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	0.9	2.9	3.4	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	0.7	0.8	----

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Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH1 0-0.2	BH1 0.5-0.6	BH2 0.3-0.5	Duplicate	----
				Sampling date / time	03-Dec-2020 00:00	03-Dec-2020 00:00	03-Dec-2020 00:00	03-Dec-2020 00:00	----
Compound	CAS Number	LOR	Unit		EM2021552-001	EM2021552-002	EM2021552-003	EM2021552-004	-------
					Result	Result	Result	Result	---
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg		<0.5	1.1	4.0	4.6	---
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		6.0	34.2	45.4	52.2	---
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		0.7	2.6	7.4	8.7	---
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		1.0	2.9	7.4	8.7	---
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		1.3	3.1	7.4	8.7	---
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	---
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	---
C15 - C28 Fraction	----	100	mg/kg		<100	110	210	210	---
C29 - C36 Fraction	----	100	mg/kg		<100	<100	220	220	---
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	110	430	430	---
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	---
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	---
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	---
>C16 - C34 Fraction	----	100	mg/kg		<100	140	370	380	---
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	100	100	---
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	140	470	480	---
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	---
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	---
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	---
Ethylbenzene	100-41-4	0.5	mg/kg		<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	---
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	---
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	---
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	---
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	---
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		92.4	91.2	90.4	90.6	---
2-Chlorophenol-D4	93951-73-6	0.5	%		93.5	93.1	93.2	93.3	---
2,4,6-Tribromophenol	118-79-6	0.5	%		74.2	77.9	85.9	87.7	---

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Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH1 0-0.2	BH1 0.5-0.6	BH2 0.3-0.5	Duplicate	----
				Sampling date / time	03-Dec-2020 00:00	03-Dec-2020 00:00	03-Dec-2020 00:00	03-Dec-2020 00:00	----
Compound	CAS Number	LOR	Unit		EM2021552-001	EM2021552-002	EM2021552-003	EM2021552-004	-------
					Result	Result	Result	Result	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		97.0	98.7	98.5	99.2	---
Anthracene-d10	1719-06-8	0.5	%		108	103	106	105	---
4-Terphenyl-d14	1718-51-0	0.5	%		101	96.0	94.0	93.6	---
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		84.6	89.0	85.1	81.3	---
Toluene-D8	2037-26-5	0.2	%		85.6	89.9	87.2	84.9	---
4-Bromofluorobenzene	460-00-4	0.2	%		85.7	88.4	83.6	79.0	---

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Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : Melville

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	Rinsate	----	----	----	----
				Sampling date / time	03-Dec-2020 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2021552-005	-------	-------	-------	-------
					Result	---	---	---	---
EG020F: Dissolved Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	---	---	---	---
Boron	7440-42-8	0.05	mg/L		<0.05	---	---	---	---
Barium	7440-39-3	0.001	mg/L		0.002	---	---	---	---
Beryllium	7440-41-7	0.001	mg/L		<0.001	---	---	---	---
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	---	---	---	---
Cobalt	7440-48-4	0.001	mg/L		<0.001	---	---	---	---
Chromium	7440-47-3	0.001	mg/L		<0.001	---	---	---	---
Copper	7440-50-8	0.001	mg/L		<0.001	---	---	---	---
Manganese	7439-96-5	0.001	mg/L		<0.001	---	---	---	---
Nickel	7440-02-0	0.001	mg/L		<0.001	---	---	---	---
Lead	7439-92-1	0.001	mg/L		<0.001	---	---	---	---
Selenium	7782-49-2	0.01	mg/L		<0.01	---	---	---	---
Vanadium	7440-62-2	0.01	mg/L		<0.01	---	---	---	---
Zinc	7440-66-6	0.005	mg/L		<0.005	---	---	---	---
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	---	---	---	---

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Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	Rinsate	----	----	----	----
				Sampling date / time	03-Dec-2020 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2021552-005	———	———	———	———
					Result	---	---	---	---
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
^ 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	---	---	---	---
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	%		34.6	---	---	---	---
2-Chlorophenol-D4	93951-73-6	1.0	%		71.0	---	---	---	---
2.4.6-Tribromophenol	118-79-6	1.0	%		63.6	---	---	---	---
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		81.0	---	---	---	---
Anthracene-d10	1719-06-8	1.0	%		79.1	---	---	---	---
4-Terphenyl-d14	1718-51-0	1.0	%		86.6	---	---	---	---

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Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	Rinsate	---	---	---	---
				Sampling date / time	03-Dec-2020 00:00	---	---	---	---
Compound	CAS Number	LOR	Unit		EM2021552-005	------	------	------	------
					Result	---	---	---	---
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		104	---	---	---	---
Toluene-D8	2037-26-5	2	%		99.7	---	---	---	---
4-Bromofluorobenzene	460-00-4	2	%		97.4	---	---	---	---

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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
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		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	46
2-Chlorophenol-D4	93951-73-6	23	104
2.4.6-Tribromophenol	118-79-6	28	130
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	36	114
Anthracene-d10	1719-06-8	51	119
4-Terphenyl-d14	1718-51-0	49	127
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

35 Melville Street, Hobart

Statement of Archaeological Potential and Heritage Impact Statement

AUTHOR: Stuart Huys and Zoe Smith
27 Apsley St, South Hobart TAS 7004

CLIENT: JMG

15.6.2021.

CULTURAL HERITAGE MANAGEMENT AUSTRALIA

Report Version Control

Report version	Report distribution	Date of Distribution
Draft Report V1	Zoe Smith (CHMA) for editing	17/12/2020
Draft Report V1	JSA for review	17/12/2020
Final Draft Report V1		

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Executive Summary

Project Background

JSA Consulting Engineers (JSA) have been engaged to prepare designs and prepare Planning Approvals applications for proposed works at 35 Melville Street. Hobart (the study area). The existing site and building is currently being used as serviced offices with parking to the rear of the building, which is accessed via a driveway along the northern boundary of the site. Figure 1 shows the location of the study area, with Figure 2 showing the site boundaries.

The proponent is proposing to change the use to a public bar with a beer garden to the rear of the building. This will involve alterations to the existing building and site, as well as a change in use to Hotel Industry.

JSA has submitted a Development application for the proposed works at 35 Melville Street to the Hobart City Council (HCC). The HCC has responded with a request for additional information (dated 3-11-2020). The HCC advised that the property is located within a designated zone of Archaeological Potential and is also heritage listed in Table E13.1 of the Historic Heritage Code. In order to assess the application in relation to the relevant provisions of the Historic Heritage Code of the *Hobart Interim Planning Scheme 2015* (HIPS 2015), the HCC has requested (among other things), the preparation of a Statement of Archaeological Potential and Heritage Impact Statement as defined in Table E`13.3.1 of the Historic Heritage Code. A copy of the response provided by the HCC is provided in Appendix 2.

CHMA Pty ltd has been engaged by JSA to prepare a Statement of Archaeological Potential and Heritage Impact Statement for the development proposal at 35 Melville Street. This report presents this information.

Statement of Archaeological Potential Heritage Impact Statement and Management Recommendations

Table i below provides a summary of the Statement of Archaeological Potential, the Heritage Impacts Statement and management recommendations for 35 Melville Street. The detailed statements and recommendations are presented in sections 5 and 6 of this report. Section 2 of the report provides an overview of the legislative and statutory framework that is relevant to the project. Section 3 provides an historic background for the study area, with specific focus on the key phases of development at 35 Melville Street. A statement of significance for heritage features is provided in section 4 of the report.

Table i: Summary Statement of Archaeological Potential, Heritage Impact Statement and Management Recommendations

Heritage Feature	Work Proposal	Statement of Archaeological Potential	Heritage Impact Statement and Management Recommendations
Stone Wall on Melville Street Frontage	Construction of new stair access to buildings	Low to Very Low Excavation works to be focused in area where there is a deep deposit of existing modern fill and concrete.	Stone wall feature will not be directly impacted by works. Management procedures have been put in place to ensure the integrity of the wall is not compromised during construction works.
Suspected Front 1840s Dwelling Foundations	Internal and external renovation works not involving soil disturbance.	Very Low Any associated foundations are likely to have been destroyed an no earth works planned for this area.	Negligible potential for any impacts. No Requirements.
Suspected 1840s Dwelling Foundations on side boundary	Excavation works proposed just to the west of the suspected location of the feature	Low-Moderate The suspected location of the dwelling is under the existing driveway access. There is the possibility for foundation features still to survive in this area.	The proposed excavation works are situated just to the west of the suspected location of the foundations. Therefore there is a minimal potential for impacts. Monitoring of initial earth disturbances recommended as a precautionary measure.
Existing Building Front Face	Minor extension of roof, painting and landscaping.	Not applicable	Proposed works will have minimal impacts on heritage values of the front of the building. No additional requirements.
Remaining Building Area	Internal and external modifications not involving major soil disturbances	Not applicable	Proposed works will have no impacts on heritage values.

1.0 Project Background

1.1 Project Description

JSA Consulting Engineers (JSA) have been engaged to prepare designs and prepare Planning Approvals applications for proposed works at 35 Melville Street. Hobart (the study area). The existing site and building is currently being used as serviced offices with parking to the rear of the building, which is accessed via a driveway along the northern boundary of the site. Figure 1 shows the location of the study area, with Figure 2 showing the site boundaries.

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CHMA Pty ltd has been engaged by JSA to prepare a Statement of Archaeological Potential and Heritage Impact Statement for the development proposal at 35 Melville Street. This report presents this information.

1.2 Project Methodology

This assessment has been implemented in three broad stages.

Stage 1 (Background Research and Project Liaison)

Contact with Heritage Tasmania and Hobart City Council

Heritage Tasmania (HT) was contacted to seek advice regarding any specific heritage requirements for the assessment. The primary contact person at Heritage Tasmania was Russell Dobie (Regional Heritage Advisor). Russell Dobie provided advice (via email dated 17-11-2020) that 35 Melville Street is not listed on the Tasmanian Heritage Register (THR), and therefore HT has no formal interest in this project. It was noted that the properties either side of 35 Melville Street (33 Melville Street and 37-47 Melville Street) are listed on the THR. The boundary stone wall that runs along the east boundaries of all three properties does not appear to be included on the THR.

On the 26-11-2020, Zoe Smith (CHMA) contacted Sarah Waight, the Senior Cultural Heritage Officer from the Hobart City Council. As part of this initial contact, an on-site meeting was organised to discuss the details of the project proposal.

Collation of Background Information

As part of Stage 1 the following research was carried out and background information collated for this project.

- A review of the relevant heritage registers and the collation of information pertaining to heritage register entries for the study area and surrounds.
- Historic literature, site plans and records for the for the study area.
- Documentation and plans relating to the proposed installation of infrastructure associated with the Project.
- Planning and Regulatory requirements for heritage sites in Tasmania and the Hobart City Council Municipality.

Detailed historical research was also undertaken to understand the historical context of the study area, its growth and development over time. Resources were utilised from:

- National Library of Australia
- Trove online collections
- Tasmanian Archives
- LINC Tasmania

Stage 2 (Field Inspection and On-Site meeting)

Stage 2 entailed the fieldwork component of the Assessment. The field inspection was undertaken on the 16-11-2020 and the 2-12-2020 by Stuart Huys (CHMA archaeologist). The primary purpose of the field inspection was to confirm the proposed extent of renovation works at 35 Melville Street, to document any heritage features associated with the property, to ascertain the extent of potential impacts that these installations may have on heritage values, and to determine the potential archaeological sensitivity of these works.

On the 2-12-2020, an on-site meeting was held at 35 Melville Street. Present at this meeting were representatives from JSA, the HCC, CHMA and the proponent. The primary purpose of this meeting was to discuss the details of the proposed renovation works, with specific emphasis on the potential impacts of these works on the heritage values of the property.

Stage 3 (Preparation of Report)
Stage three of the project involved the production of this report which details the findings of the assessment and includes a Statement of Archaeological Potential for the proposed scope of works specified in section 1.1. The report has been prepared by Stuart Huys and Zoe Smith from CHMA Pty Ltd.

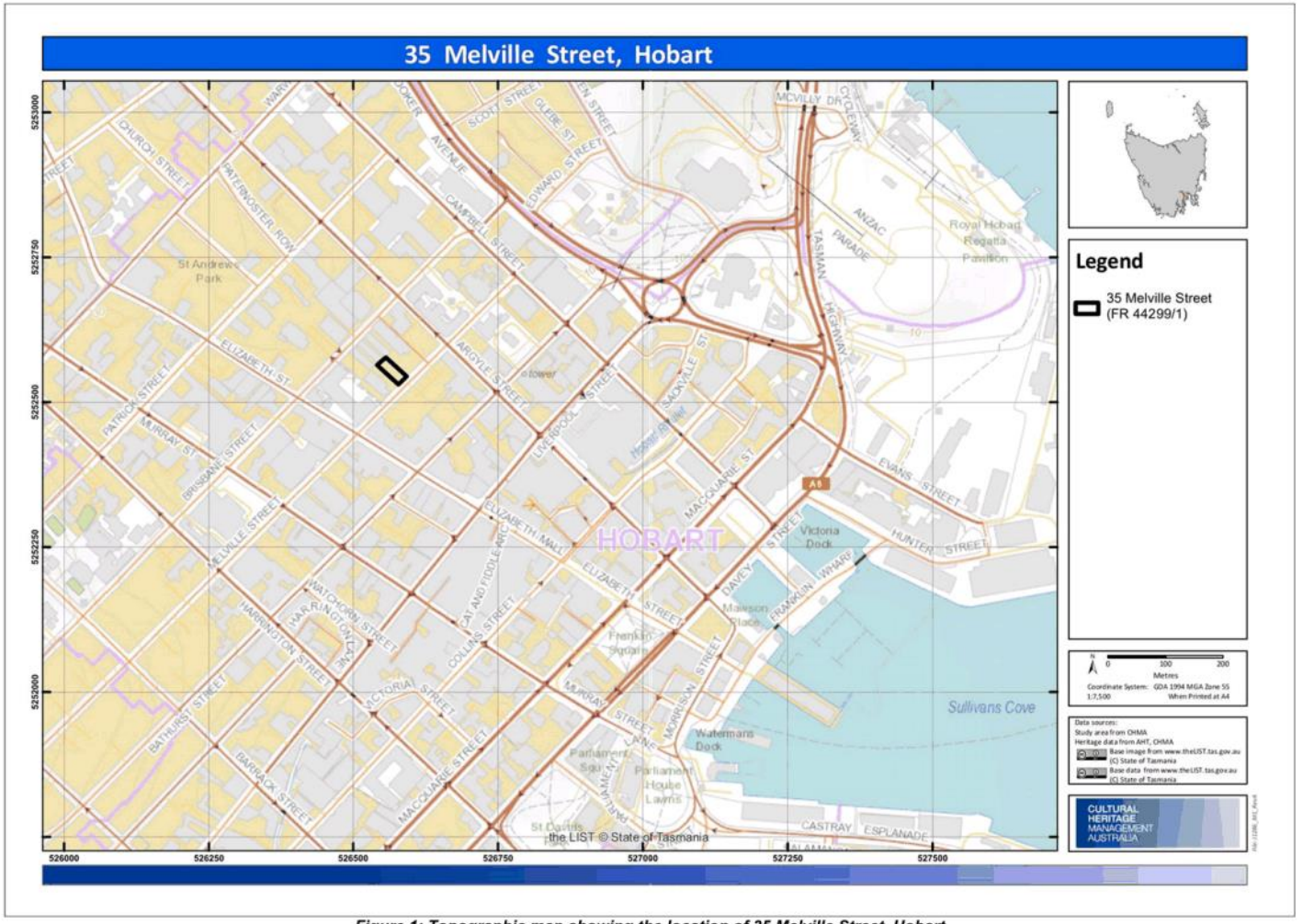

Figure 1: Topographic map showing the location of 35 Melville Street, Hobart

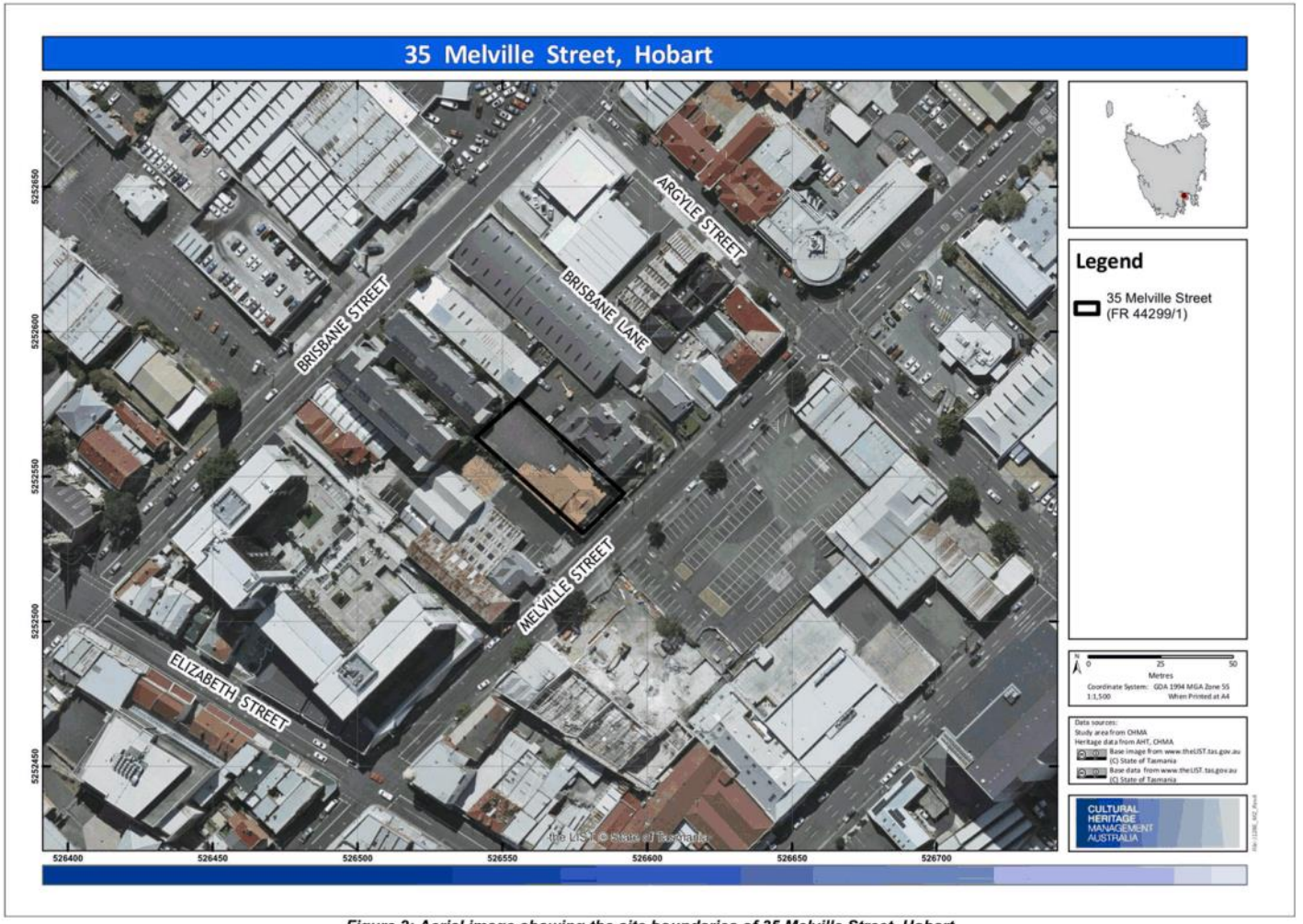

Figure 2: Aerial image showing the site boundaries of 35 Melville Street, Hobart

2.0 Statutory Controls and Legislative Requirements

The following provides a summary overview of the various legislative instruments and statutory requirements relating to historic heritage in Tasmania. The review is presented in order to provide the proponent with a basic understanding of the statutory frameworks and procedures relating to heritage in Tasmania.

It should be noted that development activities in Hobart is governed by two planning schemes: *The Hobart Interim Planning Scheme 2015* (HIPS) and *the Sullivans Cove Planning Scheme (SCPS)*. Both schemes are overseen by the Hobart City Council. The HIPS is the most relevant to this project and is summarised in section 2.4.

2.1 State Legislation

Land Use Planning and Approvals Act 1993
This Act (LUPAA) is the cornerstone of the State Resource Management and Planning System (RMPS). It establishes the legitimacy of local planning schemes and regulates land use planning and development across Tasmania. With regard to historic heritage, LUPAA requires that planning authorities will work to conserve those buildings, areas or other places which are of scientific, aesthetic, architectural or historical interest, or otherwise of special cultural value" [Schedule 1 Part 2(g)].

Resource Planning and Development Commission Act 1997
The Resource Planning and Development Commission (now referred to as the Tasmanian Planning Commission) is responsible for overseeing Tasmania's planning system, approving planning schemes and amendments to schemes and assessing Projects of State Significance. In terms of heritage management, the TPC will consider the establishment of heritage overlays, precincts or areas as part of the creation of planning schemes.

Resource Management and Planning Appeal Tribunal Act 1993
The Resource Management and Planning Appeal Tribunal determine planning appeals and enforce the Acts within the RMPS. The Tribunal plays an important role in the management of heritage places through its determinations on proposed development on, or near to, places of heritage significance.

Historic Cultural Heritage Act 1995
The Historic Cultural Heritage Act 1995 (HCH Act) is the key piece of Tasmanian legislation for the identification, assessment and management of historic cultural heritage places. The stated purpose of the HCH Act is to promote the identification, assessment, protection and conservation of places having historic cultural heritage significance and to establish the Tasmanian Heritage Council". The HCH Act also includes the requirements to:

- establish and maintain the Tasmanian Heritage Register (THR);
- provide for a system for a system of approvals for work on places on the Register;
- provide for Heritage Agreements and assistance to property owners;
- provide for protection of shipwrecks;
- provide for control mechanisms and penalties for breaches of the Act.

Under the HCH Act, "conservation" in relation to a place is defined as:

- the retention of the historic cultural heritage significance of the place; and
- any maintenance, preservation, restoration, reconstruction and adaption of the place.

The definition of "place" under the HCH Act includes:

- a site, precinct or parcel of land;
- any building or part of a building;
- any shipwreck;
- any item in or on, or historically or physically associated or connected with, a site precinct or parcel of land where the primary importance of the item derives in part from its association with that site, precinct or parcel of land; and
- any equipment, furniture, fittings, and articles in or on, or historically or physically associated or connected with any building or item.

The Act created the Tasmanian Heritage Council (THC), which came into existence in 1997 and operates within the State RMPS. The THC is a statutory body, separate from government, which is responsible for the administration of the HCH Act and the establishment of the Tasmanian Heritage Register (THR), which lists all places assessed as having heritage values of state significance. The THC also assesses works that may affect the heritage significance of places and provides advice to state and local government on heritage matters. The primary task of the THC is as a resource management and planning body, which is focused on heritage conservation issues. Any development on heritage-listed places requires the approval of the THC before works can commence.

Heritage Tasmania (HT), which is part of the Department of Primary Industry, Parks, Water and the Environment, also plays a key role in fulfilling statutory responsibilities under the HCH Act. HT has three core roles:

- co-ordinating historic heritage strategy and activity for the State Government;
- supporting the Tasmanian Heritage Council to implement the HCH Act; and
- facilitating the development of the historic heritage register.

Works to places included in the THR require approval, either through a Certificate of Exemption for works which will have no or negligible impact, or through a discretionary permit for those works which may impact on the significance of the place.

Discretionary permit applications are lodged with the relevant local planning authority. On receipt, the application is sent to the Heritage Council, which will firstly decide whether they have an interest in determining the application. If the Heritage Council has no interest in the matter, the local planning authority will determine the application.

If the Heritage Council has an interest in determining the application, a number of matters may be relevant to its decision. This includes the likely impact of the works on the significance of the place; any representations; and any regulations and works guidelines issued under the HCH Act. The Heritage Council may also consult with the planning authority when making a decision.

In making a decision, the Heritage Council will exercise one of three options: consent to the discretionary permit being granted; consent to the discretionary permit being granted subject to certain conditions; or advise the planning authority that the discretionary permit should be refused. The Heritage Council's decision is then forwarded to the planning authority, which will incorporate the decision into any planning permit

Works Guidelines for Historic Heritage Places 2015

The Tasmanian Heritage Council and Heritage Tasmania have issued Works Guidelines for Historic Heritage Places. The guidelines provide a general reference for the types of works which may be exempt, or those where a permit will be required. They also define appropriate outcomes for a range of different works and development scenarios. Although specifically designed for places included in the THR, the guidelines provide useful advice for the management of heritage places generally.

As noted in section 1 of this report, CHMA contacted Heritage Tasmania (HT) to advise them as to the scope of works for this project, and to seek advice regarding any specific heritage requirements for the assessment. The primary contact person at Heritage Tasmania was Russell Dobie (Regional Heritage Advisor). Russell Dobie has provided advice (via email dated 17-11-2020) that because the proposed works are not sited within the boundaries of any Heritage Listed places or properties, there are no requirements for Tasmanian Heritage Council (THC) approvals.

2.2 Local Planning Schemes

In accordance with the requirements of the *Land Use Planning and Approvals Act 1993* (LUPAA), Local Planning Schemes have been established throughout Tasmania in accordance with regional divisions of the state.

Development activities in Hobart is governed by two planning schemes: *the Hobart Interim Planning Scheme 2015* (HIPS 2015) and *the Sullivans Cove Planning Scheme 1997* (SCPS 1997). Both schemes are overseen by the Hobart City Council. The property at 35 Melville Street is situated within land that is governed by the HIPS 2015).

The Hobart Interim Planning Scheme 2015 (HIPS)

Notice of the declaration of the Hobart Interim Planning Scheme 2015 was published in the Tasmanian Government Gazette on 13 May 2015 and it came into operation on Wednesday 20 May 2015. The Minister for Planning has declared that the HIPS applies to all of the land in the City of Hobart except for that covered by *the Sullivans Cove Planning Scheme1997*.

Historic heritage within the City of Hobart is addressed by the Historic Heritage Code (HIPS clause E13). The Purpose of the Historic Heritage Code is:

> *To recognise and protect the historic cultural heritage significance of places, precincts, landscapes and areas of archaeological potential by regulating development that may impact on their values, features and characteristics (13.1.1).*

This code applies to development involving land defined in this code as any of the following:

(a) a Heritage Place;

(b) a Heritage Precinct;

(c) a Cultural Landscape Precinct;

(d) a Place of Archaeological Potential.

A Heritage Place

The stone wall along the east boundary of 35 Melville Street is heritage listed in Table E13.1 of the Historic Heritage Code. Information is provided on Data Collection Sheet F115. The HIPS 2015, Part C Special Provisions, Part 9.5 Change of Use of a Heritage Place stipulates:

9.5.1 An application for a use of a Heritage Place listed in the Historic Heritage Code or a place on the Tasmanian Heritage Register that would otherwise be prohibited is discretionary.

9.5.2 The planning authority may approve such an application if it would facilitate the restoration, conservation and future maintenance of the historic cultural heritage significance of the place.

9.5.3 In determining an application the planning authority must have regard to all of the following:

(a) a statement of significance, as defined in the Historic Heritage Code;

(b) a heritage impact statement and a conservation plan, as defined in the Historic Heritage Code, written with regard to the proposed use;

(c) the degree to which the restoration, conservation and future maintenance of the historic cultural heritage significance dependent upon the commencement of the proposed use;

(d) the extent to which the proposal provides for the active use or re-use of any heritage fabric;

(e) the likely impact of the proposed use on the residential amenity of the area if within a residential area.

The objective of development in heritage places is stated in section E13.7.2
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
(b) designed to be subservient to the historic cultural heritage values of the place and responsive to its dominant characteristics.

The table below summarises the performance criteria and accepted solutions for addressing the stated objectives.

Table 1: Summary of performance Criteria and Acceptable Solutions for a Heritage Place

Acceptable Solutions:	Performance Criteria:
A1 No Acceptable Solution.	**P1** 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.
A2 No Acceptable Solution.	**P2** Development must be designed to be subservient and complementary to the place through characteristics including: (a) scale and bulk, materials, built form and fenestration; (b) setback from frontage; (c) siting with respect to buildings, structures and listed elements; (d) using less dominant materials and colours.
A3 No Acceptable Solution.	**P3** Materials, built form and fenestration must respond to the dominant heritage characteristics of the place, but any new fabric should be readily identifiable as such.
A4	**P4**

No Acceptable Solution.	Extensions to existing buildings must not detract from the historic cultural heritage significance of the place.
A5 New front fences and gates must accord with original design, based on photographic, archaeological or other historical evidence.	**P5** New front fences and gates must be sympathetic in design, (including height, form, scale and materials), to the style, period and characteristics of the building to which they belong.
A6 Areas of landscaping between a dwelling and the street must be retained.	**P6** The removal of areas of landscaping between a dwelling and the street must not result in the loss of elements of landscaping that contribute to the historic cultural significance of the place.

A Place of Archaeological Potential

Table E13.4 lists Central Hobart, the extent of which is shown in Figure 3 (Plan E13.4.1), as a Place of Archaeological Potential. The property at 35 Melville Street is situated within this Place of Archaeological Potential.

The Objective of the Development Standard as it relates to Places of Archaeological Potential is *'to ensure that building, works and demolition at a place of archaeological potential is planned and implemented in a manner that seeks to understand, retain, protect, preserve and otherwise appropriately manage significant archaeological evidence'* (HIPS clause E13.10.1). Acceptable solutions and performance criteria are shown in Table 2 below.

Places of Archaeological Potential are covered by the Historic Heritage Code (HIPS clause E13). The Purpose of the Historic Heritage Code is:

> *To recognise and protect the historic cultural heritage significance of places, precincts, landscapes and areas of archaeological potential by regulating development that may impact on their values, features and characteristics (13.1.1).*

Table 2: Summary of performance Criteria and Acceptable Solutions for a Place of Archaeological Potential

Acceptable Solutions:	**Performance Criteria:**
A1 Building and works do not involve excavation or ground disturbance.	P1 Buildings, works and demolition must not unnecessarily impact on archaeological resources at places of archaeological potential, having regard to: (a) the nature of the archaeological evidence, either known or predicted; (b) measures proposed to investigate the archaeological evidence to confirm predictive statements of potential;

	(c) strategies to avoid, minimise and/or control impacts arising from building, works and demolition; (d) where it is demonstrated there is no prudent and feasible alternative to impacts arising from building, works and demolition, measures proposed to realise both the research potential in the archaeological evidence and a meaningful public benefit from any archaeological investigation; (e) measures proposed to preserve significant archaeological evidence 'in situ'.

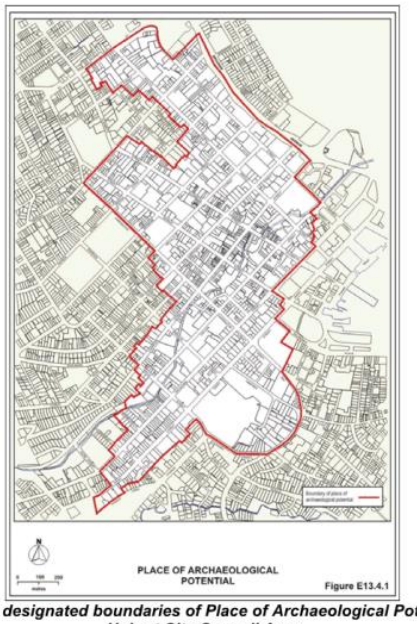

Figure 3: The designated boundaries of Place of Archaeological Potential in the Hobart City Council Area

3.0 A Brief Historic Overview for 35 Melville Street

3.1 Summary Overview

The following provides a brief historic overview for the Hobart CBD area, with specific focus of the early planning and development of the property at 35 Melville Street. The historic overview is aimed at providing a historic context for assessing the archaeological potential and heritage significance of the property. A broad range of archival records were accessed, including postal records, drainage plans, Town Grant Plans and deeds of Titles. However, it is acknowledged that there was limited information available for the occupation phase pre-dating the 1960s. Despite these limitations, it is was possible, through the available information, to ascertain the key phases of development and occupation of 35 Melville Street. Table 3 provides a summary overview of the key phases of occupation and development of the property, with section 3.1 providing a more detailed overview.

Table 3: Summary overview of the key phases of development and occupation of 35 Melville Street

Period	Description
Circa 1838	Original block owner William Beachcroft
Circa 1840	Two dwelling constructed on property
Circa 1890	Evidence of a least one of the original Old Colonial Cottage still on site
1905-1913	Mrs Eliza Kerr occupies property and establishes a private school. Possible modifications to original dwelling
1913-1925	Mr Henry Johns occupies property. Major demolition works and construction of new dwelling is undertaken during this period.
1965	Conversion to an office building (owner Mrs Jack). Notable changes: widening of the driveway (column removal), car parking for multiple vehicles, removal of the front gate, front entry and stair return changes from right to the left side of the building and single sex toilets.
1968-1969	Extension at the rear of the building by the owner Mr Jackson Wayne.
	Renovation of the building for office spaces by the Australian Hotels Association. Mostly internal renovations.
Post 1990	Addition of second storey extension at rear of building.

3,2 The Development of 35 Melville Street

The central roads in Hobart are generally formed in a grid pattern. The early planning maps for Hobart show that this grid pattern was laid out quite early in the development period of Hobart. As Robertson (1919) noted:

> *By 1811 Governor Macquarie had seen proof, in Sydney, of the need of a rectangular system of "town planning" for business purposes, and he came prepared to adopt that system in Hobart as far as possible… (1919:2).*

The current grid alignment of the major streets in the Hobart CBD, including Melville Street is much the same as that shown in the early planning maps. However, the notable exception is that the planning maps show that the original alignment of Elizabeth Street terminated at the junction of Macquarie Street. It was only later in the mid 1800s that Elizabeth Street was extended down to the Franklin Wharf.

The early roads were also wide which has allowed for the formation of the current road network. As Robertson (1919) explained:

> *'[a]n early Government Regulation compelled Hobart owners, in their building operations, to set back their erections to a greater distance from the kerb than now prevails in Hobart' (1919:3).*

A search of the archival records shows that the original owner of 35 Melville Street (then known as 39 Melville Street) was William Beachcroft, who was granted the land in the 1830s Figure 4 shows the Town Grant Chart for 1838, with William Beachcroft as the property owner. Figure 5 provides the original deeds of the land grant.

Figure 4: Town Grant Chart showing property of owner of the study area as William Beachcroft (The List Map: Overlay Town Grant Chart)

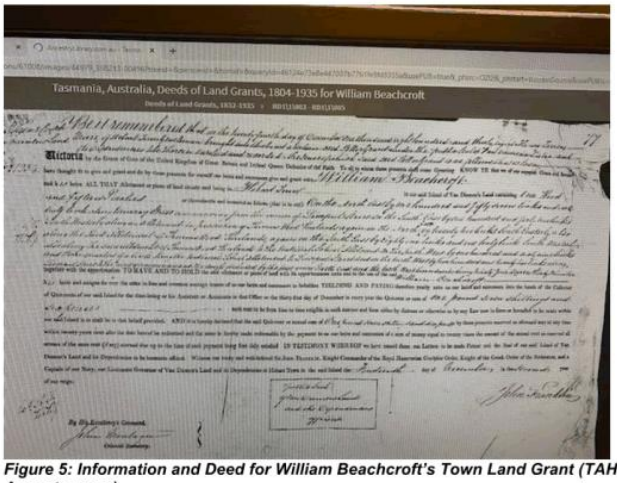

Figure 5: Information and Deed for William Beachcroft's Town Land Grant (TAHO: Ancestor.com)

It was the surveryor, James Sprent, who provided the first accurate and triangulated map of Hobart Town. Sprent created 76 pages of maps between 1841 and 1858 of Hobart Town. These maps are currently avaliable online at Tasmanian Government's site LISTMap (https://maps.thelist.tas.gov.au/listmap/app/list/map). Sprent's map for Melville Street shows two structures present on the 35 Melville Street property (see Figure 6). There are no details available describing the two dwellings, besides the outline of the size and shape on the plans. Thee is some evidence to indicate that at least one of these structures (the front structure) was most likely a cottage (see below), and it is possible that the second structure on the boundary was the same. This being the case, they were probably constructed from wood or brick (Godden Mackay Logan 2000:31).

The stone wall that currently runs along the frontage of 35 Melville Street probably dates to the early 1840s development of the block and the adjacent properties.

Figure 6: James Sprent's Map showing two dwelling on the study area prior to 1841-1858 (The List Map: Overlay Sprent's Book)

Precisely how long these original dwellings on 35 Melville Street survived is not clear. Photographs taken in the 1880s to 1890s of the adjacent Pressland House (33 Melville Street) shows glimpses of what appears to be the original cottage at the front of the block at 35 Melville Street (see Plates 1 and 2). Drainage plans dating from 1905 show the outline of what may be the original cottage at the front of the block. The dwelling on the side boundary appears to have been removed by this point (see Figure 7). This correlates with the period that Mrs Eliza Kerr occupied the site and operated the Farnham Private School (Period from 1905 to 1913).

Plate 1: Showing Pressland House and the front wall of 35 Melville Street (TAHO: photographic collection Anson Brothers c.1887)

Plate 2: The two chimney's, roof and window of 35 Melville Street are sited to left of Pressland House (UTAS Walker dated c.1881)

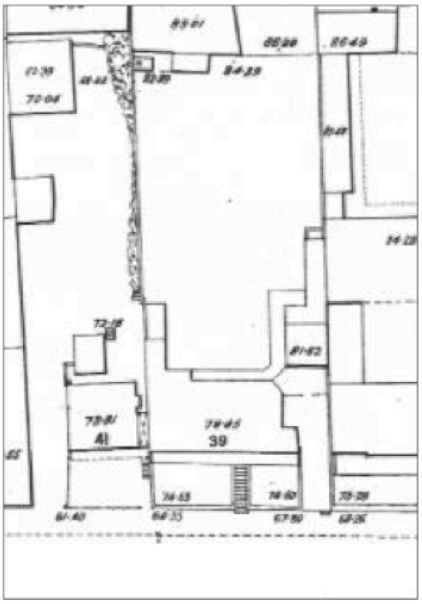

Figure 7: Excerpt from the Metropolitan Drainage Board's 1905 plan – study area is numbered 39 not 35 (TAHO: Detail Plan no 7)

From 1913 to around 1925, Mr Henry Johns, the co-proprietor of the Derwent Inn (former Jolly Hatter Inn in 1911) occupies 35 Melville Street. It is during this period that the substantial demolition and rebuilding works on the site appear to have occurred. The available evidence indicates that the original cottage at the front of the block was demolished during this period, and a new residence constructed.

In 1919 William Graham Robertson created a record of Hobart's streets. An excerpt from Robertson's Journal makes reference to a dwelling on 35 Melville Street having been demolished.
"Cottage just removed next Pressland House, was, in 'the forties', the residence of Mister Corrie, who went in the sixties to Queensland". (Robertson 1919:33)

At around this same time, the drainage plans for 35 Melville Street shows a substantially increased building footprint, with the driveway also apparently widened (see Figure 8). Unfortunately, no building plans prior to 1965 were archived for 35 Melville Street (in particular, nothing associated with the 1919 drainage plan).

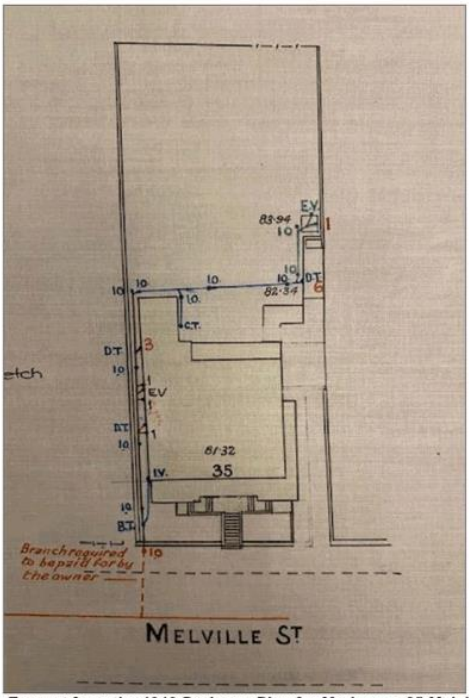

Figure 8: Excerpt from the 1919 Drainage Plan for Mr James, 35 Melville Street (Hobart City Council)

The dwelling built on the site in the late 1910s to early 1920s in part still survives today, albeit with substantial modifications and extensions. The present front façade of the dwelling provides the best surviving evidence of what this dwelling was. It appears to have been a single storey bungalow with front balcony, built in the style of what is best described as an inter-war Georgian Revival Federation Bungalow. The inter-war refers to the period between 1918 to1940, with the stylised and substantial front columns or pillars providing the Georgian Revival component (see Plate 3).

It is interesting to note that although the original 1840s cottage was demolished, the original stone wall along the frontage of the property was retained, and the access point through the wall to the front of the house as well as the side entrance remained largely unchanged (see Plate 3).

Plate 3: View of the frontage of the existing dwelling at 35 Melville Street, showing the inter-war Georgian Revival Federation Bungalow style and the stone wall frontage

The Hobart City Council has archived its building records (House Plans) from 1919 – 1990 at the Tasmanian Archive and Heritage Office (TAHO). There are three records for 35 Melville Street that were available, dated 1965 (record 20133), 1968-69 (record 80127) and 1980 (record 8645). These records show that substantial modifications and extensions occurred at the property during these periods.

In 1965 the owner, Mrs D. A. Jack, had architectural plans drawn up by I. D. L. Abbott which changed the building to a commercial space. These plans allowed for the widening off the driveway (and associated amendments to the house), car parking for multiple vehicles, removal of the front gate, creation of new front entry and changed stair return, and single sex toilets. A new retaining wall was planned for the driveway, from the front wall to the main building, and capping stones were marked for possible reuse on the plan (see Figures 9 and 10).

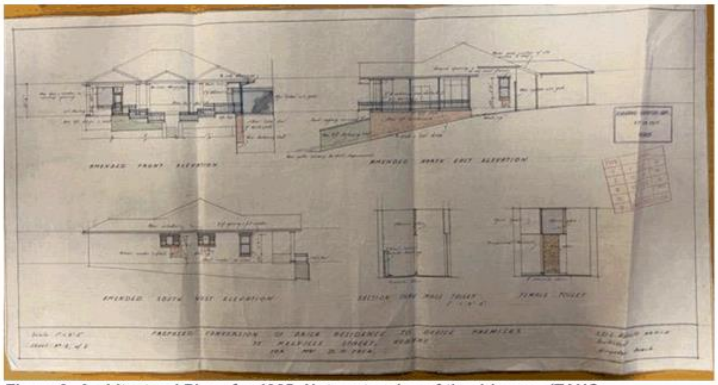

Figure 9: Architectural Plans for 1965: Note extension of the driveway (TAHO: building application record 20133)

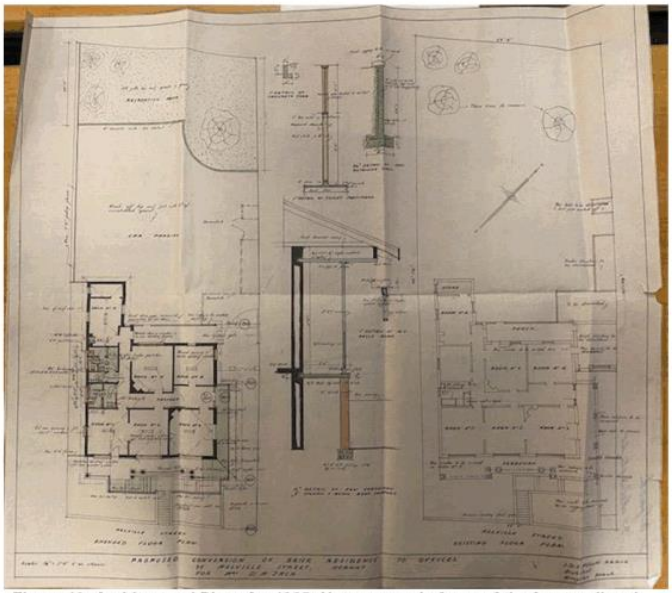

Figure 10: Architectural Plans for 1965: Note removal of part of the front wall and details of column removal (TAHO: building application record 20133)

In 1968 the then owner, Mr Jackson Wayne, had architectural plans drawn up by Johnston Crawford & de Bavay Architects to extend the rear of the building (see Figure 11). The proposed cost was $2,000 to $3,300 and the builder was D. Williams. Building approval was given in 1969. The building was being used by St Jonhs Hospital.

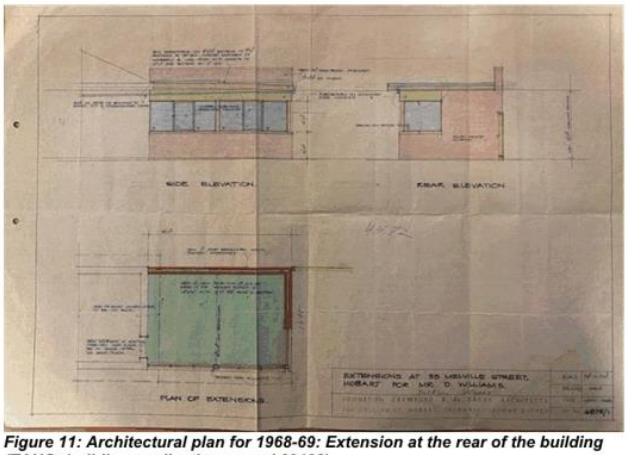

Figure 11: Architectural plan for 1968-69: Extension at the rear of the building (TAHO: building application record 69138)

Plate 4: The extension at the rear of the building built in 1969

In 1980 the building was owned by the Australian Hotels Association. During this period, renovations of the building was undertaken for office spaces. These renovations involved substantial modifications to the internal components of the building (see Figure 12). The builder who undertook the work was Brian Freeman Pty Ltd at an estimated cost of $38,000. The proposed use of the building was listed as 'offices'.

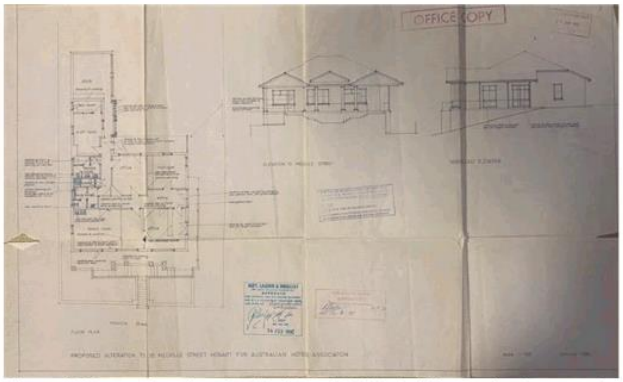

Figure 12: Renovation plans for the 1980s (TAHO: building application record 8645)

Post 1990 there appears to have been a second storey brick extension added to the rear of the building (see Plate 5). After 1990 all building plans belong to the Hobart City Council, and as such, the plans for this extension were not able to be accessed through the archives.

Plate 5: View of the south side of the building showing the post 1990 second storey extension

4.0 Statement of Significance

4.1 The Stone Wall Feature

The heritage significance of 35 Melville Street relates primarily to the Victorian Georgian stone wall that runs along the frontage of the property, on the northern side of Melville Street. The stone wall is listed in Table E13.1 of the Historic Heritage Code of the HIPS 2015. The data collection sheet for the listing (F115) refers solely to the wall, and does not mention any other buildings or features on the site. The wall is described as being

> *" located along the Melville Street frontage of this allotment and appears to date from the 1840s. The allotment, which the wall partially delineates, was formed and built upon by the 1840s. This 32 perch parcel of land was originally granted to William Benchcroft. Sprent's plan shows thick boundary walls running the length of the southern and eastern boundaries. This high boundary wall is constructed of coursed random rubble that has been roughly pecked. There is a front entrance at the centre of this section of walling which is defined by two high stone pillars constructed of light and dark coloured sandstone blocks".*

The wall is noted to contribute to the streetscape of the area, which is dominated by early and late nineteenth century buildings. According to the data collection sheet, the wall has been assessed as being of local significance on the basis of historic associations and research potential. The statements of significance provided on the data collection sheet is presented below.

(a)-Historical:
The wall at 35 Melville Street is of heritage significance because it has the ability to contribute to our understanding of the early settlement pattern of inner Hobart.

c)-Research Potential:
The wall at 35 Melville Street has the potential to yield important information of an archaeological nature that may contribute to a greater understanding of Hobart's history, as it is seemingly all that remains of an earlier structure built on the site by the 1840s

A copy of the data collection sheet is provided in Appendix 1 of this report.

The research undertaken as part of this current assessment, together with the on-site inspections, confirms the details presented in the data collection sheet. The section of the wall fronting 35 Melville Street is constructed of coarse, roughly pecked sandstone blocks and internally packed and filled with smaller rouble features. On top of the wall there is a row of rectangular sandstone capping blocks (see Plate 6). There is a front entrance in the centre of the wall which is delineated by columns made of sandstone (see plate 7). This appears to have been the original front entrance to the property, dating back to the 1840s. It should be noted that while the entrance is original, the stairs leading up to the front of the existing house is not original, but rather is a product of later

developments (see Plate 7). Additionally, the area between the existing building and the wall has been heavily modified, with fill material and concrete covering this area.

The wall itself is largely intact and is in reasonable condition. It is noted that the northern end of the wall, including the return running towards the house, was demolished in the 1960s as part of the widening of the driveway and was replaced by a concrete rendered section of wall. The original capping stones appear to have been placed on top of this replacement section of the wall (see Plate 8). These minor impacts to the wall do little to diminish the significance values of the feature. The assessment of the wall being of local significance for the reasons outlined in the data collection sheet is supported.

The register searches undertaken for the property shows that the wall feature is not currently listed on the Tasmanian Heritage Register (THR). The advice from Heritage Tasmania (HT) is that there are no current proposals to list the wall feature on the THR. As such, the wall has not been officially assessed as being of State significance. Based on the current evidence and information, it is assessed that the wall feature is unlikely to meet the threshold requirements for State significance.

Plate 6: View of the section of the heritage listed stone wall feature fronting 35 Melville Street

Plate 7: The original sandstone column entrance at the centre of the wall, with the later addition of the concrete stairs

Plate 8: The section of the wall demolished during the 1960s for the widening of the driveway and the concrete section of replacement

4.2 The Original Building 1840s Buildings

As noted in section 3 of this report and further discussed in section 5, the Sprent plans for Melville Street shows two structures present on the 35 Melville Street property (see Figure 6). The two dwellings, identified by Sprent, on the site would most likely have been cottages classified as being from 'The Old Colonial Period' from 1803 - c.1840.

These two structures have subsequently been demolished and the areas re-developed. It is assessed that there is a limited potential for any features (such as foundations) associated with these two dwellings to still survive (see section 5 for details). However, if it was to be subsequently confirmed that such features were still present, then, depending on the intact nature of these features and the inherit research potential, they may be of local and possible State significance. This is of course speculative at this point in time.

4.3 The Existing Building

The existing building on 35 Melville Street originally dates to the late 1910s to early 1920s. The present front façade of the dwelling provides the best surviving evidence of what this dwelling was. It appears to have been a single storey bungalow with front balcony, built in the style of what is best described as an inter-war Georgian Revival Federation Bungalow. The building has subsequently been extensively renovated (both externally and internally) and has a number of extensions (see section 3 of this report).

Because of the extensive modifications to the dwelling, the significance of the building is very limited. The front façade of the building, which still retains some of the original features may have a low level of local significance (based on the representation of this era and style of bungalow), however, is unlikely to meet the threshold requirements for inclusion on Table E13.1 of the Historic Heritage Code of the HIPS 2015. This is consistent with the current status of the data collection sheet listing for the property (F115) which refers solely to the wall and does not mention any other buildings or features on the site. It is noted that there are far better representative examples of this period and style of bungalow within the Hobart CBD area that have not been as extensively modified.

5.0 Statement of Archaeological Potential

As described previously, the Sprent plans for Melville Street, prepared circa 1840 to 1850, shows two structures present on the 35 Melville Street property. At least one of these structures was likely to have been a cottage dating from the Old Colonial Period' from 1803 - c.1840. The second structure on the boundary of the property is of a similar size (based on the Sprent Plan) and may have been a similar dwelling or could have served another purpose.

Both suspected 1840s structures that were once present on the site are known to have been destroyed, most likely in the early 1900s (pre-1920). The stone wall that runs along the frontage of 35 Melville Street is believed to have been constructed roughly at the same time as these structures and is the only known surviving feature on the site from this 1840s period. The two structures and the stone wall are the primary focus of the Statement of Archaeological Potential.

The Sprent Plans are known to be reasonably accurate. This means that if we overlay the Sprent Plan for Melville Street onto the site plan for the existing block, we can get a reasonable idea as to the location of these 1840s structures in relation to the existing development footprint. Figure 13 shows the original plan prepared by Sprent for Melville Street, with Figure 14 showing the overlay of this plan onto the existing development footprint on the site. Figure 15 shows the overlay of the two structures in relation to the soil disturbing excavation works that are proposed to take place as part of the new development application.

As can be seen from Figure 14, the overlay shows that the footprint for the front dwelling is situated directly within the footprint of the existing building on the property. This tallies with other evidence presented in section 3 of this report, which suggests that the original cottage was demolished around 1920, in order to build the new house. Realistically, there is very little potential for any sub-surface archaeological features such as foundation footings to have survived this redevelopment. If features are present, they are covered over by the foundations of the existing building, in an area where no earth disturbing works are proposed to be undertaken as part of the present development proposal and therefore are not under any threat of impact (see Figure 15).

The footprint for the second dwelling, abutting the boundary of the property appears to be situated where the existing driveway providing access to the rear of the property is located. Only the southern edge appears to be situated underneath the footprint of the existing building (see Figure 14 and Plate 9). The driveway is built on a layer of fill and bitumen material, with the depth of fill material unknown at this stage. However, there is a reasonable potential that some or all of the foundations associated with this original dwelling may have survived. This of course is dependent on how much original soil deposit was removed to create the driveway. Figure 15 shows the location of this

structure in relation to the site excavation works that are proposed to be undertaken as part of the current development application. The earth disturbing works at the rear of the building are confined to the west of the footprint of this structure. There is therefore a low potential for archaeological remains to be encountered. Nonetheless, there is some level of risk, and this would warrant the monitoring of initial earth disturbing works in this area in case archaeological features are present (see section 6 of this report for further details).

The area between the existing stone wall fronting Melville Street and the footprint of the original 1840s front cottage was likely to have been a small walled cottage garden, with a path leading from the main entrance through the wall to the front entrance of the cottage. This area has been heavily modified through the development of the 1920s building and subsequent extensions and modifications. Whilst the stone wall and original pillared entrance to the wall are still intact, the stairs leading to the existing building has been replaced with concrete stairs, and the area between the wall and the building has been filled with concrete and fill up to the height of the wall, which is approximately 2m (see Plates 10 and 11). Any features associated with the original 1840s cottage garden area, or other archaeological remains from this period are likely to be destroyed or covered over by concrete and fill. The archaeological potential of this area is assessed as being negligible.

The proposed development plans for this area shows that a new set of stairs will be constructed to provide access to the building. The new access will utilise the existing main access point through the stone wall and will then branch off to the north from the existing stairs. The construction of the new stairs will require the removal of some existing concrete and fill material in the area between the stone wall and the existing building. However, the wall itself will not be directly impacted. Figure 15 shows the proposed excavation area for the stairs, with Plate 11 showing the extent of existing concrete and fill in this area. Given that the excavations will be confined to within the fill material, there is little to no potential for archaeological remains to be encountered. Precautionary management procedures have been put in place to ensure the integrity of the stone wall structure is not compromised during construction (see section 6 of this report).

Figure 13: James Sprent's Map showing two dwelling on the study area prior to 1841-1858 (The List Map: Overlay Sprent's Book)

Figure 14: The two 1840s structures overlaid onto the existing development footprint at 35 Melville Street

Figure 15: The overlay of the two structures in relation to the soil excavation works that are proposed to take place as part of the new development application

Plate 9: The indicative location of the second 1840s structure on the site, under the existing driveway

Plate 10: The main entrance through the stone wall feature showing the original sandstone pillars on the wall entrance and the later addition of the concrete stairs

Plate 11: The area behind the wall where the new stair access is proposed to be constructed. Note the extent of concrete in this area, to the height of the wall.

6.0 Heritage Impact Statement and Management Recommendations

The Stone Wall Feature

The existing Stone Wall that runs along the frontage of Melville Street is believed to date to the 1840s and is listed in Table E13.1 of the Historic Heritage Code of the HIPS 2015. The wall is noted to contribute to the streetscape of the area, which is dominated by early and late nineteenth century buildings. According to the data collection sheet (F115), the wall has been assessed as being of local significance on the basis of historic associations and research potential.

The wall itself is largely intact and is in reasonable condition. It is noted that the northern end of the wall, including the return running towards the house, was demolished in the 1960s as part of the widening of the driveway and was replaced by a concrete rendered section of wall. The stone wall is the main feature of significance on the site and all necessary precautions should be taken to ensure that the integrity of the wall is not compromised by the development proposal.

As detailed in section 5 of this report, the proposed construction of the new stair access to the building will not directly impact on the stone wall. However, some fill material and concrete from behind the wall will need to be removed in order to construct the new stairs. In order to ensure that the stability and integrity of the wall is not compromised during these works, the following management procedures should be implemented.

- Excavation works should be confined to a minimum distance of 0.3m from the internal edge of the stone wall.
- The stone wall should be appropriately braced to ensure that it does not collapse both during or post construction. Engineering plans should be developed which details the design and installation of this bracing system. These should be submitted to the HCC as part of the building application.
- The northern end of the wall, including the return running towards the house, was demolished in the 1960s as part of the widening of the driveway and was replaced by a concrete rendered section of wall. If fill material is required to be removed from this area, then this newer section of wall could be partially removed for this purpose. At the completion of works, this part of the wall should be repaired in keeping with the existing wall structure and the original sandstone capping stones replaced on top of the wall.
- During the course of the excavation works behind the wall, the works should be periodically inspected by a heritage specialist to ensure that the integrity of the wall has not been compromised.

The Suspected 1840s Dwelling Features

The Sprent plans show two suspected 1840s dwellings were present on the site. These two structures are believed to have been demolished some time in the early 1900s and the areas re-developed.

As detailed in the Statement of Archaeological Potential (section 5), the front dwelling is situated directly within the footprint of the existing building on the property. It has been assessed that there is very little potential for any sub-surface archaeological features such as foundation footings to have survived this redevelopment. If features are present, they are covered over by the foundations of the existing building, in an area where no earth disturbing works are proposed to be undertaken as part of the present development proposal and therefore are not under any threat of impact. It is advised that there should be no further management requirements that apply for this area.

The footprint for the second dwelling, abutting the boundary of the property appears to be situated where the existing driveway providing access to the rear of the property is located. Only the southern edge appears to be situated underneath the footprint of the existing building. It has been assessed that there is a reasonable potential that some or all of the foundations associated with this original dwelling may have survived.

The earth disturbing works at the rear of the building are confined to the west of the footprint of this structure and it has been assessed that there is a low potential for archaeological remains to be encountered in this area. However, as a precautionary measure, the following management procedures should be implemented.

- A heritage specialist should be present on-site during the soil excavation works in this area in order to monitor for the presence of archaeological features or objects.
- The procedures outlined in Practice Note No 2 issued by the Tasmanian Heritage Council, processes will be followed should any unexpected archaeological features and/or deposits be revealed during works.

The Existing Building

The existing building on 35 Melville Street originally dates to the late 1910s to early 1920s. The present front façade of the dwelling provides the best surviving evidence of what this dwelling was. It appears to have been a single storey bungalow with front balcony, built in the style of what is best described as an inter-war Georgian Revival Federation Bungalow. The building has subsequently been extensively renovated (both externally and internally) and has a number of extensions (see section 3 of this report).

Because of the extensive modifications to the dwelling, the significance of the building is very limited. The front façade of the building, which still retains some of the original features may have a low level of local significance (based on the representation of this era and style of bungalow), however, is unlikely to meet the threshold requirements for inclusion on Table E13.1 of the Historic Heritage Code of the HIPS 2015.

The proposed development plans show that there are some proposed modifications to the front of the existing building. This includes an extension to a section of the existing roof line, landscaping and the painting of exterior walls. It is assessed that these proposed modifications in their current form will have a minimal impact on the heritage values of the front exterior of the house. The main distinguishing heritage features of the front of the house are the balcony and the columns, and these will remain largely unchanged. The proposed extension to the roof line is minor in scale and will not adversely alter the overall style and look of the roof. The proposed colour schemes for the exterior walls and roof are in keeping with existing colour schemes.

Besides the front face of the house, the remaining parts of the existing building retain little to no heritage values or significance, and it is assessed that the proposed works will not adversely impact on heritage values.

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Legislation

HIPS - The Hobart Interim Planning Scheme 2015
http://www.hobartcity.com.au/Development/Planning/Planning_Schemes/Hobart_Interim_Planning_Scheme_2015, sourced 21-11-2020

http://iplan.tas.gov.au/pages/plan/book.aspx?exhibit=hobips, sourced 21-11-2020

Places of Archaeological Potential in the Hobart City Council Area
http://iplan.tas.gov.au/pages/plan/book.aspx?exhibit=hobips, sourced 21-11-2020

Historic Cultural Heritage Act 1995

Historic Cultural Heritage Act 1995

Works Guidelines for Historic Heritage Places, Nov 2015

Appendix 1

Data Collection Sheet F115

Data Collection Sheet F115

Name: ***Stone Wall***

35 ***Melville Street*** ***Hobart*** ***Hobart***

Type:	*Other*	Feature Type:	
Use:	*Other*	Archit. Style:	*Victorian Georgian*
Walls:	*Sandstone*	Roof:	*n/a*
Floors:	*n/a*	Integrity:	*Externally predominantly intact. Small sections of the wall have been rendered.*

Attic: ☐ Basement: ☐ Nominated By: HCC

Visual Relationships: *This property is located on the northern side of Melville Street. The wall is located along the front (southern) boundary of 35 Melville Street. It contributes to the streetscape of the area, which is dominated by early and late nineteenth century buildings.*

Historical Relationship: *The stone wall located along the Melville Street frontage of this allotment appears to date from the 1840s. The allotment, which the wall partially delineates, was formed and built upon by the 1840s. This 32 perch parcel of land was originally granted to William Benchcroft. Sprent's plan shows thick boundary walls running the length of the southern and eastern boundaries.*

Description: *This high boundary wall is constructed of coursed random rubble that has been roughly pecked. There is a front entrance at the centre of this section of walling which is defined by two high stone pillars constructed of light and dark coloured sandstone blocks.*

STATEMENTS OF SIGNIFICANCE

(a)-Historical:

The wall at 35 Melville Street is of heritage significance because it has the ability to contribute to our understanding of the early settlement pattern of inner Hobart.

(b)-Rarity:

(c)-Research Potential:

The wall at 35 Melville Street has the potential to yield important information of an archaeological nature that may contribute to a greater understanding of Hobart's history, as it is seemingly all that remains of an earlier structure built on the site by the 1840s.

(d)-Representative of:

No Significance?:

(e)-Creative / Technical:

(f)-Community:

This wall makes a significant contribution to the streetscape of the area, and therefore is important to the community's sense of place. It contributes, in conjunction with its neighbours, to a relatively intact nineteenth century commercial streetscape.

(g)-Association:

Supported: ☐ Not Supported: ☐ Refer: ☐ Signed: 03/09/2010

Appendix 2

Copy of Response Letter from HCC

City of HOBART

Enquiries to: City Planning
Phone: (03) 6238 2715
Email: coh@hobartcity.com.au

3 November 2020

Robert Beadle (JSA Consulting Engineers)
Level 1, 119 Sandy Bay Road
SANDY BAY TAS 7005

mailto: mail@jsa.com.au

Dear Sir/Madam

35 MELVILLE STREET, HOBART - PARTIAL DEMOLITION, ALTERATIONS, EXTENSION, AND CHANGE OF USE TO HOTEL INDUSTRY
APPLICATION NO. PLN-20-723

I refer to the above planning permit application received on 21 October 2020.

Under section 54 of the *Land Use Planning and Approvals Act 1993*, you are required by the Council to provide the following additional information and submit it in electronic (PDF) format:

Planning

- Please provide a basic description of the intended use.
- Please provide the operating hours for the Hotel Industry Use and if it is intended to operate outside the hours of 7.00am to 12.00am the following will be required:

A 'Hotel Industry Impact Assessment' must be submitted addressing the following issues if relevant:

(a) A description of the proposed use, hours of operation and type and duration/frequency of music/entertainment;
(b) location of music performance areas or speakers, external doors and windows, any other noise sources, and waste storage areas;
(c) details of entry points, external areas for smokers and a waste management plan;
(d)
the nature and location of surrounding uses, and for non residential uses their hours of operation, and a written description of the site context;
(e)
details of the proposed management of noise in relation to noise sensitive areas within

audible range of the premises, including residential uses and accommodation and associated private open space;
(f) a summary of the consultation with immediate adjoining landowners/occupiers and proposed measures to address any concerns;
(g) the location of lighting within the boundaries of the site, security lighting outside the licensed premise and any overspill of lighting;
(h) impacts on traffic and parking;
(i) Crime Prevention Through Environmental Design (CPTED) Principles including:
(i) reducing opportunities for crime to occur;
(ii) providing safe, well designed buildings;
(iii) minimising the potential for vandalism and anti-social behaviour;
(iv) promoting safety on neighbouring public and private land.
(j) any other measures to be undertaken to ensure minimal amenity impacts from the licensed premises during and after opening hours.

- Provide details of any potential lighting around car parking areas and pathways as well as lighting around the public access from the carpark in accordance with Part D 23.4.4 Passive Surveillance of the Hobart Interim Scheme 2015. *Please note consideration should be given to putting a gate on the south-western laneway accessed via the car park in the interest of avoiding entrapment spaces.*

- Provide details of any signage proposed.

Heritage Code

To enable the Council to assess the application against the relevant provisions of the Historic Heritage Code of the *Hobart Interim Planning Scheme 2015* please provide:

HER Fi 1	Prepare and submit a Statement of Archaeological Potential as defined in Table E13.3.1 of the Historic Heritage Code.
HER Fi 2	Prepare and submit a Heritage Impact Statement as defined in Table E13.3.1 of the Historic Heritage Code.
HER Fi 3	Submit photographs showing all areas of proposed demolition.
HER Fi 4	Provide sections NW/SE and NE/SW through the front yard/entry area of the subject property showing all demolition and proposed changes in levels.
HER Fi 5	Provide dimensioned drawings showing all details of the proposed deck and balustrade to the front/Melville Street elevation.

The applicant is advised that this property is located within a Place of Archaeological Potential and is also heritage listed in Table E13.1 of the Historic Heritage Code. Any demolition both internal and external, as well as new work must satisfy the relevant provisions of the Scheme.

Parking and Access

To enable the Council to assess the application against the relevant provisions of the Parking and Access Code of *Hobart Interim Planning Scheme 2015* please provide:

PA 5 A break down of the following areas of the proposal so the car parking requirement can be determined for the development:

PA 6 *1 for each 3m2 of public bar room floor area and 1 space for each 6m2 of beer garden area and 1 space for each 8m2 of lounge or dining room floor area and 1 space for each 10m2 of gaming room floor area and 1 space for each 30m2 of bottleshop floor area and 1 space for each 2 bedrooms and 1 space for each accommodation unit, as applicable.*

Details of any proposed bicycle parking spaces noting the following requirements under the Parking and Access Code:

Employee/resident bicycle parking requirement

1 for each 25 m2 bar floor area plus 1 for each 100m2 lounge/beer garden area.

Visitor/customer/student bicycle parking requirement

1 for each 25 m2 bar floor area plus 1 for each 100 m2 lounge, beer garden area

Refer to the Table E6.2 Number and Class of Bicycle Parking Spaces Required for the the required class of parking.

PA 7 A traffic impact assessment prepared by a suitably qualified traffic engineer that identifies the deficiency in the number of on site car parking spaces that is required by the acceptable solution of clause E6.6.1 of the Parking and Access Code of the Hobart Interim Planning Scheme 2015 and specifically addresses whether or not the number of onsite car parking spaces proposed will be able to meet the reasonable needs of users, having regard to all of the following:

(a) car parking demand;
(b) the availability of onstreet 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; and

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

(f) will not adversely impact the road network and onstreet parking.

Potentially Contaminated Land Code

To enable the Council to assess the application against the relevant provisions of the Potentially Contaminated Land Code of the *Hobart Interim Planning Scheme 2015* please provide:

PCL1 Confirmation that no more than 1m² of land (to any depth) is being disturbed. If more than 1m² of land is being disturbed, please provide the information required under PCL2 below.

Advice: The information is being requested because the neighbouring properties (37-47 Melville Street and 40-42 Brisbane Street) are listed as being potentially contaminated. If you have any questions about PCL1 or PCL2 please contact Council's Environmental Health Officer Yvette Wierenga on 6238 2969.

PCL2 ENVIRONMENTAL SITE ASSESSMENT

A contamination Environmental Site Assessment report prepared by a suitably qualified and experienced person in accordance with the procedures and practices detailed in the National Environment Protection (Assessment of Site Contamination) Measure 1999 (NEPM) as amended 2013 must be provided. The report must conclude:

- Whether any site contamination presents a risk to the health of users of the development in consideration of the proposed use.
- Whether any site contamination presents an environmental risk.
- Whether any specific remediation and/or protection measures are required to be implemented before the proposed use commences.

REMEDIATION AND PROTECTION MEASURES

If the Environmental Site Assessment report concludes that remediation and/or protection measures are necessary to avoid risks to human health or the environment, a proposed remediation and/or management plan must be submitted. Any remediation or management plan involving soil disturbance must include a detailed soil and water management plan to prevent off-site transfer of potentially-contaminated soil or stormwater.

STATEMENT OF SUITABILITY

A statement based on the results of the Environmental Site Assessment that the

proposed use of the land will not adversely impact on human health or the environment is to be provided (subject to implementation of any identified remediation and/or protection measures as required).

Please submit your additional information through the City of Hobart online services development portal. Additional information submitted in any other way will not be accepted.

Please note that if the additional information is lodged by 5:15pm on a day that the Council is open for business, the information will be accepted on that day. In any other case, the information will be accepted on the next day the Council is open for business.

Under the Act, the Council has 42 days to determine your application (excluding the period from the date of this request until the information is received to the Council's satisfaction).

You may appeal to the Resource Management and Planning Appeal Tribunal against this request within 14 days from the day on which this notice was served on you.

Please also note that the additional information must be received to the Council's satisfaction, within two years of the request being made, otherwise the application will lapse in accordance with section 54(2AA) of the *Land Use Planning and Approvals Act 1993*.

Please telephone Tristan Widdowson on 6238 2743 if you have any queries regarding this letter.

Yours faithfully

(Ben Ikin)
SENIOR STATUTORY PLANNER
CITY PLANNING

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

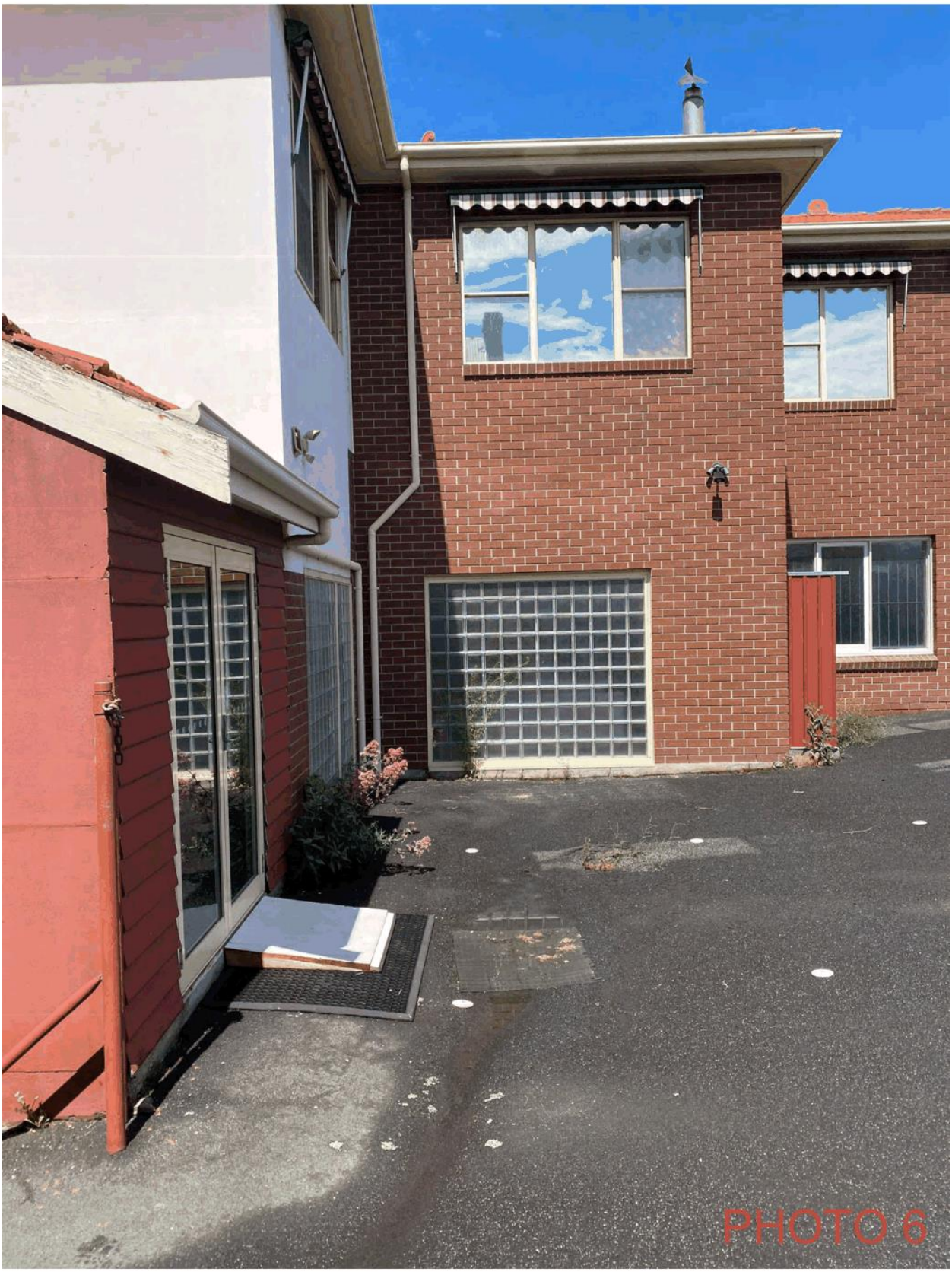

PHOTO 1


PHOTO 2


PHOTO 3


PHOTO 4


PHOTO 5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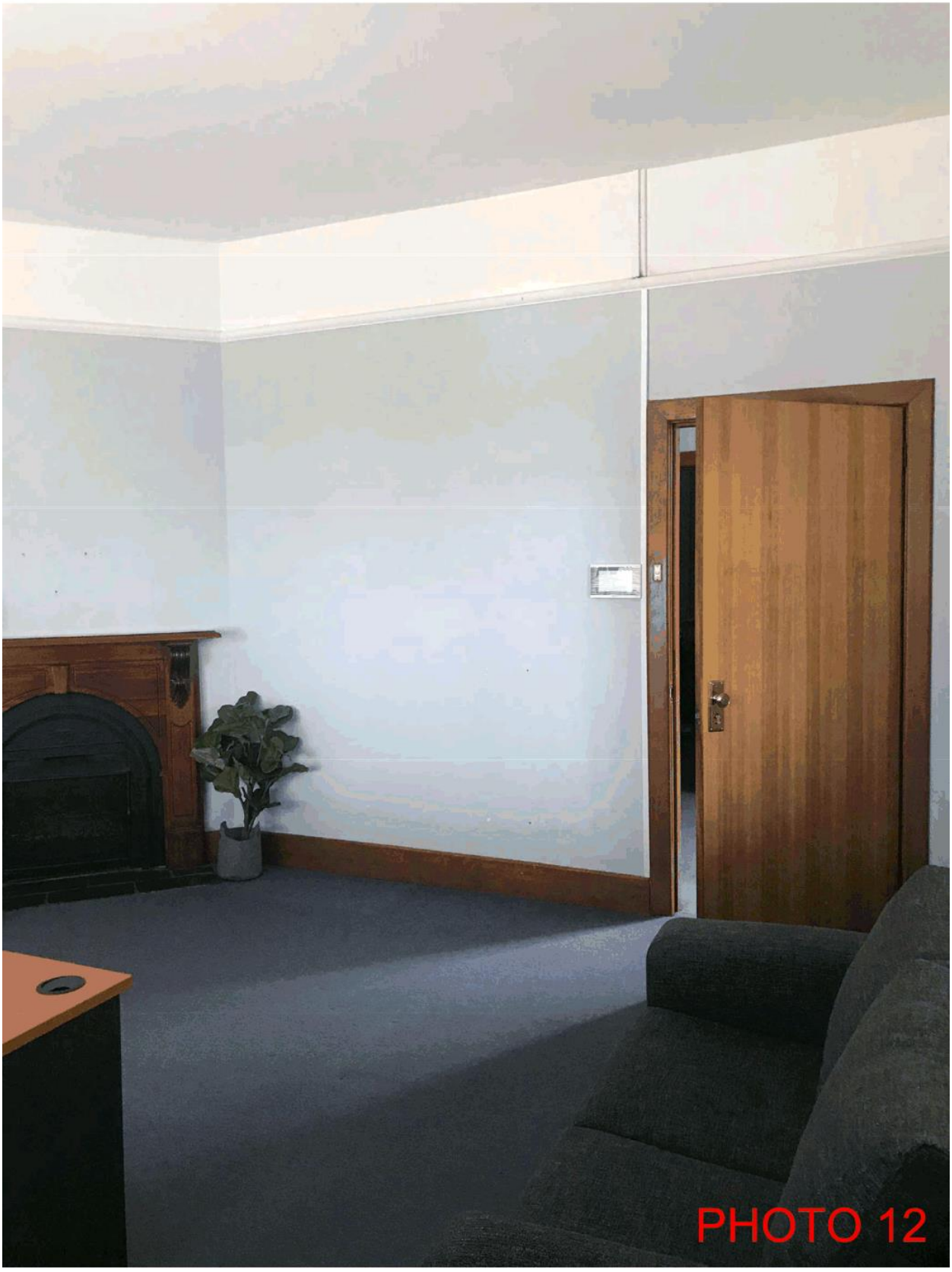
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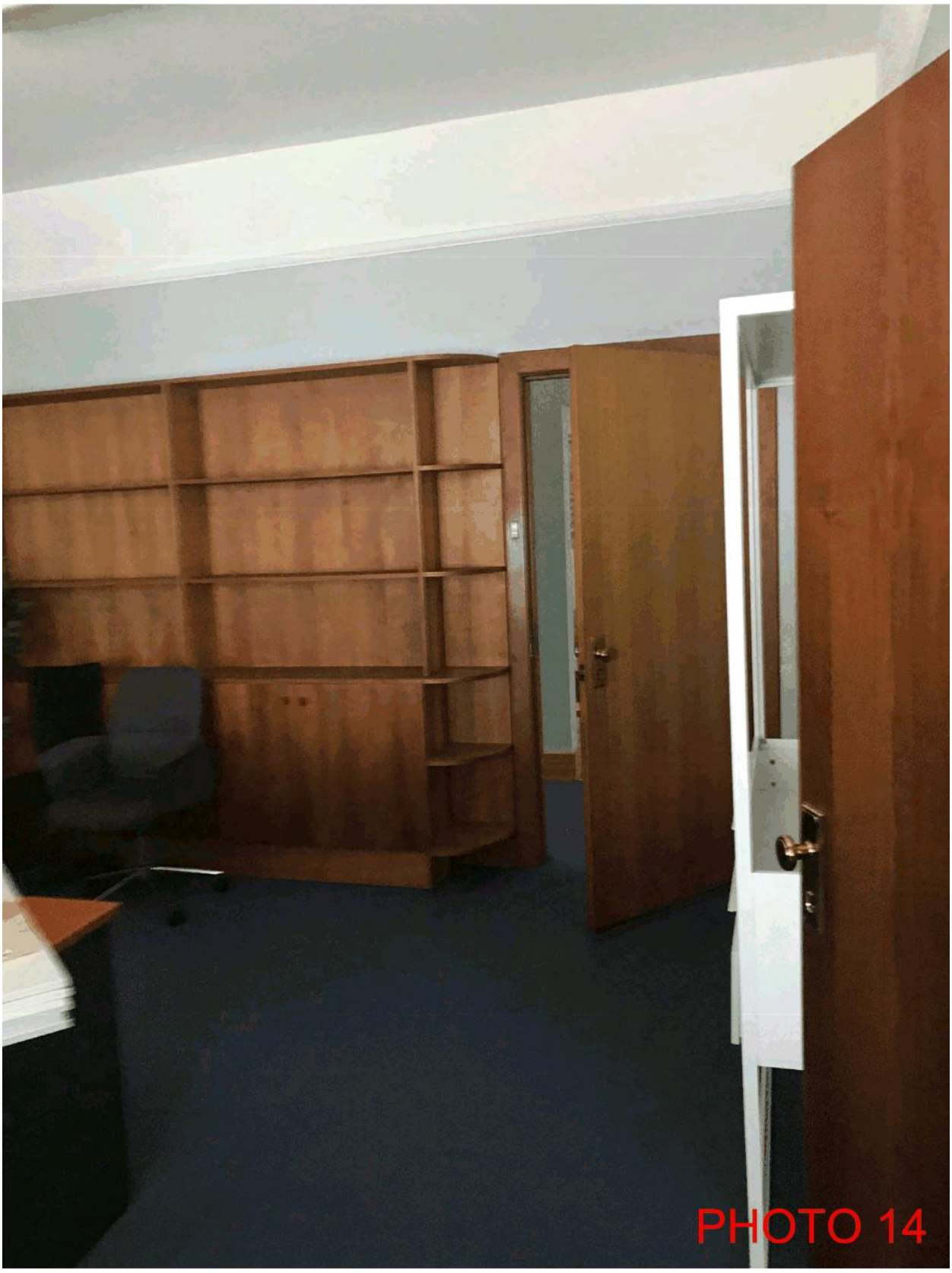
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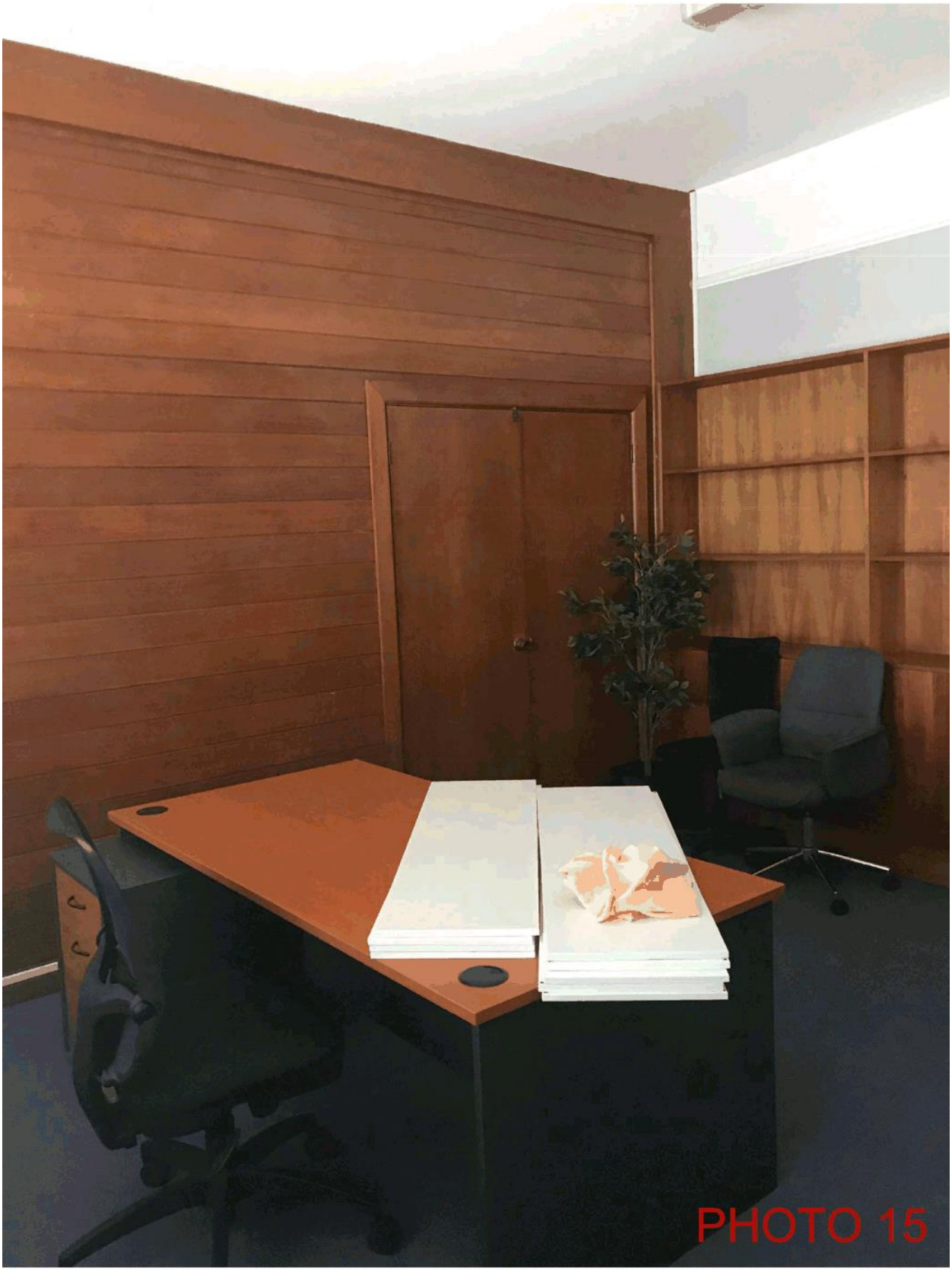
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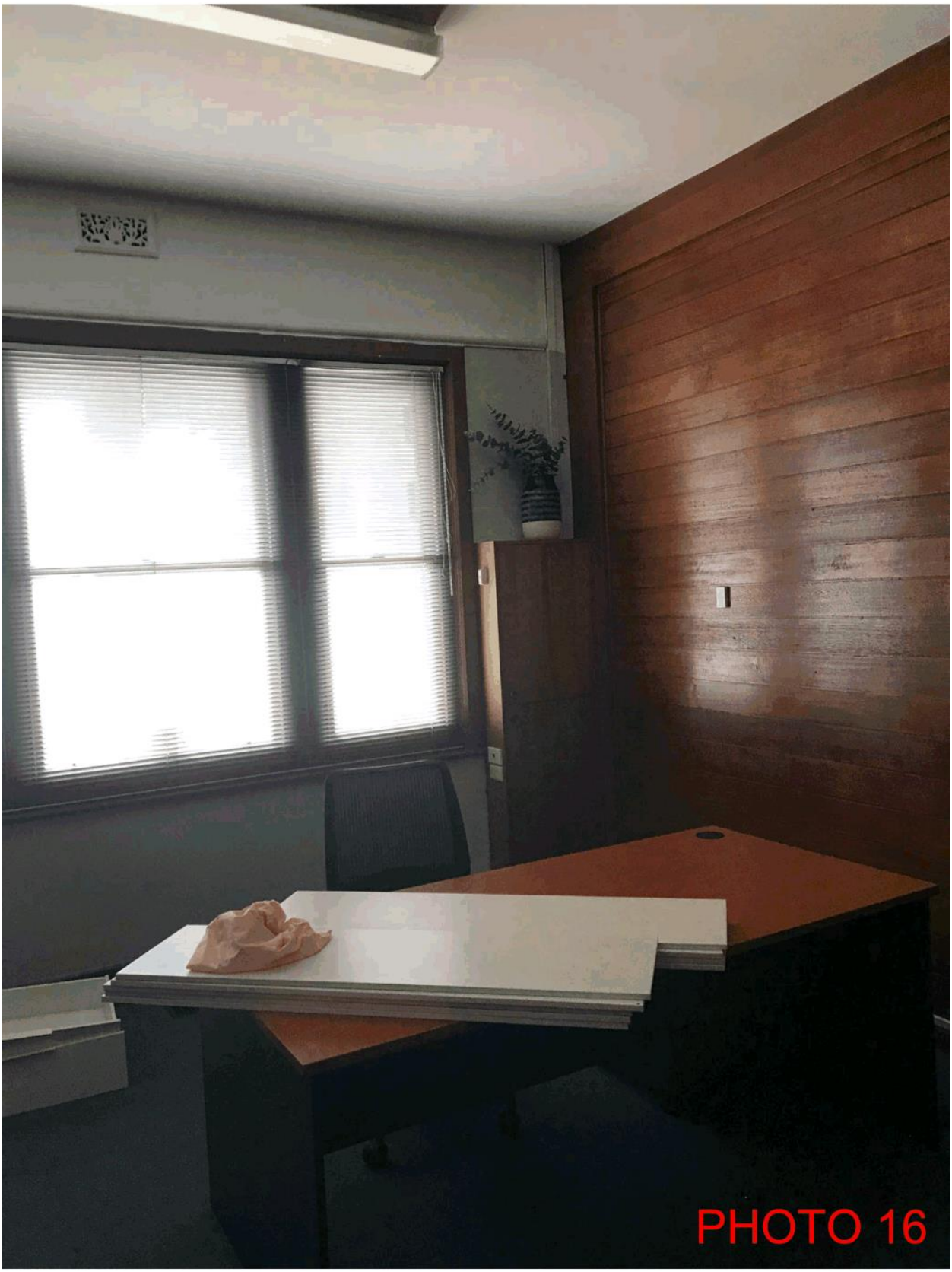
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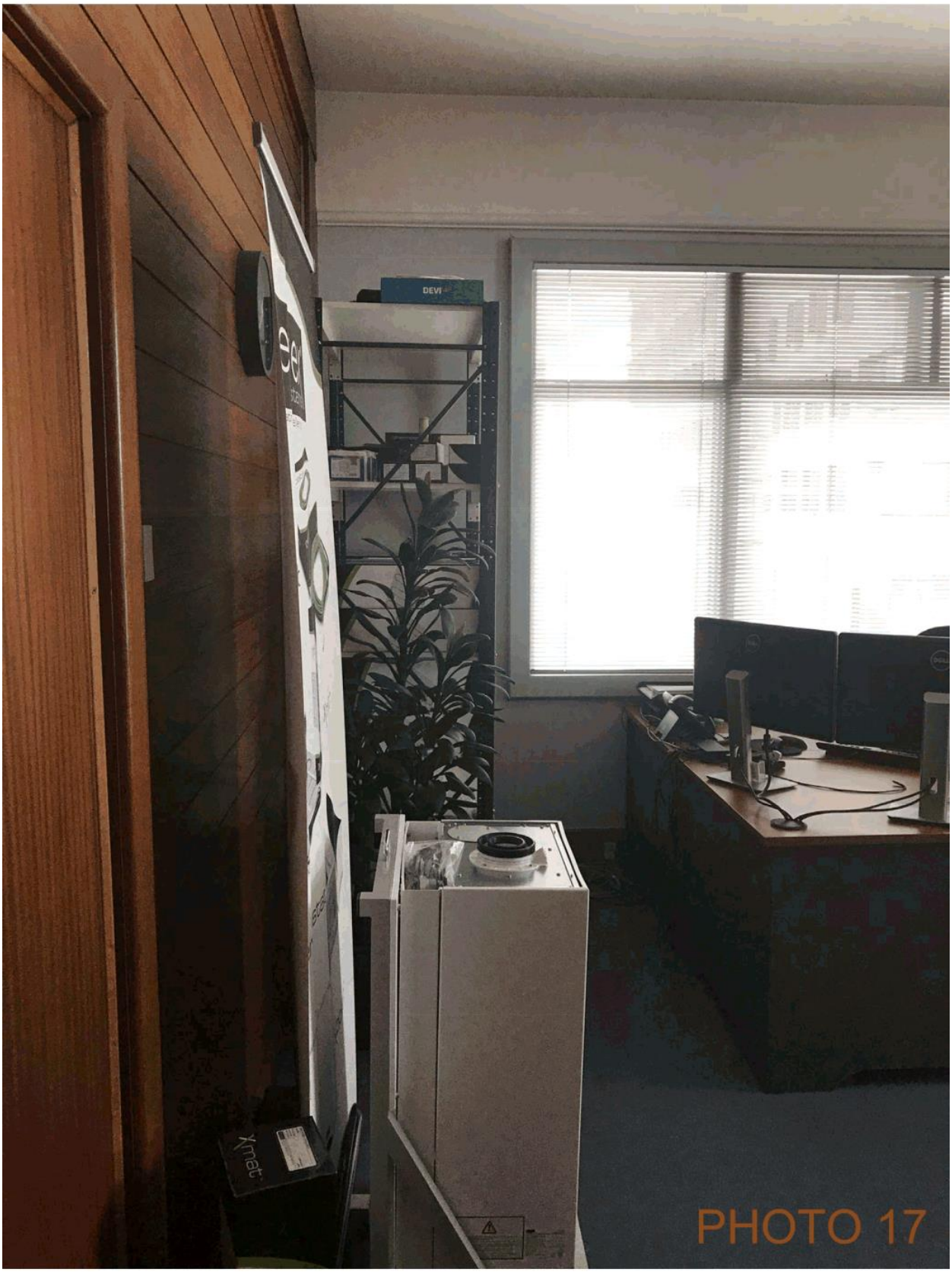
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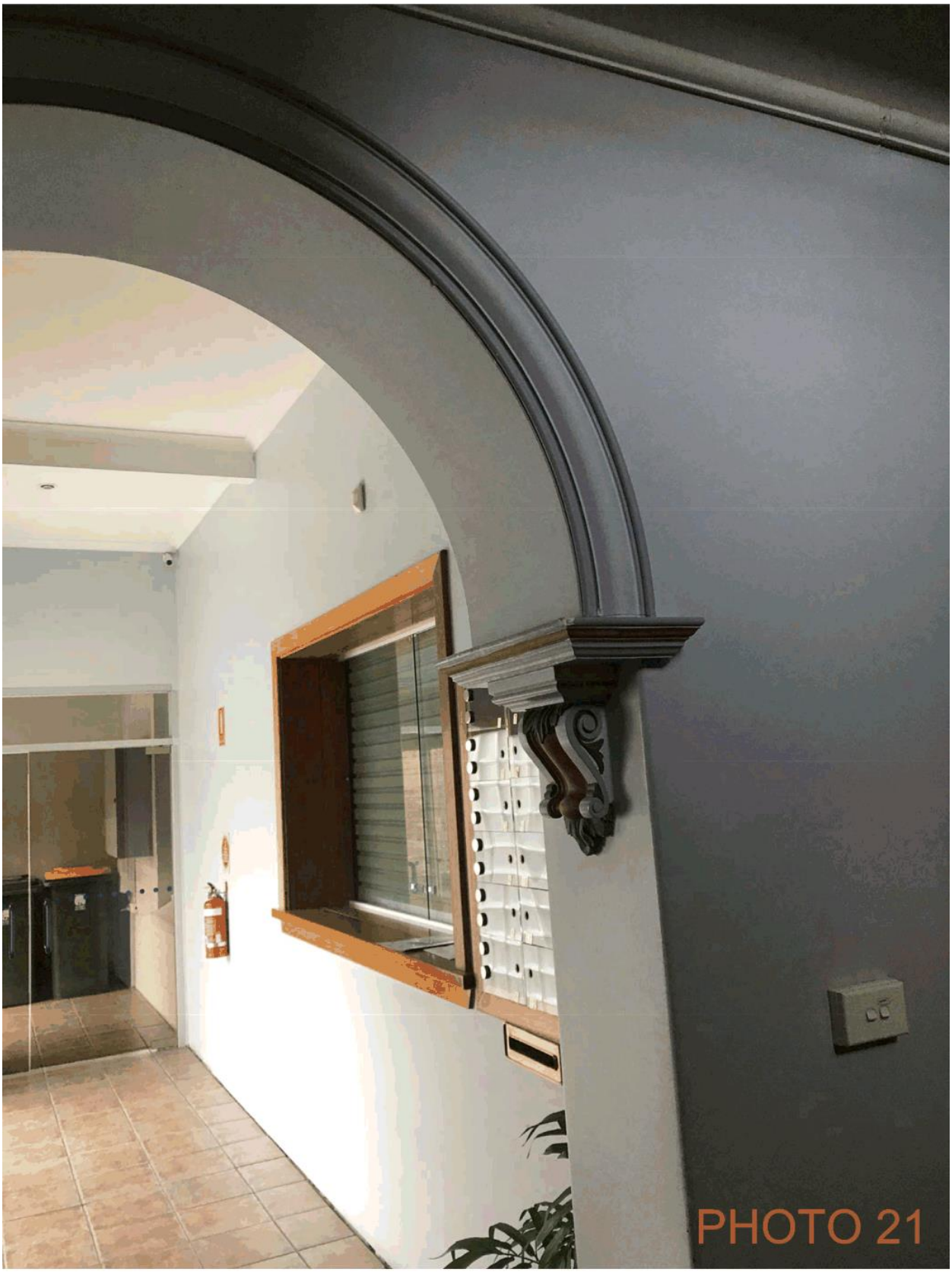
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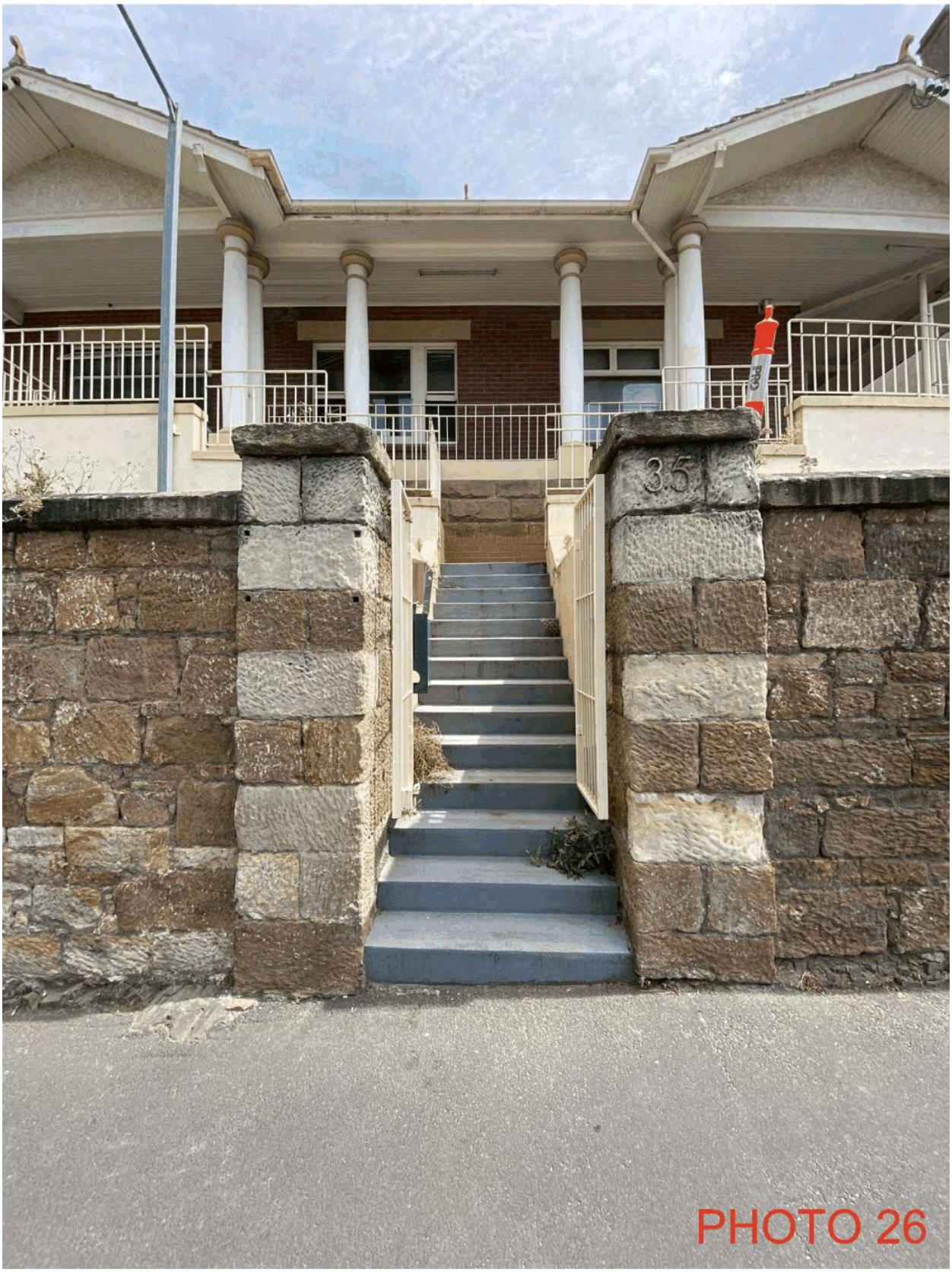
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PHOTO 27


NO PARKING
ON SITE
TENANTS ONLY
PHOTO 28


PHOTO 29


PHOTO 30

RESULT OF SEARCH

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

SEARCH OF TORRENS TITLE

VOLUME	FOLIO
44299	1
EDITION	DATE OF ISSUE
10	16-Jul-2020

SEARCH DATE : 21-Oct-2020
SEARCH TIME : 07.54 AM

DESCRIPTION OF LAND

City of HOBART
Lot 1 on Diagram 44299
Derivation : Whole of 32 Perches Gtd. to W. Beachcroft
Prior CT 4666/11

SCHEDULE 1

M810363 TRANSFER to 35 MELVILLE STREET PTY LTD Registered 16-Jul-2020 at noon

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
M827542 MORTGAGE to Murdoch Clarke Mortgage Management Limited Registered 16-Jul-2020 at 12.01 PM

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

the LIST

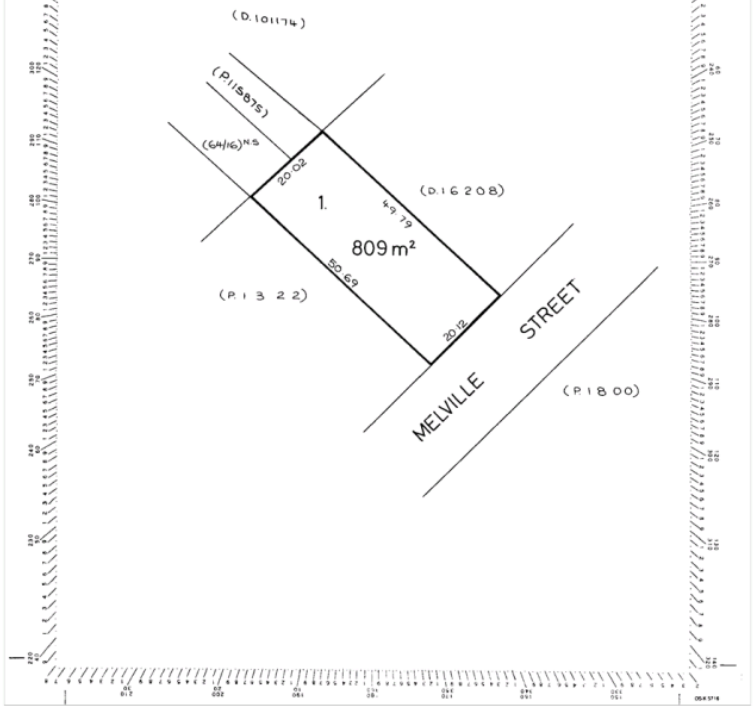
FOLIO PLAN

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

Owner: L . T . ACT 1980.	PLAN OF SURVEY of land situated in the CITY OF HOBART (SEC. PP)	Registered Number: D.44299
Title Reference: V.11835	COMPILED FROM 7/46 HOB LO	Approved
Grantee: WHOLE OF 0-0-32 GTD. TO WILLIAM BEACHCROFT.	SCALE 1: 600 MEASUREMENTS IN METRES	Recorder of Titles



Search Date: 21 Oct 2020 Search Time: 07:54 AM Volume Number: 44299 Revision Number: 01 Page 1 of 1

Department of Primary Industries, Parks, Water and Environment www.thelist.tas.gov.au

Planning: #232708

Property

35 MELVILLE STREET HOBART TAS 7000

People

Applicant
*

Derek Rolls
115 Allambie Road
ORIELTON TAS 7172
0428 521 523
derek@drchobart.com.au

Owner
*
35 Melville Street Pty Ltd

Unit 1
37 Ascot Drive
HUNTINGFIELD TAS 7055
0409 042 434
sam@sjmpd.com.au

Entered By
ROBERT BEADLE
119 SANDY BAY ROAD
SANDY BAY TAS 7005
03 6224 5625
robert@jsa.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)?
*

Office

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

Partial Demolition, Alterations, Extension, Signage & Change of Use to Hotel Industry

Estimated cost of development
*

100000.00

Existing floor area (m2)	Proposed floor area (m2)	Site area (m2)
489.43	728.76	809

Carparking on Site

N/A

Total parking spaces	Existing parking spaces	Other (no selection chosen)
0	17	

Other Details

Does the application include signage?
*

Yes

** Please be advised that you are required to lodge plans of the sign. The plans should show: dimensions, location, colours, wording, method of illumination, does it flash, method of fixing to wall, etc.*

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

1

Tasmania Heritage Register

Is this property on the Tasmanian Heritage Register?

- No

Documents

Required Documents

Title (Folio text and Plan and Schedule of Easements)
*
20E99-67 - Title.pdf

Plans (proposed, existing)
*
20E99-67 - Architectural Sheet Set (New DA) - Rev B.pdf

Supporting Documents

Photos or Montages
35 Melville Street - Site Photos.pdf

Traffic Impact Assessment
Traffic Impact Statement for 35 Melville Street revised garden bar area.pdf

Archaeological Report
35 Melville Street Statement Archaeological Potential and HIS 17122020.pdf

Landscape Plan
35 MELVILLE ST - Mitre 10 Landscaping Design.pdf

environmental site assessment

35 Melville Street ESA Dec 2020.pdf
Plans (Lift Manufacturer)
35 Melville Street - Lift Plans.pdf

Application Referral Cultural Heritage - Response

From:	Sarah Waight
Recommendation:	
Date Completed:	
Address:	35 MELVILLE STREET, HOBART
Proposal:	Alterations to Previously Approved Development
Application No:	PLN-21-351
Assessment Officer:	Tristan Widdowson,

Referral Officer comments:

Introduction:
This place is heritage listed in Table E13.1 of the Historic Heritage Code and is listed in the General Description column as 'stone wall'. It is also located in a Place of Archaeological Potential.

Proposal:
The proposal is for alterations to a previously approved development (PLN-20-723). This application primarily differs because the proposed platform lift behind the front wall has been changed to a enclosed lift shaft. This application has also been modified to take on board conditions on the previous planning permit. Other works include demolition and new works. The change of use has already been approved. The demolition and works include changes to the entrance and front access/balcony to the property, internal and external demolition, a new beer garden, parking to the rear and landscaping. A small sign opposite the front gate is also proposed.

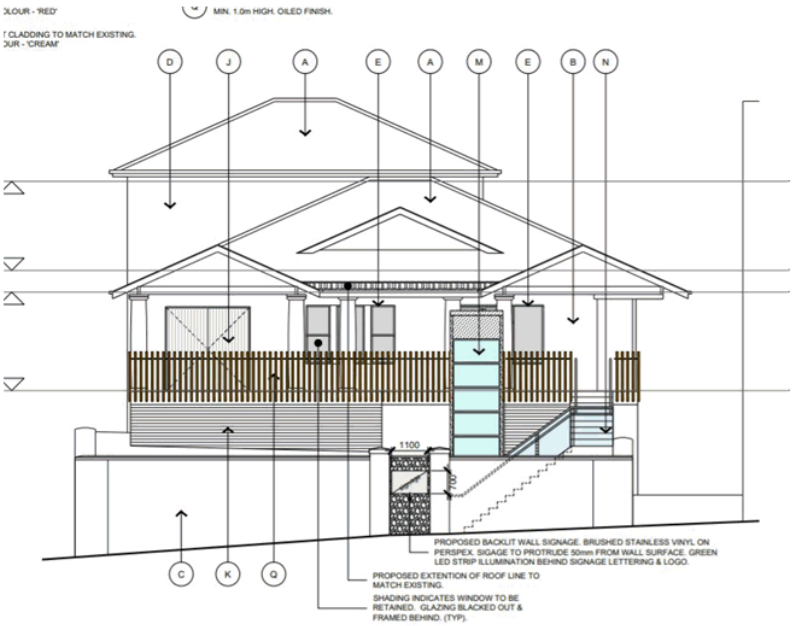
The application is supported by a Statement of Archaeological Potential and Heritage Impact Statement by Cultural Heritage Management Australia, dated 17 Dec 2020.

Representations:
Four (4) representations were received. No heritage related comments were received.

Heritage provisions:
This work must be assessed under the Historic Heritage Code of the Scheme under clause E13.7.1 P1, E13.7.2 P1, P2, P3, E13.10.1 and the Signs Code E17.7.2 P1 and satisfy all sub clauses (a) to (i).

This proposal involves less demolition to the front facade of the building with two of the three existing front windows to remain as is. On the south west elevation existing windows are to be retained. This however, is not considered critical in the assessment under the demolition as the windows are not of high heritage value, but are appropriate for the current circumstances. Additional demolition is proposed to the rear, but this is not part of the site that has heritage significance. On balance, with less demolition to the elevations, the proposal is considered to satisfy E13.7.1 P1.

The proposed new work is for a lift to the front elevation shown as "M" below.



Proposed elevation showing new lift. Source: Applicant's documentation.

A platform lift has already been approved in the location of the proposed lift under planning application PLN-20-723. Further design development by the applicant revealed that the platform lift would not fulfil the required function to provide access for people with mobility issues over a 4.0 metre change in level . The applicant engaged an access consultant (see report by Equality Building, dated 16 June 2021) to explore and clarify the relationship between building law and heritage matters. The conclusion arrived at was:

"From my perspective there are two issues to consider. The first is whether or not providing access will 'detrimentally affect heritage features of the building that are essential to the heritage significance of the building'.
The second is whether the visual impact of the lift would 'substantially detract from the heritage significance of the building'.
My opinion is that in this case:
• assuming the excavation needed for the lift installation is undertaken safely and effectively, there will be no impact on the heritage-related fabric of the wall;
• any aesthetic impact of the lift installation on the streetscape and wall itself can be minimised by careful selection of materials to be used and is secondary to the legal obligation to provide non-discriminatory access to the building." (Michael Small, Equality Building)

The provisions relating to the new lift from the Historic Heritage Code are as follows:

E13.7.2 P1 states:
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.

E13.7.2 P2 states:
Development must be designed to be subservient and complementary to the place through characteristics including:
(a) scale and bulk, materials, built form and fenestration;
(b) setback from frontage;
(c) siting with respect to buildings, structures and listed elements;
(d) using less dominant materials and colours.

E13.7.2 P3 states:
Materials, built form and fenestration must respond to the dominant heritage characteristics of the place, but any new fabric should be readily identifiable as such.

Any assessment under the above provisions of the Historic Heritage Code is only an assessment as to whether or not the proposal satisfies those relevant provisions or not and, as such, does not require reference to obligations under the National Construction Code or the Premises Standards Guidelines where there is a change of building use and classification. Clearly, the next step is for a development proposal to meet the relevant building standards in order for a building surveyor to be satisfies a Building Permit can be issued. This is a separate step and clearly one where issues relating to discrimination arise from whether or not access can be provided. This is further outlined in the report by Equality Building. However, to propose a development without full consideration of access would be flawed.

In undertaking an assessment of the proposal against the above provisions, it should be noted that this is a highly unusual example. The recommended process is for much of this work be done prior to the development proposal, by asking questions at an early stage, probably even prior to purchase, regarding what would be the necessary access requirements. For example, the Heritage Council of Victoria have a technical leaflet that outline a process for improving access to a heritage place resolving access issues early on to meet legislative requirements while retaining significance. It recommends that the access option that maximises access but has the minimum impact on heritage significance should be generally selected. This application is for a solution arrived at after all alternatives with less physical and visual impact have been explored. In this respect, the lift solution, not the preferred option for the building owner, is the only solution available as a result of the change of building use and classification.

In fact, it can be summarised as a solution that maximises access as well as having a maximum impact on the heritage significance of the listed place.

Thus, when this proposal is considered against the above Code provisions, the only conclusion that can be drawn is that the lift, in the location between the front building line and the front boundary wall, will be incompatible in height and materials and is not subservient or complementary. The result is detriment to the heritage listed feature under the Historic Heritage Code of the Scheme.

The proposal does not satisfy E13.7.2 P1 (a) or E13.7.2 P2 (a), (b), (c) and (d).

The proposal, in respect of clauses E13.7.1 P1 has already through the previous application been assessed as satisfying E13.7.1 P1. In terms of the aesthetic impact of the lift installation, a condition of permit, as concluded in the Michael Small, Equality Building report, would result in E13.7.2 P3 being satisfied.

An assessment against E13.10.1 P1 was done under PLN-20-723 for the previous proposal and the conclusions reached can be translated to this application and remain appropriate and valid. The proposal, with appropriate conditions, satisfies E13.10.1 P1.

An assessment against E17.7.2 (a) to (i) was also undertaken under PLN-20-723. The signage proposal has not changed and therefore it is considered that this current proposal satisfies E17.7.2 (a) to (i).

Should a permit be issued the following modified conditions based on the earlier permit (PLN-20-723) must be included.

HER 11

The stone wall and capping stones along the Melville Street frontage, either side of the pedestrian entry and returns on the south west and north east must be retained and conserved in situ to the highest standard using lime rich mortar. Any nearby excavation or demolition must not damage the stone wall. Temporary and permanent bracing must be installed to ensure the stone wall does not collapse during or post construction.

Prior to the issue of any approval (excluding Stage 1 works) under the *Building Act 2016*, revised plans must be submitted and approved showing all conservation works and temporary and permanent bracing in accordance with the above requirement.

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

Advice:
The conservation of the wall must be to the highest standard. The construction method and of the wall degree of stability of the wall is not certain, such that all excavation must be undertaken with the supervision of a suitably qualified historic heritage expert. Should any variance to the design be required due to unexpected finds or site conditions, the entry and access should be redesigned. A separate planning approval may be required.

Reason for condition
To ensure that development at a heritage place is undertaken in a sympathetic manner which does not cause loss of historic cultural heritage significance.

HER 6

All onsite excavation and disturbance between the front stone wall and the existing building and elsewhere on site (as shown on drawing site Works Plan, drawing A004, Rev C, dated 8/6/21) , must be monitored by a suitably qualified archaeologist. Should any features or deposits of an archaeological nature be discovered on the site during

excavation or disturbance:
1. All excavation and/or disturbance must stop immediately; and
2. A qualified archaeologist must be engaged to provide advice and assessment of the features and/or deposits discovered and make recommendations on further excavation and/or disturbance; and
3. All and any recommendations made by the archaeologist engaged in accordance with (2) above must be complied with in full; and
4. All features and/or deposits discovered must be reported to the Council with 1 days of the discovery; and
5. A copy of the archaeologists advice, assessment and recommendations obtained in accordance with 2. above must be provided to Council within 60 days of receipt of the advice, assessment and recommendations and prior to the issue of a certificate of occupancy.

Excavation and/or disturbance must not recommence unless and until approval is granted from the Council.

Reason for condition
To ensure that work is planned and implemented in a manner that seeks to understand, retain, protect, preserve and manage significant archaeological evidence.

HER 20
The site must be landscaped with plants appropriate to the growing conditions and the historic setting. All landscaping shown in the landscaping plan (as shown in drawing A103, Rev L, dated 15/3/21) must be undertaken prior to completion and must be substantially in accordance with the approved plan. Any substantial change in the plants, growing conditions and irrigations system requires further approval.
Reason for condition
To ensure that development at a heritage place is undertaken in a sympathetic manner which does not cause loss of historic cultural heritage significance.

HER s3
The exterior cladding of the lift is not approved. Revised and detailed plans must be prepared and submitted for the exterior of the lift that are sympathetic to and more compatible with the historic character of the place as well as respond to and reflect the character of the proposed timber balustrade to the front timber deck.

Revised and detailed plans must be prepared and submitted by a suitably qualified person in historic heritage for the new front steps, landings, handrail and balustrade to be sympathetic and subservient to the historic cultural heritage significance of the place.

Prior to the issue of any approval (excluding Stage 1 works) under the *Building Act 2016*, revised plans must be submitted and approved in accordance with the above requirement. All work required by this condition must be undertaken in accordance with the approved plans.

Advice: Materials such as the timber battens shown in the vertical balustrade/screen on the proposed elevations and horizontal timber screen both with an oiled finish and 25% transparency (drawing A105, Rev C) would be considered appropriate for the exterior of the lift and for the handrail/balustrade to the front steps.

Reason for condition:
To ensure that development at a heritage place is undertaken in a sympathetic manner which does not cause loss of historic cultural heritage significance.

Reasons for refusal
The proposal does not meet the acceptable solution or the performance criterion with respect to clause E13.7.2 P1 (a) of the *Hobart Interim Planning Scheme 2015* because it is an incompatible design through its height, scale, bulk, form, siting, colours and finishes being adjacent to a heritage listed place.

The proposal does not meet the acceptable solution or the performance criterion with respect to clause E13.7.2 P2 (a) to (d) of the *Hobart Interim Planning Scheme 2015* because it will not be subservient and complementary to the listed place due to its scale, bulk, built form, setback from frontage, siting with respect to listed elements.

Sarah Waight
Senior Cultural Heritage Officer
15 July 2021

7.1.4 3/68-70 FORSTER STREET, 72 FORSTER STREET, NEW TOWN - ALTERATIONS AND SUBDIVISION (BOUNDARY ADJUSTMENT) PLN-21-321 - FILE REF: F21/73319

Address:	3/68-70 Forster Street, 72 Forster Street, New Town
Proposal:	Alterations and Subdivision (Boundary Adjustment)
Expiry Date:	10 August 2021
Extension of Time:	Not applicable
Author:	Cameron Sherriff

RECOMMENDATION

That pursuant to the *Hobart Interim Planning Scheme 2015*, the Council approve the application for alterations and subdivision (boundary adjustment), at 3/68-70 Forster Street and 72 Forster Street, New Town 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-21-321 - 3/68-70 FORSTER STREET NEW TOWN TAS 7008 - Advertised Documents except where modified below.

Reason for condition

To clarify the scope of the permit.

ENG 5

No off-street parking is approved on the site as part of this development.

Reason for condition

To clarify the scope of the permit.

SURV 1

The applicant must submit to the Council a copy of the surveyor's survey notes at the time of lodging the final plan.

Reason for condition

To enable the Council to accurately update cadastral layers on the corporate Geographic Information System.

SURV 3

The final plan and schedule of easements must be submitted and approved under section 89 of the *Local Government (Building & Miscellaneous Provisions) Act 1993*.

The final plan and schedule of easements must provide easements to the satisfaction of the Council:

Over any existing private rights of way and drainage easements in favour of the lots they are required to serve.

Reason for condition

To ensure that there are no impediments to the provision of private services and access to the lots.

SURV 9

Any lots on the final plan created from the addition of sub minimal lots on the plan of subdivision are to be notated on the final plan.

The final plan must include notations in accordance with section 111 of the *Local Government (Building and Miscellaneous Provisions) Act 1993*, in relation to the lot on the final plan for the boundary adjustment to satisfy the above requirement.

Reason for condition

To ensure compliance with statutory provisions.

SUB s1

An amendment to Strata Plan 143071 must be submitted with the final plan for the boundary adjustment and approved by Council in accordance with the requirements of sections 19 and 31 of the Strata Titles Act 1998, concurrently with the sealing of the final plan for the boundary adjustment.

Reason for condition

To enable Lot 100 on the Plan of Subdivision to be added to Lot 3 of the Strata Scheme at 68, 70 and 70A Forster Street.

SUB s2

The Benefiting Easement in favour of CT 40781/1: Right to pass and repass over the land marked ABCD on Diagram No. 40781 shall be extinguished prior to the sealing of the final plan for the boundary adjustment.

Advice:

This right of way has not been exercised for many years and when the boundary adjustment has occurred the right of way will no longer touch Council land.

Reason for condition

To ensure that this right of way is not brought forward onto the sealed plan for the boundary adjustment.

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*.

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.

STRATA AMENDMENT

You will be required to amend the strata plan pursuant to the provisions of the *Strata Titles Act 1998* in order to reflect the completed development works. Click here for more information.

COUNCIL RESERVES

This permit does not authorise any works on the adjoining Council land. Any act that causes, or is likely to cause, damage to Council's land may be in breach of Council's Public Spaces By-law and penalties may apply. A permit is required for works on Council land. The by-law is available here.

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.

SUBDIVISION ADVICE

For information regarding standards and guidelines for subdivision works click here.

All conditions imposed by this permit are in accordance with the *Local Government Building & Miscellaneous Provisions) Act 1993* and the *Conveyancing and Law of Property Act 1884.*

Attachment A:	PLN-21-321 - 3/68-70 FORSTER STREET NEW TOWN TAS 7008 - Planning Committee or Delegated Report ⇩
Attachment B:	PLN-21-321 - 3/68-70 FORSTER STREET NEW TOWN TAS 7008 - CPC Agenda Documents ⇩
Attachment C:	PLN-21-321 - 3/68-70 FORSTER STREET NEW TOWN TAS 7008 - Planning Referral Officer Cultural Heritage Report ⇩

City of HOBART

APPLICATION UNDER HOBART INTERIM PLANNING SCHEME 2015

Type of Report:	Committee
Council:	9 August 2021
Expiry Date:	10 August 2021
Application No:	PLN-21-321
Address:	3 / 68 - 70 FORSTER STREET , NEW TOWN 72 FORSTER STREET , NEW TOWN
Applicant:	Kelly Drummond Cawthon 70a Forster Street
Proposal:	Alterations and Subdivision (Boundary Adjustment)
Representations:	One (1)
Performance criteria:	Historic Heritage Code

1. Executive Summary

1.1 Planning approval is sought for Alterations and Subdivision (Boundary Adjustment), at 3/68-70 Forster Street and 72 Forster Street, New Town.

1.2 More specifically the proposal includes:

- Alterations to the existing dwelling at the rear of the three lot Strata Scheme, including the installation of skylights in the roof, construction of three low (less than one metre) timber decks attached to the dwelling within the yard space around it, 1.8 - 2.1m high steel fencing and a sliding gate for access and privacy along the north-eastern edge of the main deck area, and a 2.9 to 3.1m high, 2.3m deep semi-open steel entry canopy structure with roller door over the existing internal access way to the site.
- A boundary adjustment, involving 99m^2 of adjacent Council-owned land which is part of 72 Forster Street, which currently provides right-of-way access to all three lots in the Strata Scheme.

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

1.3.2 Historic Heritage Code - Heritage Precinct and Heritage Place

1.4 One (1) representation concerned about the proposal was received within the statutory advertising period between 06/07 and 20/07/2021.

1.5 The proposal is recommended for approval subject to conditions.

1.6 The final decision is delegated to the Council, because the application involves Council-owned land.

2. Site Detail

Image 1: Aerial view of the subject properties and surrounds.

2.1 The subject site can be seen in Image 1, above. 3/68-70 Forster Street is a 206m² internal residential lot as part of a three-lot Strata Scheme. A dwelling is located at the rear of the lot which backs on to adjacent Council open space. Whilst there is vehicular access via a right-of-way to the lot, there is no formal parking available on site given the lack of space inside the lot boundaries. 72 Forster Street is a vacant Council-owned piece of reserve land to the north-eastern side of the three-lot strata property at 68-70 Forster Street. This adjacent lot provides a right-of-way along the entire north-eastern length of the strata property for the three lots upon it to gain access from Forster Street. The piece of land covered by the right-of-way is fenced along its north-eastern and north-western sides, with a gate at the rear. The land appears as a driveway access and as a result of the fencing presents as part of the overall 68-70 Forster Street property (Plate 1, below). The subject site is surrounded by a mix of commercial, residential and educational uses, close to the Forster Street/Risdon Road/New Town Road intersection. The proposed shape of the adjusted lot is highlighted yellow in Image 2, below.

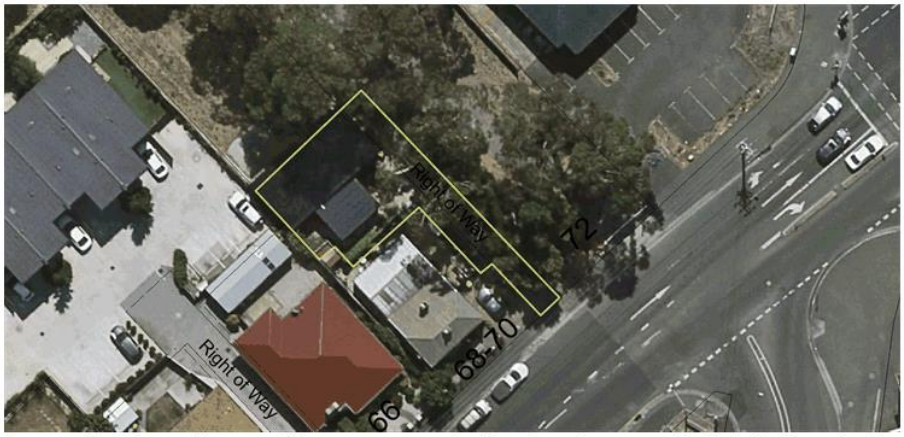


Image 2: The yellow outline represents the development 'site', taking in the land over the existing right-of-way to be transferred as part of the boundary adjustment.

Plate 1: Looking to the rear of the site from the Forster Street frontage. The driveway upon which the ute is parked with the fence to the right-hand side is the right-of-way owned by Council. As it stands, this piece of land which is to become part of the 3/68-70 Forster Street title via the proposed boundary adjustment already appears as part of that title. The proposal will result in minimal change from the existing situation.

2.2 Further views of the site follow below.

Plate 2: View to the rear of 3/68-70 Forster Street and the end of the right-of-way (fenced and screened) within 72 Forster Street. The existing dwelling is built up to the rear boundary of its lot.

Plate 3: The view from within 72 Forster Street, along the fenced edge of the right-of-way and to the dwelling on 3/68-70 Forster Street.

Plate 4: Interior view of the 3/68-70 Forster Street property and dwelling upon it, and the area where the larger of the three low timber decks is proposed to cover.

3. Proposal

3.1 Planning approval is sought for Alterations and Subdivision (Boundary Adjustment), at 3/68-70 Forster Street and 72 Forster Street, New Town.

3.2 More specifically the proposal is for:

- Alterations to the existing dwelling at the rear of the three lot Strata Scheme, including the installation of skylights in the roof, construction of three low (less than one metre) timber decks attached to the dwelling within the yard space around it, 1.8 - 2.1m high steel fencing and a sliding gate for access and privacy along the north-eastern edge of the main deck area, and a 2.9 to 3.1m high, 2.3m deep semi-open steel entry canopy structure with roller door over the existing internal access way to the site.
- A boundary adjustment, involving 99m^2 of adjacent Council-owned land which is part of 72 Forster Street, which currently provides right-of-way access to all three lots in the Strata Scheme.

4. Background

4.1 The existing dwelling was approved as a conversion from a workshop in 2013. Although one parking space was proposed, this approval for residential use was conditional on no parking being provided on site given lack of space and manouevring.

4.2 Negotiations between the current owner and Council have resulted in a condition of sale being reached to enable transfer of the Council-owned land to the lot as part of the boundary adjustment, provided planning approval is granted.

5. Concerns raised by representors

5.1 One (1) representation querying the proposal was received within the statutory advertising period between 06/07 and 20/07/2021.

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.

Following up on the notices and letter regarding a Boundary Adjustment App No PLN-21-321 I'm interested to see an image of the current boundary and the planned adjustment please. Will the adjustment see the removal of trees happen immediately or sometime during the next 5-10 years? Finally I'm also interested to hear how this adjustment will impact [our nearby property]. I've tried using the link as advised in the letter we received about the matter but didn't find any diagram showing the plan. Is there going to be any impact on the reserve land and trees please?

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 of 3/68-70 Forster Street is Residential (Multiple Dwelling). 72 Forster Street is vacant, undeveloped land. The proposal maintains the existing use of 3/68-70 Forster Street, transferring this same use onto that part of 72 Forster Street which will be absorbed as part of the boundary adjustment. A Residential (Multiple Dwelling) use 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 E13.0 Historic Heritage Code

6.5 The proposal relies on the following performance criteria to comply with the applicable standards:

6.5.1 Historic Heritage Code (Place and Precinct):

Demolition - E13.7.1 P1; E13.8.1 P1
Buildings and Works - E13.7.2 P1, P2, P4; E13.8.2 P1, P3
Subdivision - E13.7.3 P1; E13.8.3 P1

6.6 Each performance criterion is assessed below.

6.7 Historic Heritage Code (Place and Precinct) - Demolition; Buildings and Works; Subdivision

6.7.1 There is no acceptable solution for demolition of, alterations to or subdivision of a Heritage-Listed Place, or site within a Heritage Precinct.

6.7.2 The proposal includes minimal demolition of the existing dwelling to allow for minor alterations, and a boundary adjustment.

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

6.7.4 The performance criteria at clauses E13.7.1, E13.8.1, E13.7.2, E13.8.2, E13.7.3 and E13.8.3 provide as follows:

E13.7.1 P1

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.

E13.8.1 P1

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.

E13.7.2 P1

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.

E13.7.2 P2

Development must be designed to be subservient and complementary to the place through characteristics including:

(a) scale and bulk, materials, built form and fenestration;
(b) setback from frontage;
(c) siting with respect to buildings, structures and listed elements;

(d) using less dominant materials and colours.

E13.7.2 P4

Extensions to existing buildings must not detract from the historic cultural heritage significance of the place.

E13.8.2 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.

E13.8.2 P3

Extensions to existing buildings must not detract from the historic cultural heritage significance of the precinct.

E13.7.3 P1

A proposed plan of subdivision must show that historic cultural heritage significance is adequately protected by complying with all of the following:

(a) ensuring that sufficient curtilage and contributory heritage items (such as outbuildings or significant plantings) are retained as part of any title containing heritage values;

(b) ensuring a sympathetic pattern of subdivision;
(c) providing a lot size, pattern and configuration with building areas or other development controls that will prevent unsympathetic development on lots adjoining any titles containing heritage values, if required.

E13.8.3 P1

Subdivision must not result in any of the following:

(a) detriment to the historic cultural heritage significance of the precinct, as listed in Table E13.2;

(b) a pattern of subdivision unsympathetic to the historic cultural heritage significance of the precinct;

(c) potential for a confused understanding of the development of the precinct;

(d) an increased likelihood of future development that is incompatible with the historic cultural heritage significance of the precinct.

6.7.5 The Council's Cultural Heritage Officer states:

> This application relates to modifications to a freestanding existing dwelling at the rear of a double storey conjoined historic house.
>
> The Houses on No's 68 and 70 Forster Street are double storey conjoined Georgian/Victorian masonry buildings. The historic houses have been extended at the rear with single storey rooms. The current application relates to a third dwelling which has been built several meters from the rear of the houses at 68-70 Forster Street.
>
> This property has a valid planning permit for a dwelling and the proposed development includes minor changes includes skylights and screening. Because a subdivision has been triggered - the proposed development must be assessed against E 13.7.3. The proposed change to the title is the addition of a small area of land to create vehicular access.
>
> The proposed subdivision will not alter the sense of curtilage to the historic houses - which has via previous extensions and placement

of the 3rd dwelling been compromised. The proposed screens and skylights are considered to be acceptable in terms of design, height, scale, bulk, form, fenestration, siting, materials colours and finishes. The proposed elements are subservient and complementary.

Reps
Council received one representation which queried the timing of the removal of large matures trees on adjacent land. There is no evidence to suggest these trees are historically significant, but they are a council asset and possibly an important habitat for wildlife.

The impact on the heritage assets is considered acceptable. The proposed development satisfies E 13.7.1 P1 and E 13.7.2 P1, P2, and P4 and E 13.7.3. Development is behind a conjoined double storey existing building. Changes to fences and front garden are not being proposed therefore the impact on the heritage precinct would be limited to any long term changes to the health of the large trees on the adjacent Council owned land. E 13.8.1 P1, E 13.8.2 P1 & P3 and E 13.8.3 P1 are met.

6.7.6 The proposal complies with the performance criteria.

7. Discussion

7.1 Planning approval is sought for Alterations and Subdivision (Boundary Adjustment), at 3/68-70 Forster Street and 72 Forster Street, New Town.

7.2 The application was advertised and no representations were received.

7.2 The application was advertised and received one (1) representation. The representation raised concern primarily regarding how the proposal might impact trees and the reserve land, as well as the representor's nearby property. The representation was made without the proposal documents being reviewed, and as such it presented as more of a query rather than an informed concern. The representor was provided with further explanation of the development as well as a link to access the application documents for review. In response to the queries raised, the proposal does not impact trees or the reserve land in any physical way given how the land is currently utilised. All existing trees are clear of the piece of land providing the right of way that would be added to 3/68-70 Forster Street. The proposal would also have no apparent influence on the representor's property. Given the fact that the representor had not seen the plans, they were given the opportunity to withdraw their representation if they were satisfied that the application does not impact in they way they were concerned. In response, although not confirming withdrawal of their representation, the representor stated - *'Thank you very much for the helpful explanation and diagram. We are happy with the plans as they are not impacting the trees or our property. We can see they will improve life for our neighbours'.*

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 Manager - Surveying Services and Cultural Heritage Officer. The officers have raised no objection to the proposal, subject to conditions. The Manager - Surveying Services makes the following comments regarding the proposal, and how existing rights and strata title matters will need to be resolved, relative to it:

This is the same boundary adjustment as proposed by the previous withdrawn application PLN-21-133 however the scope of the building works has been greatly reduced.

The applicant has entered into a agreement with Council to purchase the strip of land within CT 40781/1 (owned by HCC) that is shown as Right of Way 3.00 wide from HCC. This Development Application is seeking approval for the boundary adjustment. The boundary adjustment will add the Right of Way land to Lot 3 on strata plan 143071. A concurrent amendment to strata plan 143071 will also be required.

The Plan of Subdivision shows all of the existing Rights of Way indicating that they will be brought forward onto the final plan of survey for the boundary adjustment however the covering letter from the applicant indicated that she will have sole use of the right of way land after the boundary adjustment.

A check of planning approvals for 1/68 - 70 and 2/68 - 70 Forster Street and the original strata approval indicates that there is no off-street car parking approved for these two strata lots however this is not entirely clear. Removal of the existing right of way in favour of Lots 1 and 2 will mean that off-street car parking could only be provided for Lot 1. Due to the orientation and dimensions of the part of strata lot 1, 17.1 m² that would be appear to be for Lot 1 off-street parking, only a very small car such as a Smart car or a motorbike could be parked within Part Lot 1 perpendicular to the frontage of Forster Street. An average size car would need to be parked parallel to the frontage of Forster Street to within Part Lot 1, 17.1 m² and the only way to achieve this is to reverse park across the initial portion of the right of way.

The letter from Dobson Mitchell Allport Lawyers acting for the applicant clarified that only Lot 1 has off-street parking and that the existing right of way will not be removed from the sealed plan. I rang and discussed this with Alex Bobbi at DMA and he is happy for the right of way not to be removed prior to the sealing of the final plan and advised that the deletion of the right of way will be dealt with later. If it requires an amendment to the sealed plan then that is okay. I advised him that Lot 1 in the strata will still require a right of way to enable a car to reverse park across the Right of Way land. He now understands this and will advise his client, the applicant.

7.5 The proposal is recommended for approval.

8. Conclusion

8.1 The proposed Alterations and Subdivision (Boundary Adjustment), at 3/68-70 Forster Street and 72 Forster Street, New Town 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 Alterations and Subdivision (Boundary Adjustment), at 3/68-70 Forster Street and 72 Forster Street, New Town 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-21-321 - 3/68-70 FORSTER STREET NEW TOWN TAS 7008 - Advertised Documents except where modified below.

Reason for condition

To clarify the scope of the permit.

ENG 5

No off-street parking is approved on the site as part of this development.

Reason for condition

To clarify the scope of the permit.

SURV 1

The applicant must submit to the Council a copy of the surveyor's survey notes at the time of lodging the final plan.

Reason for Condition

To enable the Council to accurately update cadastral layers on the corporate Geographic Information System.

SURV 3

The final plan and schedule of easements must be submitted and approved under section 89 of the *Local Government (Building & Miscellaneous Provisions) Act 1993*.

The final plan and schedule of easements must provide easements to the satisfaction of the Council:

Over any existing private rights of way and drainage easements in favour of the lots they are required to serve.

Reason for condition

To ensure that there are no impediments to the provision of private services and access to the lots.

SURV 9

Any lots on the final plan created from the addition of sub minimal lots on the plan of subdivision are to be notated on the final plan.

The final plan must include notations in accordance with section 111 of the *Local Government (Building and Miscellaneous Provisions) Act 1993*, in relation to the lot on the final plan for the boundary adjustment to satisfy the above requirement.

Reason for condition

To ensure compliance with statutory provisions.

SUB s1

An amendment to Strata Plan 143071 must be submitted with the final plan for the boundary adjustment and approved by Council in accordance with the requirements of sections 19 and 31 of the Strata Titles Act 1998, concurrently with the sealing of the final plan for the boundary adjustment.

Reason for condition

To enable Lot 100 on the Plan of Subdivision to be added to Lot 3 of the Strata Scheme at 68, 70 and 70A Forster Street.

SUB s2

The Benefiting Easement in favour of CT 40781/1: Right to pass and repass over the land marked ABCD on Diagram No. 40781 shall be extinguished prior to the sealing of the final plan for the boundary adjustment.

Advice: This right of way has not been exercised for many years and when the boundary adjustment has occurred the right of way will no longer touch Council land.

Reason for condition

To ensure that this right of way is not brought forward onto the sealed plan for the boundary adjustment.

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*.

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.

STRATA AMENDMENT

You will be required to amend the strata plan pursuant to the provisions of the *Strata Titles Act 1998* in order to reflect the completed development works. Click here for more information.

COUNCIL RESERVES

This permit does not authorise any works on the adjoining Council land. Any act that causes, or is likely to cause, damage to Council's land may be in breach of Council's Public Spaces By-law and penalties may apply. A permit is required for works on Council land. The by-law is available here.

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.

SUBDIVISION ADVICE

For information regarding standards and guidelines for subdivision works click here.

All conditions imposed by this permit are in accordance with the *Local Government Building & Miscellaneous Provisions) Act 1993* and the *Conveyancing and Law of Property Act 1884.*

(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: 21 July 2021

Attachment(s):

Attachment B - CPC Agenda Documents

Attachment C - Planning Referral Officer Cultural Heritage Report

Planning: #231874

Property

3/68-70 FORSTER STREET NEW TOWN TAS 7008

People

Applicant
*

Kelly Drummond Cawthon
70a Forster Street
NEW TOWN TAS 7008
0467 661 170
kdrummondcawthon@gmail.com

Owner
*

Kelly Drummond Cawthon
70a Forster Street
NEW TOWN TAS 7008
0467 661 170
kdrummondcawthon@gmail.com

Entered By
KELLY JANE DRUMMOND CAWTHON
0467 661 170
kdrummondcawthon@gmail.com

Use

Subdivision

Details

Have you obtained pre application advice?

- Yes

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

Extended emails and Meetings with Cameron Sherriff and Karen Abey.

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)?
*

There is a single dwelling on 3/68-70 Forster Street. Currently the land that is being applied to be subdivided is a right of way owned by the City of Hobart. I have a contract with the City of Hobart to purchase the land and am working with Mathew Leary, Surveyor and Alex Bobbi, attorney to have it added to my title at 3/ 68-70 Forster Street.

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

The dwelling will have skylights added for light, decking and a sliding gate added for privacy, and a garage door/gate added for security. The row of land at 72 Forster Street [Lot 100] will be used as access and parking for 3/ 68-70 Forster Street [Lot 3 of strata 143071]. It is intended to be added to Lot 3 for my sole use and will no longer be a right of way for 1/68-70 or 2/68-70 Forster Street.

Is the application for subdivision only? If yes enter $0 in estimated cost of development to calculate related fees.

- No

If yes, how many new lots are proposed?

1

Estimated cost of development
*

35000.00

Existing floor area (m2)	Proposed floor area (m2)	Site area (m2)
		305

Carparking on Site

N/A

Total parking spaces	Existing parking spaces	
2	0	[] 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 Schedule of Easements)
*
72 Forster - FolioPlan-40781-1.pdf

Title (Folio text and Plan and Schedule of Easements)
*
Cert of Title - Cawthon & Sissel.pdf

Plans (proposed, existing)
*
Plans for parking and decks.pdf

Plans (proposed, existing)
*
Skylights and gates Plan.pdf

Plans (proposed, existing)
*
Plans Existing and New for subdivision.pdf

GM or Crown consent
GMC-21-17 - 72 FORSTER STREET NEW TOWN TAS 7008 - Notice of Land Owner Consent to Lodge a Planning Application (including documentation).pdf

Supporting Documents

Subdivision Proposal Plan
1186910_Plan of Subdivision.pdf

signed sale agreement
Signed Agreement (T1785756xD3FB5).pdf

Kelly Drummond Cawthon
6 Dune Street
Scamander 7215

28.05.2021

Re: 3/68-70 Forster Street New Town 7008
Council Reference : 36870

To: City of Hobart Development and Planning

I have purchased the property at 3/68-70 Forster Road in New Town. I currently have a temporary occupancy permit and I am in the process of submitting building and plumbing permits to bring the interior of the property into good order. The renovation plans include insulation, new windows and doors and replacing all previous un-approved works including the two bathrooms, kitchen and laundry.

I have a contract with the City of Hobart to purchase a strip of the property at 72 Forster Street [Lot 100]. I am submitting this planning application to address the boundary adjustment. It is intended that once purchased, what is currently a right of way for 1/68-70 and 2/68-70 Forster will be added only to the title of 3/68-70 Forster Street. I will have sole use of the land.

Also included in the application is the plan to add velux skylights to the property to bring in natural light, decking [composite wood], fence cladding to the existing metal fencing [tea-tree] and a new gate [colour-bond] for privacy and security. Peter Holloway of Prime 8 Construction will be undertaking the work.

Please do not hesitate to contact me if I can provide you with any further information. I would appreciate an opportunity to meet with someone in planning to understand if my application is now ready to progress to building and plumbing applications.

Thank you for your consideration.

Cheers,
Kelly Drummond Cawthon
kdrummondcawthon@gmail.com
0467 661 170

Dobson Mitchell Allport.

COMMERCIAL LITIGATION PROPERTY LAWYERS

Hobart City Council
Via online upload

25 June 2021

Dear Sirs

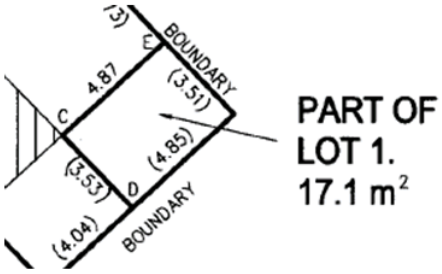
Additional Information Request - PLN-21-321 - 3/68-70 FORSTER STREET NEW TOWN TAS 7008

We act for the applicant.

The sealed plan to put in place the boundary adjustment will not remove the right of way benefitting lots 1 and 2.

In any event, council should have no issue with a removal of the right of way.

Lot 1 has its own off street parking shown on the strata plan shown as:



Lot 2 has no off street parking. The right of way cannot legally be used for parking – it would be a substantial interference with the right of way.

Because of the physical characteristics of the land, neither lots 1 or 2 use the right of way for access .

Yours sincerely

Our Ref: AB:21000483:AB T-T1907805-1

Dobson Mitchell & Allport Pty Ltd
ABN 86 143 016 586

Office
59 Harrington Street
Hobart Tasmania
doma.com.au

Postal
GPO Box 20
Hobart Tas 7001
DX 112 Hobart

T. +61 3 6210 0000
F. +61 3 6210 0099
info@doma.com.au

Alex Bobbi
PRINCIPAL
Dobson Mitchell Allport
T. +61 3 6210 0078
alex.bobbi@doma.com.au

City of HOBART

Enquiries to: City Planning
Phone: (03) 6238 2715
Email: coh@hobartcity.com.au

17 March 2021

Kelly Drummond Cawthorn
3/68-72 Forster Street
NEW TOWN TAS 7008

mailto: kdrummondcawthon@gmail.com

Dear Sir/Madam

**72 FORSTER STREET & 3 / 68 - 70 FORSTER STREET, NEW TOWN
WORKS ON COUNCIL LAND NOTICE OF LAND OWNER CONSENT TO LODGE A PLANNING APPLICATION - GMC-21-17**

Site Address:

72 Forster Street, New Town including Right of Way over City of Hobart land

Description of Proposal:

Development within Right of Way

Applicant Name:

Kelly Drummond Cawthorn

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.

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 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

(N D Heath)
GENERAL MANAGER

Relevant documents/plans:

Plans by Paul Wakelam Architect
A1.0, A1.1, A1.2, A2.0, A3.0, A3.1, A4.0

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

Approved - General Manager Consent Only [GMC-21-17] 17/03/2021

the List

FOLIO PLAN

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

CITY/TOWN HOBART
SUBURB/LOCALITY NEW TOWN
FOLIO REFERENCE CT 116983/1
SITE COMPRISES THE WHOLE OF LOT 1 ON PLAN No ~~116983~~ P143206
MAP SHEET MUNICIPAL CODE No 114 | LAST LPI No 2105117

STRATA PLAN

SHEET 1 OF 4 SHEETS

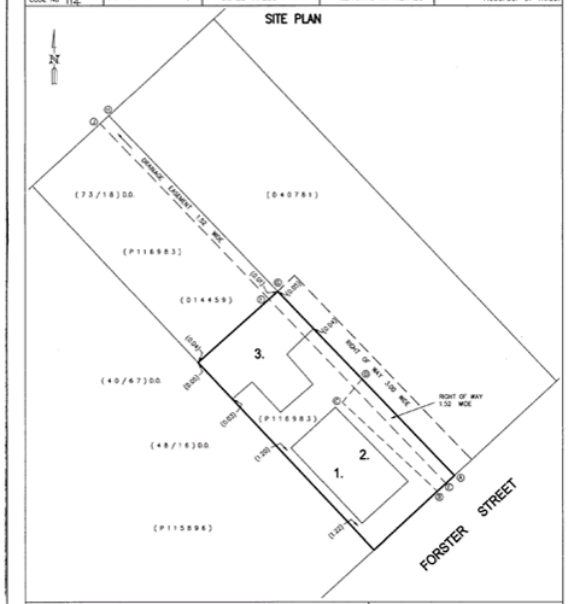
NAME OF STRATA SCHEME
68, 70 & 70A FORSTER STREET, NEW TOWN

SCALE 1: 250 | LENGTHS IN METRES

Registered Number
143071

STRATA TITLES ACT 1998
REGISTERED 8 FEB 2005
Alice Rowe
Recorder of Titles

SITE PLAN



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 PROPERTY FOLIO INTEREST'S
(iv) THE SURVEYOR'S CERTIFICATE MUST CERTIFY THAT ANY BUILDING ENCROACHMENT BEYOND THE SITE BDRY IS AUTHORISED ACCORDING TO THE LAW

STAGED/COMMUNITY DEVELOPMENT SCHEME No (IF APPLICABLE)

LODGED BY DOBSON, MITCHELL & ALLPORT

Search Date: 24 Feb 2020 Search Time: 03:12 PM Volume Number: 143071 Revision Number: 01 Page 1 of 4

Department of Primary Industries, Parks, Water and Environment www.thelist.tas.gov.au

the List

FOLIO PLAN

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

STRATA PLAN

SHEET 2 OF 4 SHEETS

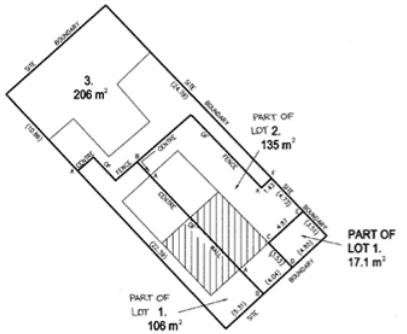
STRATA TITLES ACT 1998

143071

GROUND LEVEL

SCALE 1:200

LOT	BUILDING AREAS
1.	82.7 SQ. METRES
2.	80.6 SQ. METRES
3.	121.4 SQ. METRES



THE HORIZONTAL LOT BOUNDARIES ARE SHOWN BY HEAVY UNBROKEN LINES DEFINED BY:

SITE BOUNDARIES
THE CENTRE OF WALL LABELLED AA
THE CENTRE OF FENCES LABELLED AS AND CC
C1 AND C2 ARE THE PROLONGATION OF THE OUTER FACE OF WALLS AF IS PERPENDICULAR TO THE ADJACENT SITE BOUNDARY MEASUREMENT WHERE THE BOUNDARY IS OPEN

MEASUREMENTS IN BRACKETS ARE FOR BOUNDARY FIXATION ONLY.

THE VERTICAL LOT BOUNDARIES EXTEND FROM 2.0 METRES BELOW GROUND LEVEL TO 10 METRES ABOVE GROUND LEVEL APART FROM THE HATCHED PORTION WHICH EXTENDS FROM 30 METRES BELOW GROUND LEVEL TO THE CENTRE OF THE CEILING ABOVE.

Search Date: 24 Feb 2020 Search Time: 03:12 PM Volume Number: 143071 Revision Number: 01 Page 2 of 4

Department of Primary Industries, Parks, Water and Environment www.thelist.tas.gov.au

A Workshop
0432 936 911
aworkshop@linelnet.au
paulwakelamarchitect.com
Level 7 165 Murray Street, Hobart Tasmania 7000
Paul Wakelam Architect
BSPL. No. CC7578

NOTES
COPYRIGHT OF ALL THIS DRAWINGS IS RESERVED BY THE CONSULTANT. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS AND SPECIFICATIONS AND ANY OTHER DATA FOR COORDINATION OF SERVICES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SITE CHECKING ALL DIMENSIONS BEFORE PREPARATION OF WORKING DRAWINGS OR COMMENCEMENT OF WORK. THIS DRAWING IS THE PROPERTY OF THE CONSULTANT AND SHALL BE RETURNED UPON REQUEST.

REVISION NO

NOTE: DO NOT SCALE DRAWINGS. FIGURED DIMENSIONS SHALL TAKE PRECEDENCE OVER DRAWINGS

Development Application Submission

FOLIO TEXT & PLAN

PROJECT
PROPOSED EXISTING DWELLING
TO
LOT 3/68-70 FORSTER STREET, NEW TOWN 7016
FOR
KELLY DRUMMOND CAWTHORN & SANDI BISSEL
NOT TO BE USED FOR CONSTRUCTION UNLESS SIGNED AS APPROVED

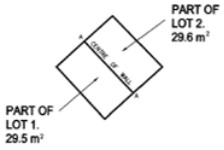
DESIGN	PAUL WAKELAM A_01.02.21
SCALE	1:1 15.11.20
DRAWN	paw | lndo
DRAWING	A0.2

Approved - General Manager Consent Only [GMC-21-17] 17/03/2021

the List — FOLIO PLAN
RECORDER OF TITLES
Issued Pursuant to the Land Titles Act 1980
Tasmanian Government

STRATA PLAN
SHEET 3 OF 4 SHEETS
STRATA TITLES ACT 1998
Registered Number
143071

FIRST FLOOR LEVEL
SCALE 1:200



THE HORIZONTAL LOT BOUNDARIES ARE SHOWN AS HEAVY UNBROKEN LINES DEFINED BY:
THE OUTER FACE OF WALLS UNLESS OTHERWISE STATED
THE CENTRE OF WALL LABELLED AA

THE VERTICAL LOT BOUNDARIES EXTEND FROM THE CENTRE OF THE FLOOR BELOW TO 10 METRES ABOVE GROUND LEVEL

Search Date: 24 Feb 2020 Search Time: 03:12 PM Volume Number: 143071 Revision Number: 01 Page 3 of 4
Department of Primary Industries, Parks, Water and Environment
www.thelist.tas.gov.au

the List — FOLIO PLAN
RECORDER OF TITLES
Issued Pursuant to the Land Titles Act 1980

STRATA PLAN
SHEET 4 OF 4 SHEETS
STRATA TITLES ACT 1998
Registered Number
143071

NAME OF BODY CORPORATE: STRATA CORPORATION No. 143071, 68, 70 & 70A FORSTER STREET, NEW TOWN

ADDRESS FOR THE SERVICE OF NOTICES: 68, 70 & 70A FORSTER STREET, NEW TOWN, TASMANIA 7008

SURVEYORS CERTIFICATE

I, JOHN DAVID McCULLUM of DYNNYRNE
a surveyor registered under the Land Surveyors Act 1909 certify that the building erected on the site and drawn on sheet 1 of this plan is within the external boundaries of the folio stated on sheet1

Registered Surveyor — 14/04/04 date — DOC. NO: HD1178 HD0120 ref no

COUNCIL CERTIFICATE

I certify that the HOBART CITY Council has:
(a) approved the lots shown in this plan and
(b) issued this certificate of approval in accordance with Section 31 of the Strata Titles Act 1998

General Delegate — 27-8-2004 date — 5488620 ref no

GENERAL UNIT ENTITLEMENTS

LOT	UNIT ENTITLEMENT
1	10
2	10
3	10
TOTAL	30

Search Date: 24 Feb 2020 Search Time: 03:12 PM Volume Number: 143071 Revision Number: 01 Page 4 of 4
Department of Primary Industries, Parks, Water and Environment
www.thelist.tas.gov.au

A Workshop
0432 936 911
aworkshop@linelnet.au
paulwakelamarchitect.com
Level 7 165 Murray Street, Hobart Tasmania 7000
Paul Wakelam Architect

BSPL No. CC7978

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REVISION NO

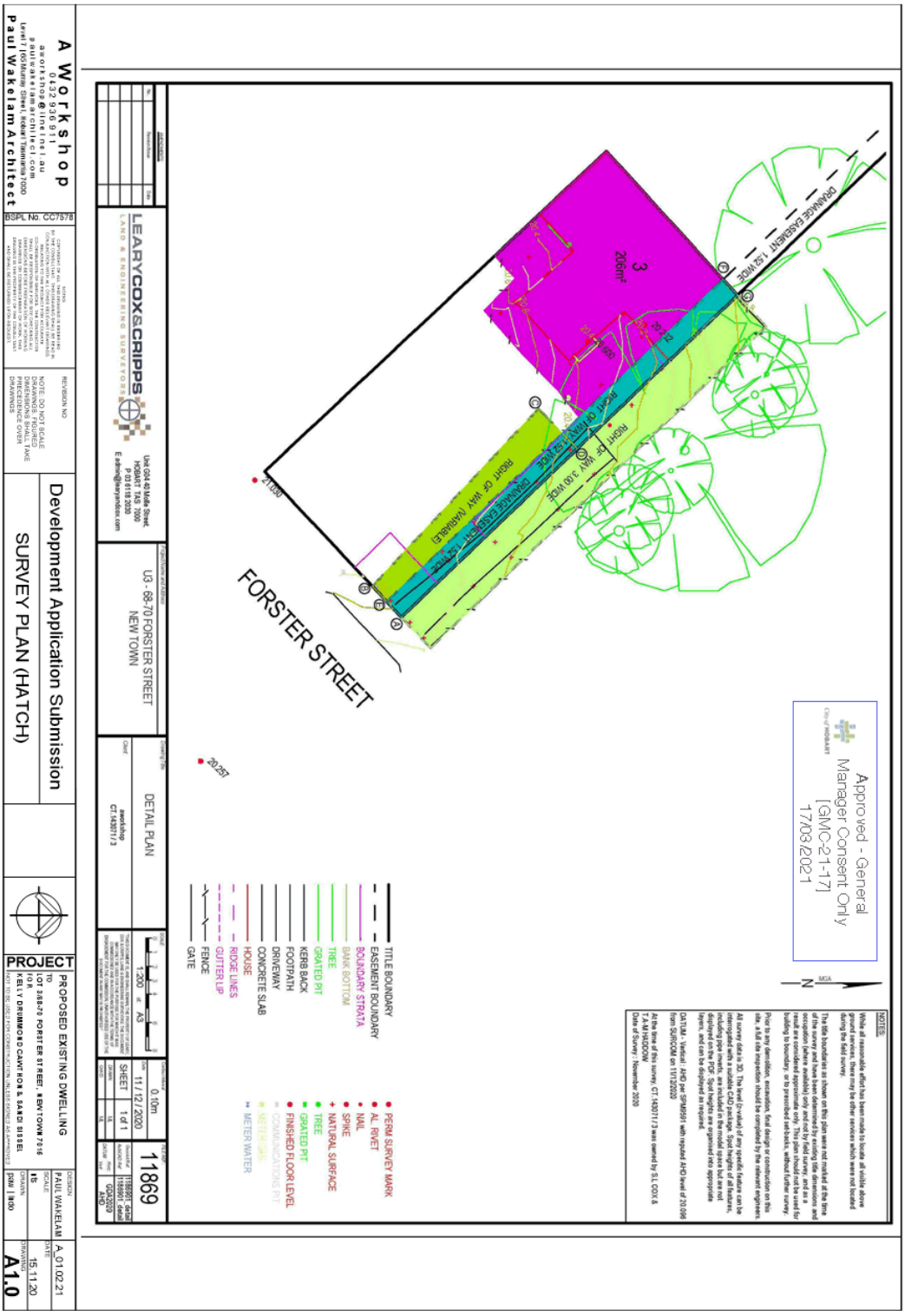
NOTE: DO NOT SCALE DRAWINGS. FIGURED DIMENSIONS SHALL TAKE PRECEDENCE OVER DRAWINGS

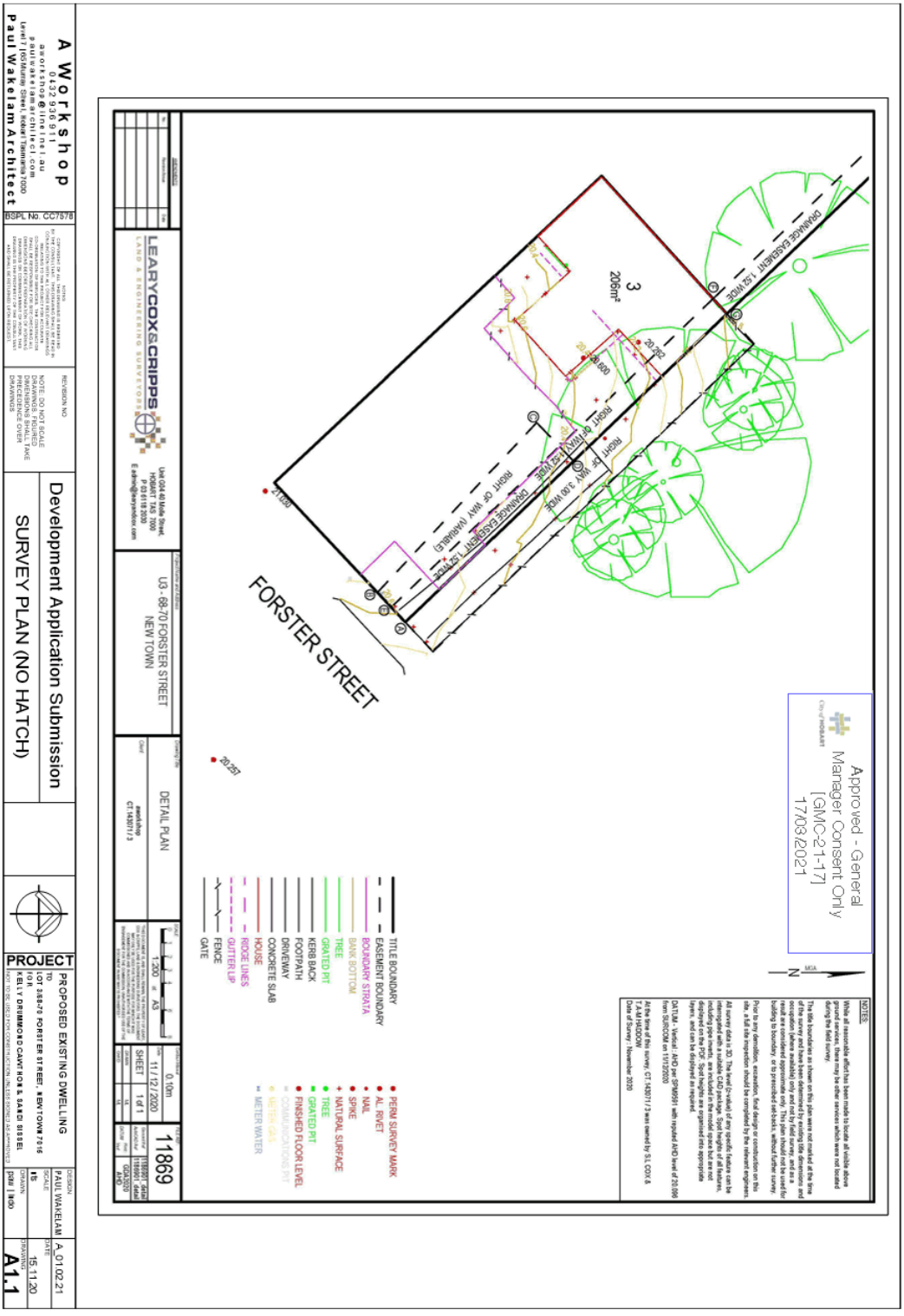
Development Application Submission

FOLIO TEXT & PLAN

PROJECT
PROPOSED EXISTING DWELLING
TO
LOT 3/68-70 FORSTER STREET, NEW TOWN 7016
FOR
KELLY DRUMMOND CAWTHON & SANDI BISSEL
NOT TO BE USED FOR CONSTRUCTION UNLESS SIGNED AS APPROVED

DESIGN	PAUL WAKELAM
SCALE	@A3
DRAWN	paw | tkdo
	A_01.02.21
DATE	15.11.20
DRAWING	A0.3


Approved - General Manager Consent Only [GMC-21-17] 17/03/2021
FORSTER STREET
DRAINAGE EASEMENT 1.52 WIDE
RIGHT OF WAY 3.00 WIDE
DRAINAGE EASEMENT 1.52 WIDE
RIGHT OF WAY (UNSEALED)
3
206m²
20.252
20.257
TITLE BOUNDARY
EASEMENT BOUNDARY
BOUNDARY STRATA
BANK BOTTOM
TREE
GRATED PIT
KERB BACK
FOOTPATH
DRIVEWAY
CONCRETE SLAB
HOUSE
RIDGE LINES
GUTTER LIP
FENCE
GATE
PERM SURVEY MARK
AL RIVET
NAIL
SPIKE
NATURAL SURFACE
TREE
GRATED PIT
FINISHED FLOOR LEVEL
COMMUNICATIONS PIT
METER GAS
METER WATER
NOTES
DATUM - Vertical: AHD per SSM9591 with reputed AHD level of 20.096 from SURCOM on 11/12/2020
Date of Survey: November 2020
LEARYCOX&CRIPPS
LAND & ENGINEERING SURVEYORS
Unit G04 40 Molle Street, HOBART TAS 7000
T 03 6231 2555
E admin@learycox.com
U3 - 68-70 FORSTER STREET NEW TOWN
DETAIL PLAN
awshop
CT: 143071/3
1:200 at A3
0 10m
11 / 12 / 2020
SHEET 1 of 1
11869
11869001_detail
GDA2020
AHD
A Workshop
0132 936 911
admin@awshop.com.au
paul.wakelam@architect.com
Level 7 | 165 Murray Street, Hobart Tasmania 7000
Paul Wakelam Architect
BSPL No. CC7578
REVISION NO
NOTE: DO NOT SCALE DRAWINGS. FIGURED DIMENSIONS SHALL TAKE PRECEDENCE OVER DRAWINGS
Development Application Submission
SURVEY PLAN (HATCH)
PROJECT
PROPOSED EXISTING DWELLING
TO
LOT 2 & 3 ON SP 143071 FORSTER ST REET, NEW TOWN 7016
FOR MR KELLY DRUMMOND-CANTRILL & SARDI BISSEL
PAUL WAKELAM
SCALE @5
DRAWN: PWM | MDD
DATE 15.11.20
DRAWING A1.0
A_01.02.21


Approved - General
Manager Consent Only
[GMC-21-17]
17/03/2021
FORSTER STREET
DRAINAGE EASEMENT 1.52 WIDE
RIGHT OF WAY 3.00 WIDE
206m²
3
NOTES
While all reasonable effort has been made to locate all visible above ground services, there may be other services which were not located during the field survey.
The title boundaries as shown on this plan were not marked at the time of the survey and have been determined by existing title dimensions and occupation (where available) only and not by field survey, and as a building to boundary, or to prescribed setbacks, without further survey.
Prior to any demolition, excavation, final design or construction on this site, a full site inspection should be completed by the relevant engineers.
All survey data is 3D. The level (z=value) of any specific feature can be interrogated with a suitable CAD package. Spot heights of all features, including pits, are to the top of the feature. Spot heights are not displayed on the PDF. Spot heights are organised into appropriate layers, and can be displayed as required.
DATUM - Vertical - AHD per SP98591 with reported AHD level of 29.996 from SURCOM on 11/12/2020
Strata Strip of this survey, CT-143071/3 was owned by SL COX & T A MHUDCWN
Date of Survey : November 2020
TITLE BOUNDARY
EASEMENT BOUNDARY
BOUNDARY STRATA
BANK BOTTOM
TREE
GRATED PIT
KERB BACK
FOOTPATH
DRIVEWAY
CONCRETE SLAB
HOUSE
RIDGE LINES
GUTTER LIP
FENCE
GATE
PERM SURVEY MARK
AL. RIVET
NAIL
SPIKE
NATURAL SURFACE
TREE
GRATED PIT
FINISHED FLOOR LEVEL
METER WATER
LEARYCOX&CRIPPS
LAND & ENGINEERING SURVEYORS
Unit 204 49 Molle Street
HOBART TAS 7000
P 03 6118 2030
E admin@learycoxlcox.com
U3 - 68-70 FORSTER STREET
NEW TOWN
DETAIL PLAN
mapshop
CT 143071/3
1:200 at A3
0.10m
11 / 12 / 2020
SHEET 1 of 1
11869
A Workshop
0132 936 911
p a u l w a k e l a m a r c h i t e c t . c o m
Level 7 | 165 Murray Street, Hobart Tasmania 7000
Paul Wakelam Architect
BSPL No. CC7578
REVISION NO
NOTE: DO NOT SCALE DRAWINGS. FIGURED DIMENSIONS SHALL TAKE PRECEDENCE OVER DRAWINGS
Development Application Submission
SURVEY PLAN (NO HATCH)
PROJECT
PROPOSED EXISTING DWELLING
TO
LOT 2 SP 98572 FORSTER ST REET , NEW TOWN 7010
OWNER
KELLY DRUMMOND-CANTRON & SAADI BISSEL
DESIGN
PAUL WAKELAM
SCALE
@A
DRAWN
PWM | WDD
DATE
15.11.20
DRAWING
A1.1
A_01.02.21

CERTIFICATE OF TITLE

LAND TITLES ACT 1980

TASMANIA

TORRENS TITLE

VOLUME	FOLIO
143071	3
EDITION	DATE OF ISSUE
6	17-Nov-2020
Page 2	of 2

I certify that the person described in Schedule 1 is the registered proprietor of an estate in fee simple (or such other estate or interest as is set forth in that Schedule) in the land within described subject to such exceptions, encumbrances, interests and entries specified in Schedule 2 and to any additional entries in the Folio of the Register.

Recorder of Titles

Indenture Number 32/8000 a right of carriage way over the strip of land marked A.G.F.E. on Plan No. 116983.

C558029 BENEFITING EASEMENT: A right of carriageway over the Right of Way A.G. 3.00 Wide on P.116983 Registered 23-Sep-2004 at noon

WARNING: BEFORE DEALING WITH THIS LAND SEARCH THE CURRENT FOLIO OF THE REGISTER

CERTIFICATE OF TITLE

LAND TITLES ACT 1980

TASMANIA

TORRENS TITLE

VOLUME	FOLIO
143071	3
EDITION	DATE OF ISSUE
6	17-Nov-2020

I certify that the person described in Schedule 1 is the registered proprietor of an estate in fee simple (or such other estate or interest as is set forth in that Schedule) in the land within described subject to such exceptions, encumbrances, interests and entries specified in Schedule 2 and to any additional entries in the Folio of the Register.

Recorder of Titles

Page 1	of 2

DESCRIPTION OF LAND

City of HOBART
Lot 3 on Strata Plan 143071 and a general unit entitlement operating for all purposes of the Strata Scheme being a 10 undivided 1/30 interest
Derived from Strata Plan 143071
Derivation : Part of Lot 1 (Section A.) Gtd. to C. Jordan.

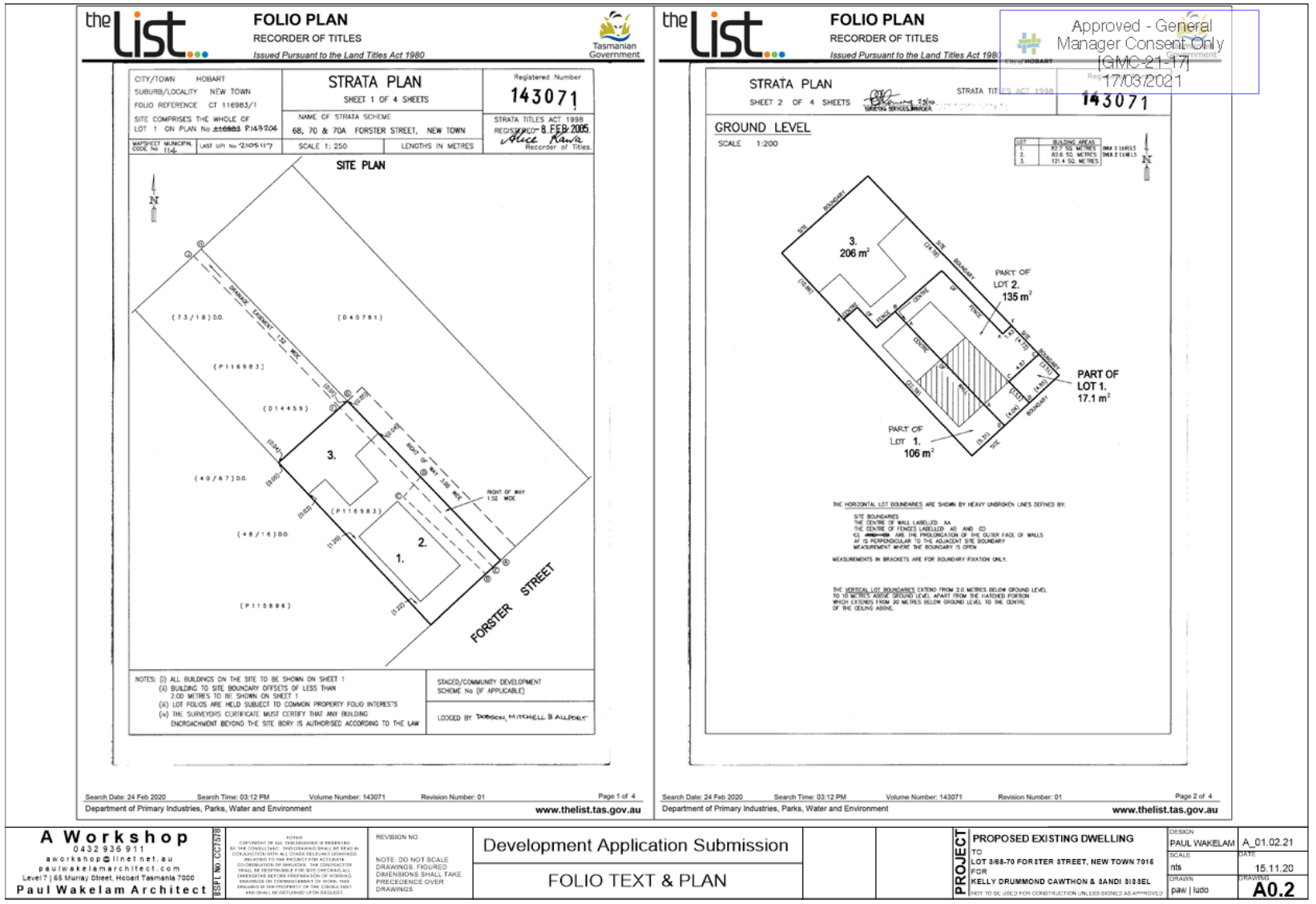
SCHEDULE 1

M843434 TRANSFER to KELLY JANE DRUMMOND CAWTHON and SANDRA SUE SISSEL as tenants in common in equal shares Registered 17-Nov-2020 at 12.01 PM

SCHEDULE 2

Reservations 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 143071 folio 0
BENEFITING EASEMENT: Right of Drainage over the drainage easement marked F.G.H.J. on Plan No. 116983
BURDENING EASEMENT: and reserving to Samuel Bridges and to the Trustees of the estates of W.F. Stephens and A.C. Stephens and the owners and occupiers from time to time of the land situate to the North East of the said land within described (hereafter called "the dominant land") in common with Nancy Eva Lincoln her heirs and assigns and the owners and occupiers from time to time of the said land within described full right and liberty at all times hereafter by day or by night and for all purposes with or without horses and other animals carts carriages and other vehicles laden or unladen to go pass and repass in through over along and upon the strip of land marked A.B.C.D. on Plan No. 116983.
Together with the full right and liberty for the owners and occupiers from time to time of the dominant land to repair and mend the roadway on the said strip of land.
RESERVING NEVERTHELESS: unto Joyce Marie Steen and Sarah Olive Burke their respective heirs and assigns as appurtenant to the balance of the land comprised in

WARNING: BEFORE DEALING WITH THIS LAND SEARCH THE CURRENT FOLIO OF THE REGISTER



the List

FOLIO PLAN
RECORDER OF TITLES
Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

CITY/TOWN HOBART
SUBURB/LOCALITY NEW TOWN
FOLIO REFERENCE CT 116983/1
SITE COMPRISES THE WHOLE OF LOT 1 ON PLAN No ~~116983~~ P143204
MAPSHEET MUNICIPAL CODE No. 116 | LAST UPI No 2105 U(7)

STRATA PLAN
SHEET 1 OF 4 SHEETS

NAME OF STRATA SCHEME
68, 70 & 70A FORSTER STREET, NEW TOWN

SCALE 1: 250 | LENGTHS IN METRES

Registered Number
143071

STRATA TITLES ACT 1998
REGISTERED 8 FEB 2005
Alice Rava
Recorder of Titles

SITE PLAN

N

(73/18) D.O. | (D40781) | (P116983) | (D14459) | (40/67) D.O. | (48/16) D.O. | (P115896)

DRAINAGE EASEMENT 1.52 WIDE

RIGHT OF WAY 1.52 WIDE

1. | 2. | 3.

FORSTER STREET

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 PROPERTY FOLIO INTERESTS
(iv) THE SURVEYORS CERTIFICATE MUST CERTIFY THAT ANY BUILDING ENCROACHMENT BEYOND THE SITE BORY IS AUTHORISED ACCORDING TO THE LAW

STAGED/COMMUNITY DEVELOPMENT SCHEME No (IF APPLICABLE)

LODGED BY DOBSON, MITCHELL & ALLPORT

Search Date: 24 Feb 2020 | Search Time: 03:12 PM | Volume Number: 143071 | Revision Number: 01 | Page 1 of 4
Department of Primary Industries, Parks, Water and Environment | www.thelist.tas.gov.au

the List

FOLIO PLAN
RECORDER OF TITLES
Issued Pursuant to the Land Titles Act 1998

Approved - General Manager Consent Only [GMC-21-17] 17/03/2021

STRATA PLAN
SHEET 2 OF 4 SHEETS

STRATA TITLES ACT 1998

Registered Number
143071

GROUND LEVEL
SCALE 1:200

LOT	BUILDING AREAS
1.	82.7 SQ. METRES
2.	80.6 SQ. METRES
3.	121.4 SQ. METRES

N

3.
206 m²

PART OF LOT 2.
135 m²

PART OF LOT 1.
17.1 m²

PART OF LOT 1.
106 m²

THE HORIZONTAL LOT BOUNDARIES ARE SHOWN BY HEAVY UNBROKEN LINES DEFINED BY:

SITE BOUNDARIES
THE CENTRE OF WALL LABELLED AA
THE CENTRE OF FENCES LABELLED AB AND CD
CC AND DD ARE THE PROLONGATION OF THE OUTER FACE OF WALLS AF IS PERPENDICULAR TO THE ADJACENT SITE BOUNDARY MEASUREMENT WHERE THE BOUNDARY IS OPEN

MEASUREMENTS IN BRACKETS ARE FOR BOUNDARY FIXATION ONLY.

THE VERTICAL LOT BOUNDARIES EXTEND FROM 2.0 METRES BELOW GROUND LEVEL TO 10 METRES ABOVE GROUND LEVEL APART FROM THE HATCHED PORTION WHICH EXTENDS FROM 20 METRES BELOW GROUND LEVEL TO THE CENTRE OF THE CEILING ABOVE.

Search Date: 24 Feb 2020 | Search Time: 03:12 PM | Volume Number: 143071 | Revision Number: 01 | Page 2 of 4
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A Workshop
0432 936 911
aworkshop@iinet.net.au
paulwakelamarchitect.com
Level 7 | 65 Murray Street, Hobart Tasmania 7000
Paul Wakelam Architect

MSF1 NO CC7369

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REVISION NO

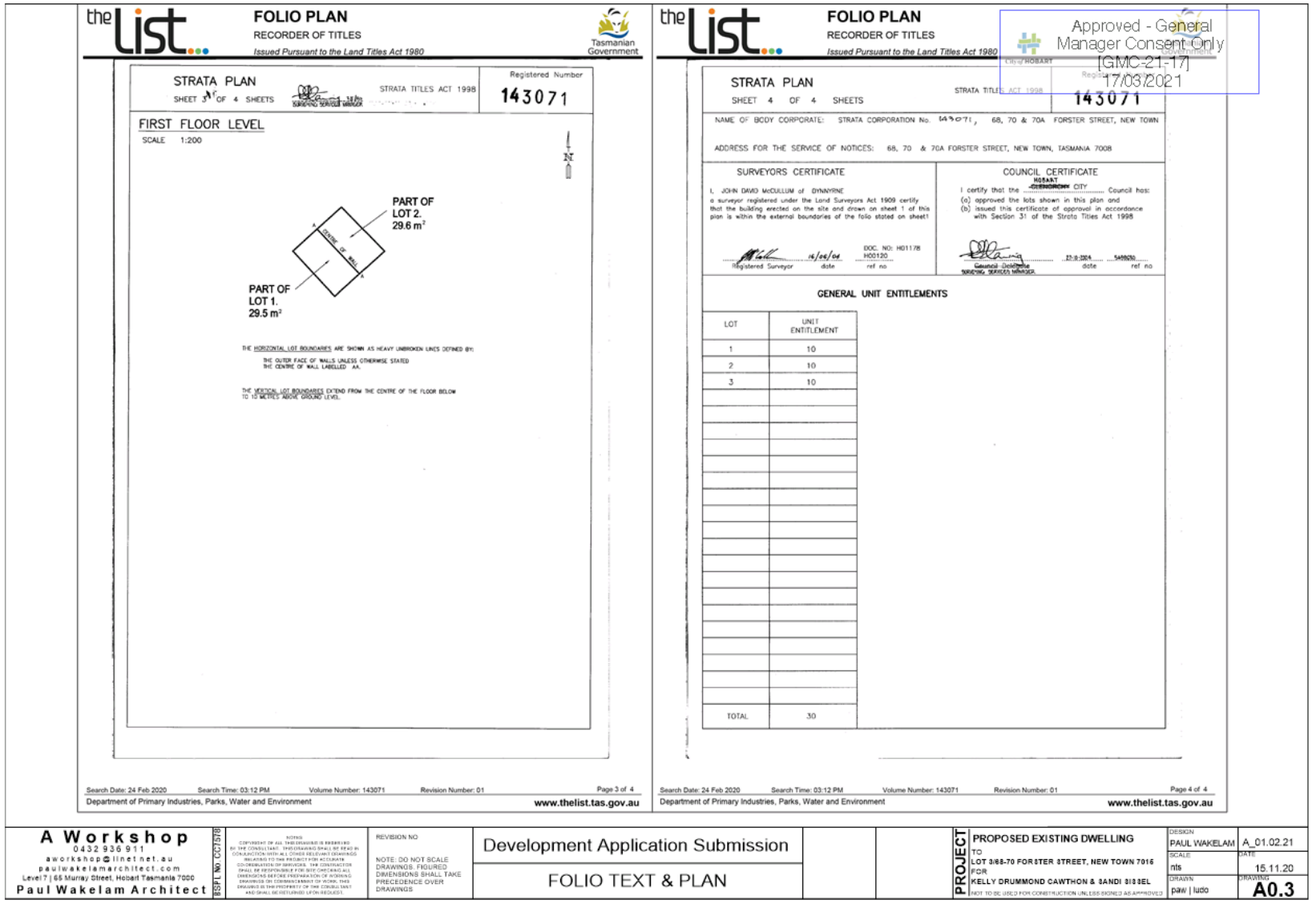
NOTE: DO NOT SCALE DRAWINGS. FIGURED DIMENSIONS SHALL TAKE PRECEDENCE OVER DRAWINGS

Development Application Submission

FOLIO TEXT & PLAN

PROJECT
PROPOSED EXISTING DWELLING
TO
LOT 3/68-70 FORSTER STREET, NEW TOWN 7016
FOR
KELLY DRUMMOND CAWTHON & SANDI BISSEL
NOT TO BE USED FOR CONSTRUCTION UNLESS SIGNED AS APPROVED

DESIGN	PAUL WAKELAM	A_01.02.21
SCALE	nts	DATE 15.11.20
DRAWN	paw | ludo	DRAWING A0.2



the List

FOLIO PLAN
RECORDER OF TITLES
Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

STRATA PLAN
SHEET 3 OF 4 SHEETS
STRATA TITLES ACT 1998
Registered Number
143071

FIRST FLOOR LEVEL
SCALE 1:200

N

PART OF LOT 2. 29.6 m²
CENTRE OF WALL
PART OF LOT 1. 29.5 m²

THE HORIZONTAL LOT BOUNDARIES ARE SHOWN AS HEAVY UNBROKEN LINES DEFINED BY:
THE OUTER FACE OF WALLS UNLESS OTHERWISE STATED
THE CENTRE OF WALL LABELLED AA.

THE VERTICAL LOT BOUNDARIES EXTEND FROM THE CENTRE OF THE FLOOR BELOW TO 10 METRES ABOVE GROUND LEVEL.

Search Date: 24 Feb 2020 Search Time: 03:12 PM Volume Number: 143071 Revision Number: 01 Page 3 of 4
Department of Primary Industries, Parks, Water and Environment www.thelist.tas.gov.au

the List

FOLIO PLAN
RECORDER OF TITLES
Issued Pursuant to the Land Titles Act 1980

Approved - General Manager Consent Only [GMC-21-17] 17/03/2021

STRATA PLAN
SHEET 4 OF 4 SHEETS
STRATA TITLES ACT 1998
Registered Number
143071

NAME OF BODY CORPORATE: STRATA CORPORATION No. 143071, 68, 70 & 70A FORSTER STREET, NEW TOWN

ADDRESS FOR THE SERVICE OF NOTICES: 68, 70 & 70A FORSTER STREET, NEW TOWN, TASMANIA 7008

SURVEYORS CERTIFICATE

I, JOHN DAVID McCULLUM of GLENORCHY
a surveyor registered under the Land Surveyors Act 1909 certify that the building erected on the site and drawn on sheet 1 of this plan is within the external boundaries of the folio stated on sheet1

Registered Surveyor 15/06/04 date DOC. NO: H01178 H00120 ref no

COUNCIL CERTIFICATE

HOBART / GLENORCHY CITY

I certify that the ..... Council has:
(a) approved the lots shown in this plan and
(b) issued this certificate of approval in accordance with Section 31 of the Strata Titles Act 1998

Council Delegate 23-6-2004 date 5498250 ref no

GENERAL UNIT ENTITLEMENTS

LOT	UNIT ENTITLEMENT
1	10
2	10
3	10
TOTAL	30

Search Date: 24 Feb 2020 Search Time: 03:12 PM Volume Number: 143071 Revision Number: 01 Page 4 of 4
Department of Primary Industries, Parks, Water and Environment www.thelist.tas.gov.au

A Workshop
0432 936 911
aworkshop@iinet.net.au
paulwakelamarchitect.com
Level 7 | 65 Murray Street, Hobart Tasmania 7000
Paul Wakelam Architect

MSF1 NO CC7979

REVISION NO

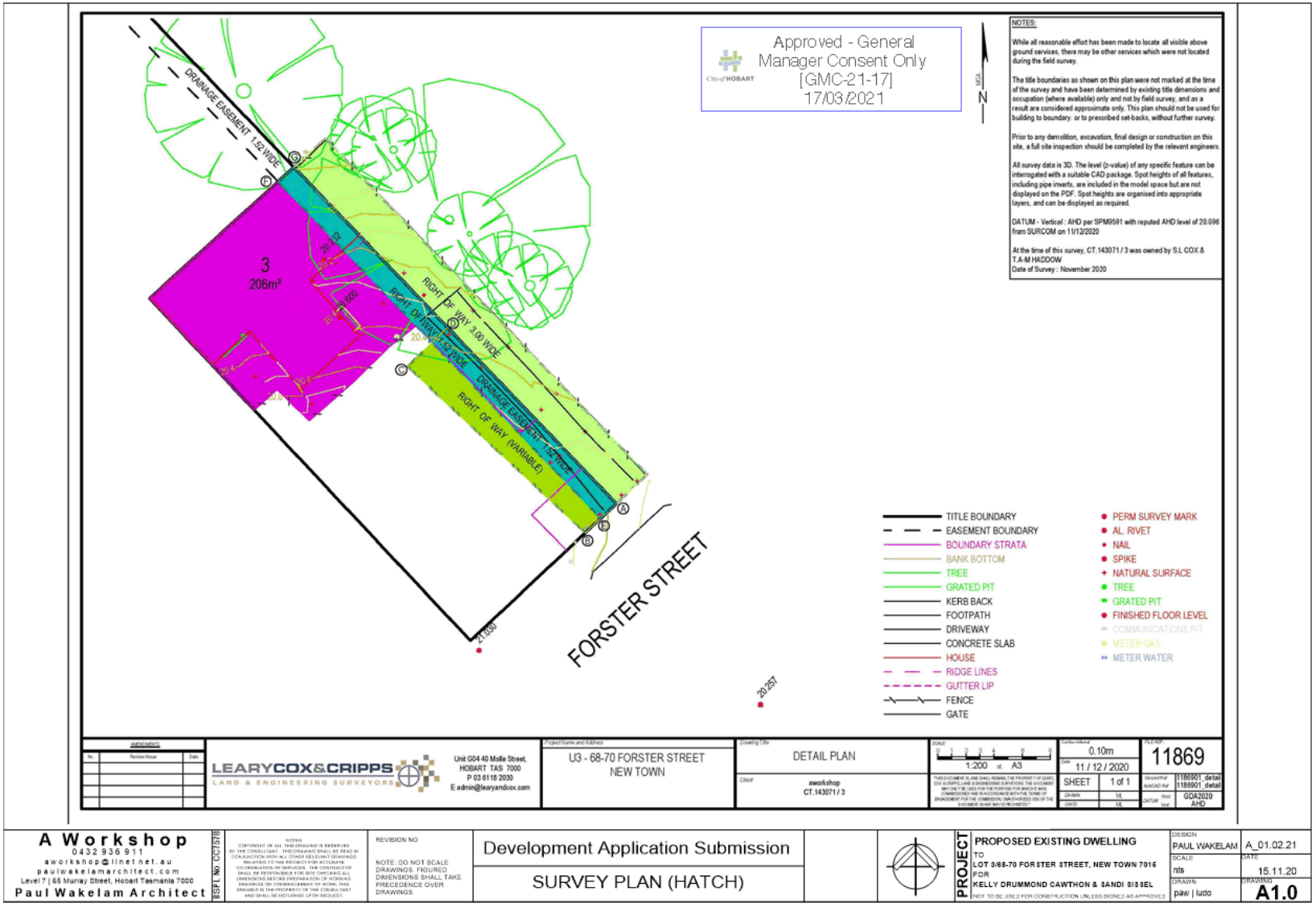
NOTE: DO NOT SCALE DRAWINGS. FIGURED DIMENSIONS SHALL TAKE PRECEDENCE OVER DRAWINGS

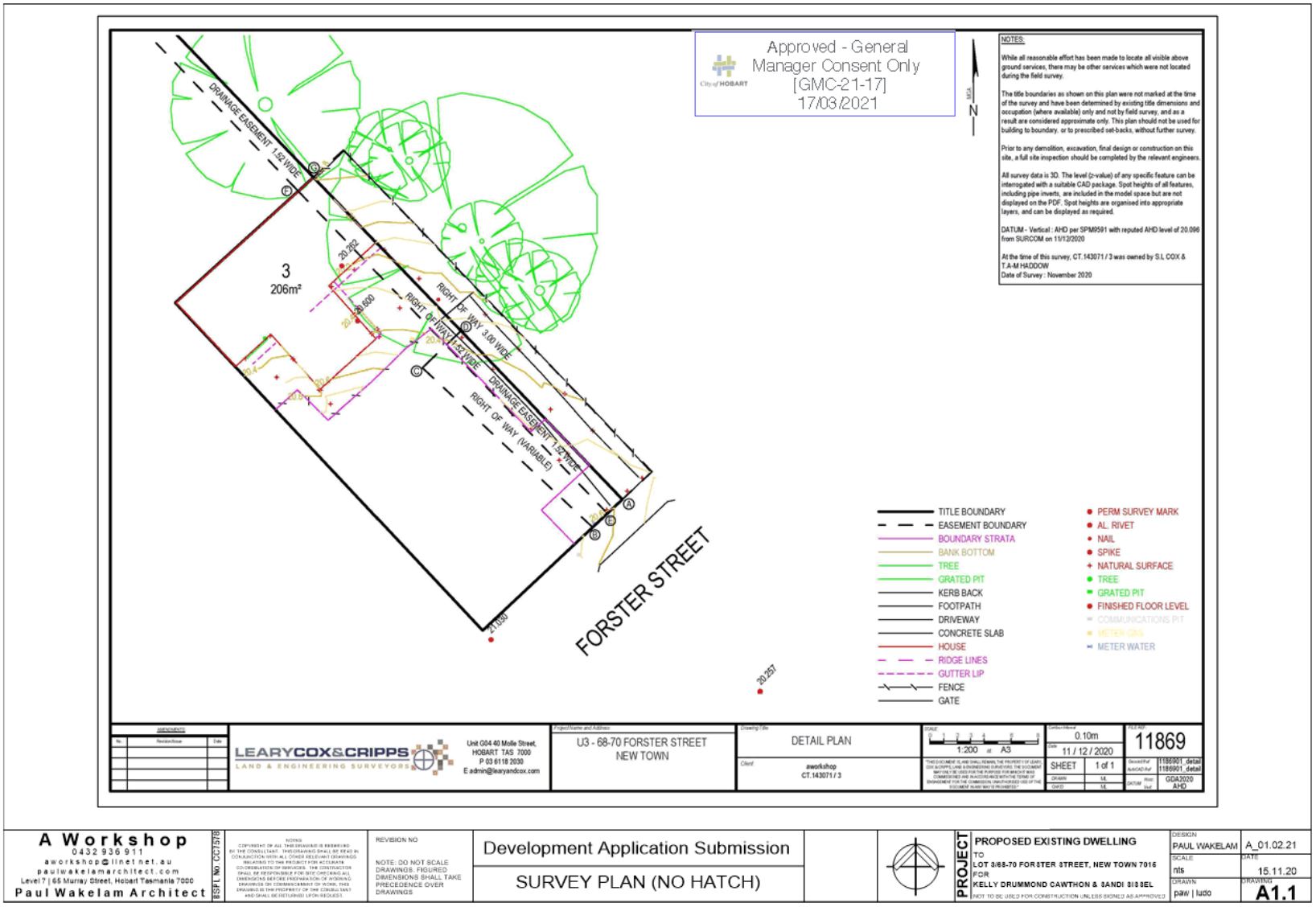
Development Application Submission

FOLIO TEXT & PLAN

PROJECT
PROPOSED EXISTING DWELLING
TO
LOT 3/68-70 FORSTER STREET, NEW TOWN 7016
FOR
KELLY DRUMMOND CAWTHON & SANDI BISSEL
NOT TO BE USED FOR CONSTRUCTION UNLESS SIGNED AS APPROVED

DESIGN PAUL WAKELAM A_01.02.21
SCALE nts DATE 15.11.20
DRAWN paw | ludo DRAWING A0.3


Approved - General Manager Consent Only [GMC-21-17] 17/03/2021
City of HOBART
NOTES:
While all reasonable effort has been made to locate all visible above ground services, there may be other services which were not located during the field survey.
The title boundaries as shown on this plan were not marked at the time of the survey and have been determined by existing title dimensions and occupation (where available) only and not by field survey, and as a result are considered approximate only. This plan should not be used for building to boundary. or to prescribed set-backs, without further survey.
Prior to any demolition, excavation, final design or construction on this site, a full site inspection should be completed by the relevant engineers.
All survey data is 3D. The level (z-value) of any specific feature can be interrogated with a suitable CAD package. Spot heights of all features, including pipe inverts, are included in the model space but are not displayed on the PDF. Spot heights are organised into appropriate layers, and can be displayed as required.
DATUM - Vertical : AHD per SPM9591 with reputed AHD level of 20.096 from SURCOM on 11/12/2020
At the time of this survey, CT.143071 / 3 was owned by S.L COX & T.A-M HADDOW
Date of Survey : November 2020
DRAINAGE EASEMENT 1.52 WIDE
3
206m²
RIGHT OF WAY 3.00 WIDE
RIGHT OF WAY (VARIABLE)
FORSTER STREET
TITLE BOUNDARY
EASEMENT BOUNDARY
BOUNDARY STRATA
BANK BOTTOM
TREE
GRATED PIT
KERB BACK
FOOTPATH
DRIVEWAY
CONCRETE SLAB
HOUSE
RIDGE LINES
GUTTER LIP
FENCE
GATE
PERM SURVEY MARK
AL. RIVET
NAIL
SPIKE
NATURAL SURFACE
TREE
GRATED PIT
FINISHED FLOOR LEVEL
COMMUNICATIONS PIT
METER GAS
METER WATER
LEARYCOX&CRIPPS
LAND & ENGINEERING SURVEYORS
Unit G04 40 Molle Street, HOBART TAS 7000
P 03 6118 2030
E admin@learyandcox.com
U3 - 68-70 FORSTER STREET
NEW TOWN
DETAIL PLAN
aworkshop
CT.143071 / 3
1:200 at A3
0.10m
11 / 12 / 2020
SHEET 1 of 1
11869
GDA2020
AHD
A Workshop
0432 936 911
aworkshop@iinet.net.au
paulwakelamarchitect.com
Level 7 | 65 Murray Street, Hobart Tasmania 7000
Paul Wakelam Architect
MSF1 No: CC7878
REVISION NO
NOTE: DO NOT SCALE DRAWINGS. FIGURED DIMENSIONS SHALL TAKE PRECEDENCE OVER DRAWINGS
Development Application Submission
SURVEY PLAN (HATCH)
PROJECT
PROPOSED EXISTING DWELLING
TO
LOT 3/68-70 FORSTER STREET, NEW TOWN 7016
FOR
KELLY DRUMMOND CAWTHON & SANDI BISEL
NOT TO BE USED FOR CONSTRUCTION UNLESS SIGNED AS APPROVED
DESIGN
PAUL WAKELAM
A_01.02.21
SCALE
nts
DATE
15.11.20
DRAWN
paw | ludo
DRAWING
A1.0



A Workshop
0432 936 911
aworkshop@iinet.net.au
paulwakelamarchitect.com
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Paul Wakelam Architect

MSF1 NO: CC7878

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Development Application Submission

SURVEY PLAN (NO HATCH)

PROJECT

PROPOSED EXISTING DWELLING
TO
LOT 3/68-70 FORSTER STREET, NEW TOWN 7016
FOR
KELLY DRUMMOND CAWTHON & SANDI BISEL
NOT TO BE USED FOR CONSTRUCTION UNLESS SIGNED AS APPROVED

DESIGN: PAUL WAKELAM
SCALE: nts
DRAWN: paw | ludo
DATE: A_01.02.21
15.11.20
DRAWING: A1.1

RESULT OF SEARCH

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

SEARCH OF TORRENS TITLE

VOLUME	FOLIO
143071	0
EDITION	DATE OF ISSUE
1	08-Feb-2005

SEARCH DATE : 24-Feb-2020
SEARCH TIME : 03.12 PM

DESCRIPTION OF LAND

City of HOBART
The Common Property for Strata Scheme 143071
Derivation : Part of Lot 1 (Section A.) Gtd. to C. Jordan.
Prior CT 116983/1

SCHEDULE 1

STRATA CORPORATION NUMBER 143071, 68, 70 & 70A FORSTER STREET, NEW TOWN

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
BENEFITING EASEMENT: Right of Drainage over the drainage easement marked F.G.H.J. on Plan No. 116983
BURDENING EASEMENT: and reserving to Samuel Bridges and to the Trustees of the estates of W.F. Stephens and A.C. Stephens and the owners and occupiers from time to time of the land situate to the North East of the said land within described (hereafter called "the dominant land") in common with Nancy Eva Lincoln her heirs and assigns and the owners and occupiers from time to time of the said land within described full right and liberty at all times hereafter by day or by night and for all purposes with or without horses and other animals carts carriages and other vehicles laden or unladen to go pass and repass in through over along and upon the strip of land marked A.B.C.D. on Plan No. 116983.
Together with the full right and liberty for the owners and occupiers from time to time of the dominant land to repair and mend the roadway on the said strip of land.
RESERVING NEVERTHELESS: unto Joyce Marie Steen and Sarah Olive Burke their respective heirs and assigns as appurtenant to the balance of the land comprised in Indenture Number 32/8000 a right of carriage way over the strip of land marked A.G.F.E. on Plan No. 116983.
C558029 BENEFITING EASEMENT: A right of carriageway over the

RESULT OF SEARCH

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

Right of Way A.G. 3.00 Wide on P.116983 Registered 23-Sep-2004 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

Tasmanian Government

SEARCH OF TORRENS TITLE

VOLUME	FOLIO
40781	1
EDITION	DATE OF ISSUE
3	30-Jun-2015

SEARCH DATE : 17-Sep-2020
SEARCH TIME : 12.45 PM

DESCRIPTION OF LAND

City of HOBART
Lot 1 on Diagram 40781
Being the land firstly described in Conveyance No. 56/1811
Derivation : Part of Lot 1, 0A-1R-36Ps. Gtd. to C. Jordan
Prior CT 4648/58

SCHEDULE 1

HOBART CITY COUNCIL

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
41/3303 CONVEYANCE: Benefiting Easement: Right to pass and repass over the land marked ABCD on Diagram No. 40781
59/8039 GRANT OF EASEMENT: Right of Carriageway (appurtenant to land in Certificate of Title Volume 3849 Folio 74) over the Right of Way 3.00 wide shown on Diagram No. 40781
C558029 BURDENING EASEMENT: A right of carriageway (appurtenant to Lot 1 on P.116983) over the Right of Way 3.00 Wide on D.40781 Registered 23-Sep-2004 at noon

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

FOLIO PLAN

RECORDER OF TITLES

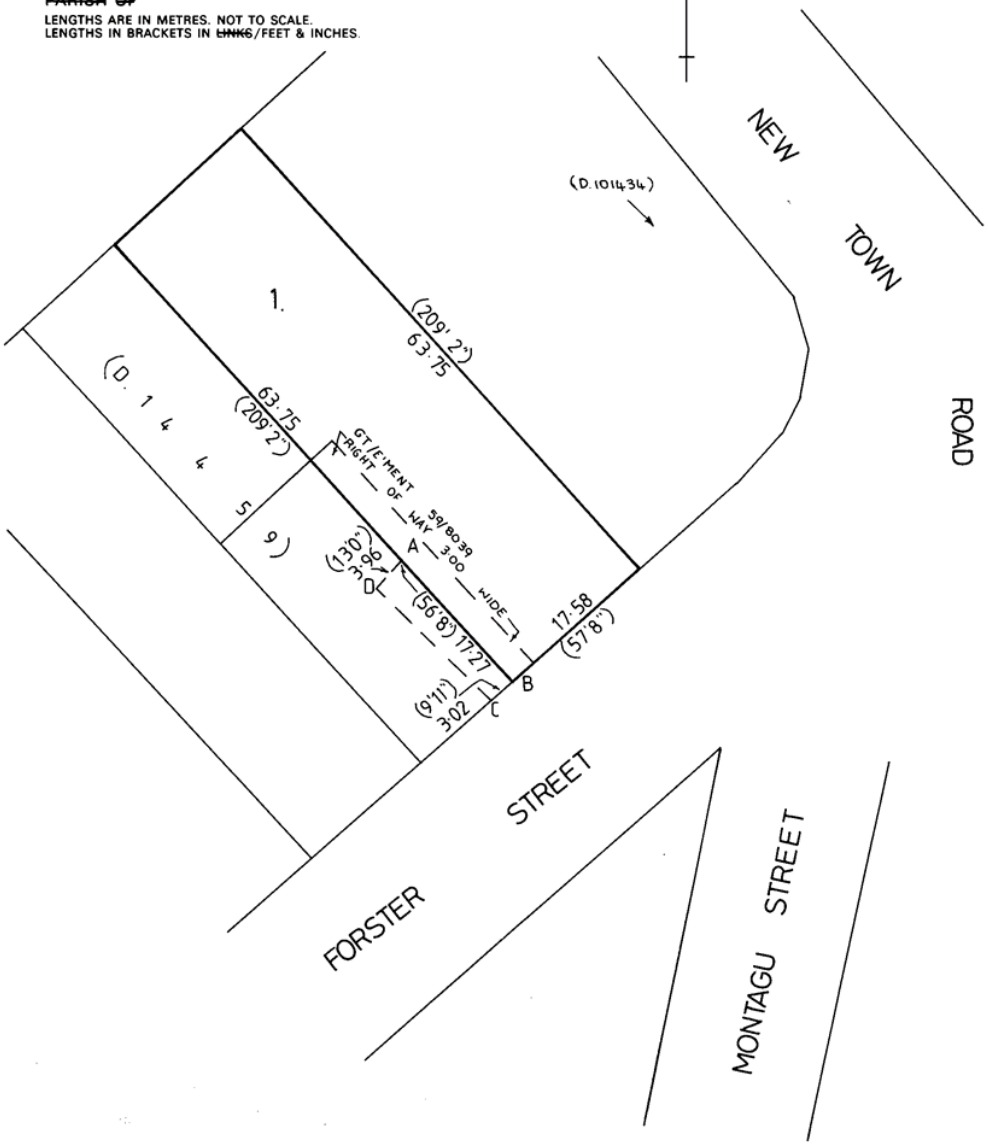
Issued Pursuant to the Land Titles Act 1980

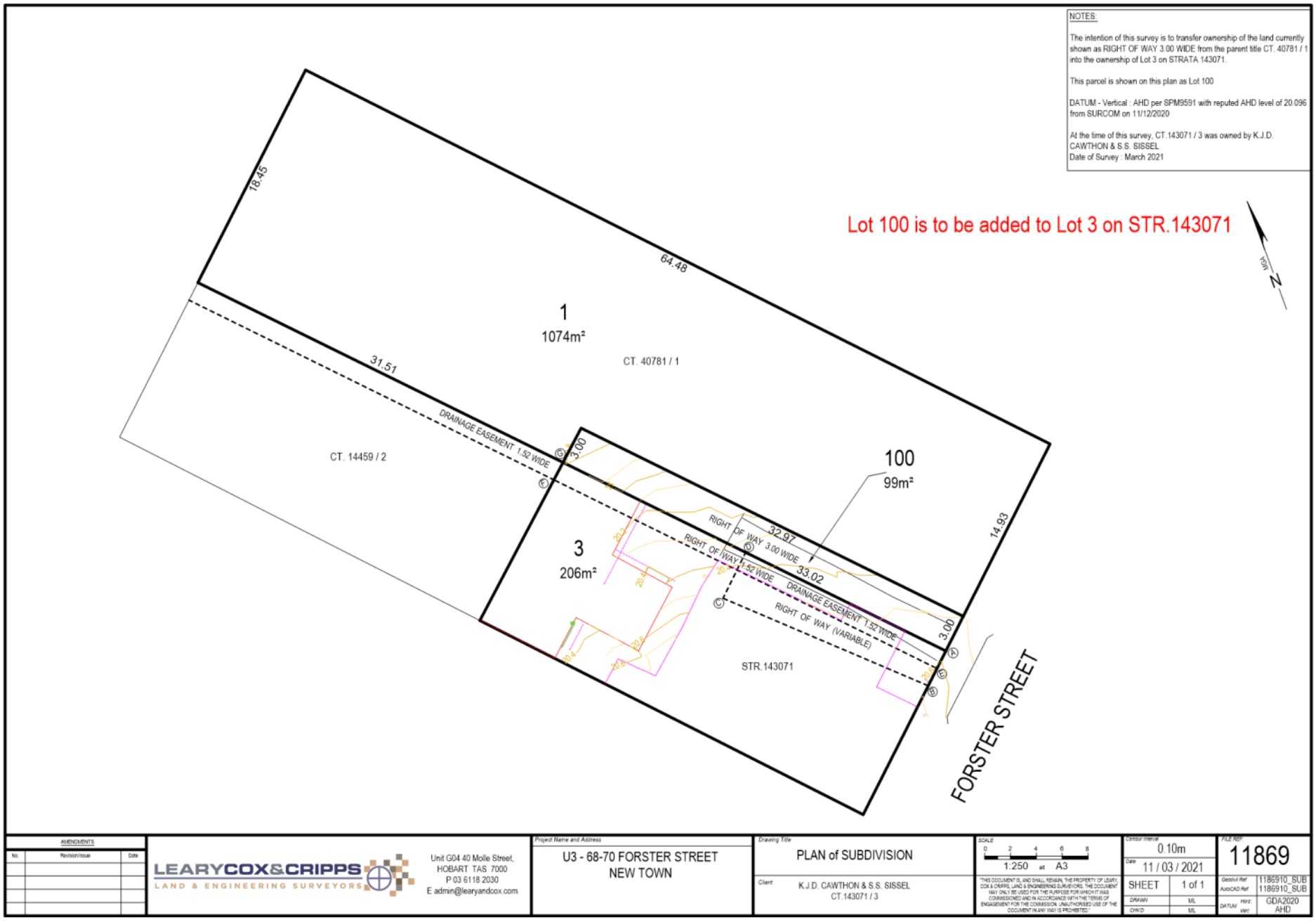
APPROVED ..... RECORDER OF TITLES	CONVERSION PLAN CONVERTED FROM 56/1811 (1STLY DE SC)	REGISTERED NUMBER D.40781
FILE NUMBER A.7898	GRANTEE: PART OF LOT 1, 0-1-36 GTD TO CHARLES JORDAN.	DRAWN Hhoney 1-8-89.

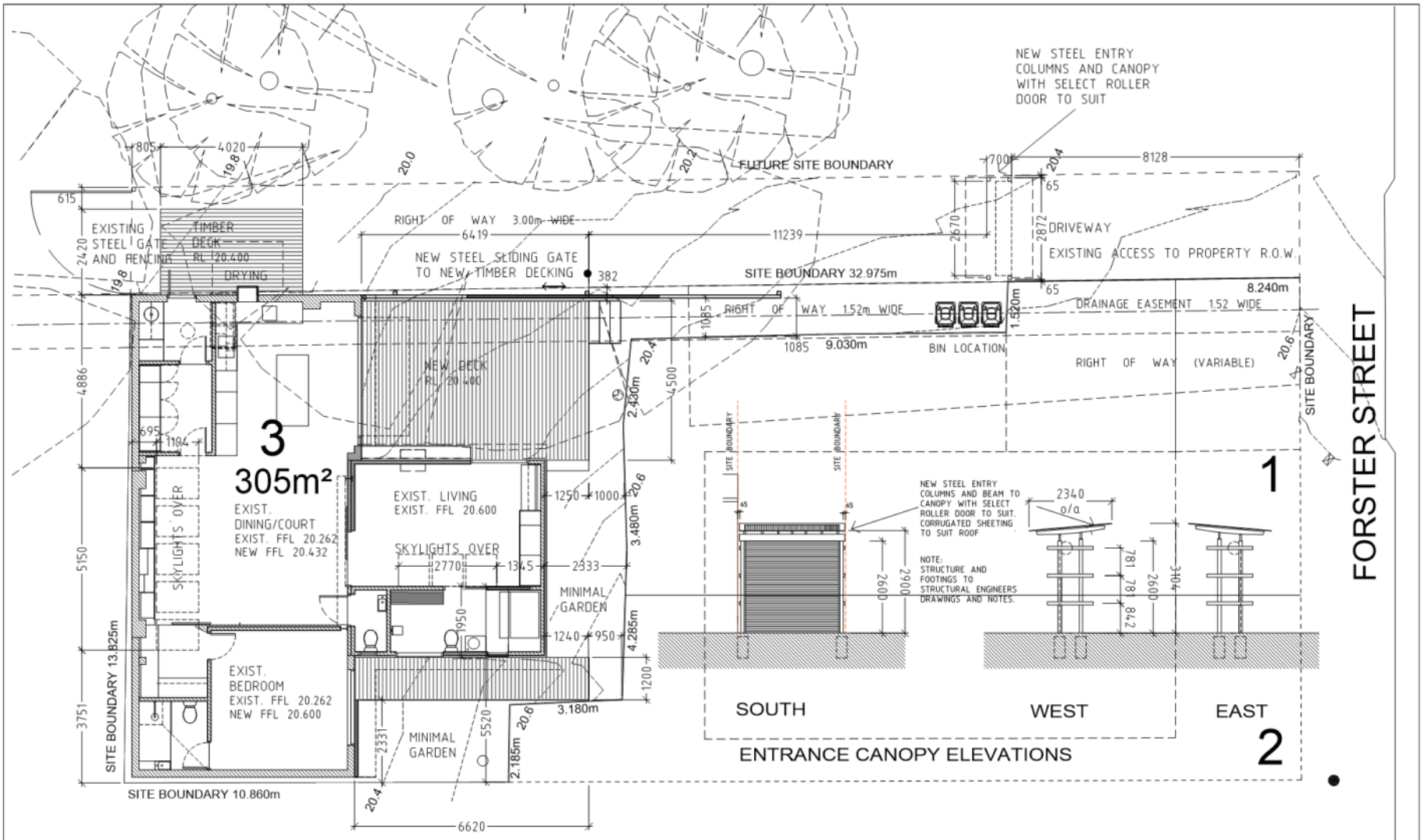
SKETCH BY WAY OF ILLUSTRATION ONLY

CITY/~~TOWN~~ OF HOBART (SEC. A)
~~LAND DISTRICT OF~~
~~PARISH OF~~

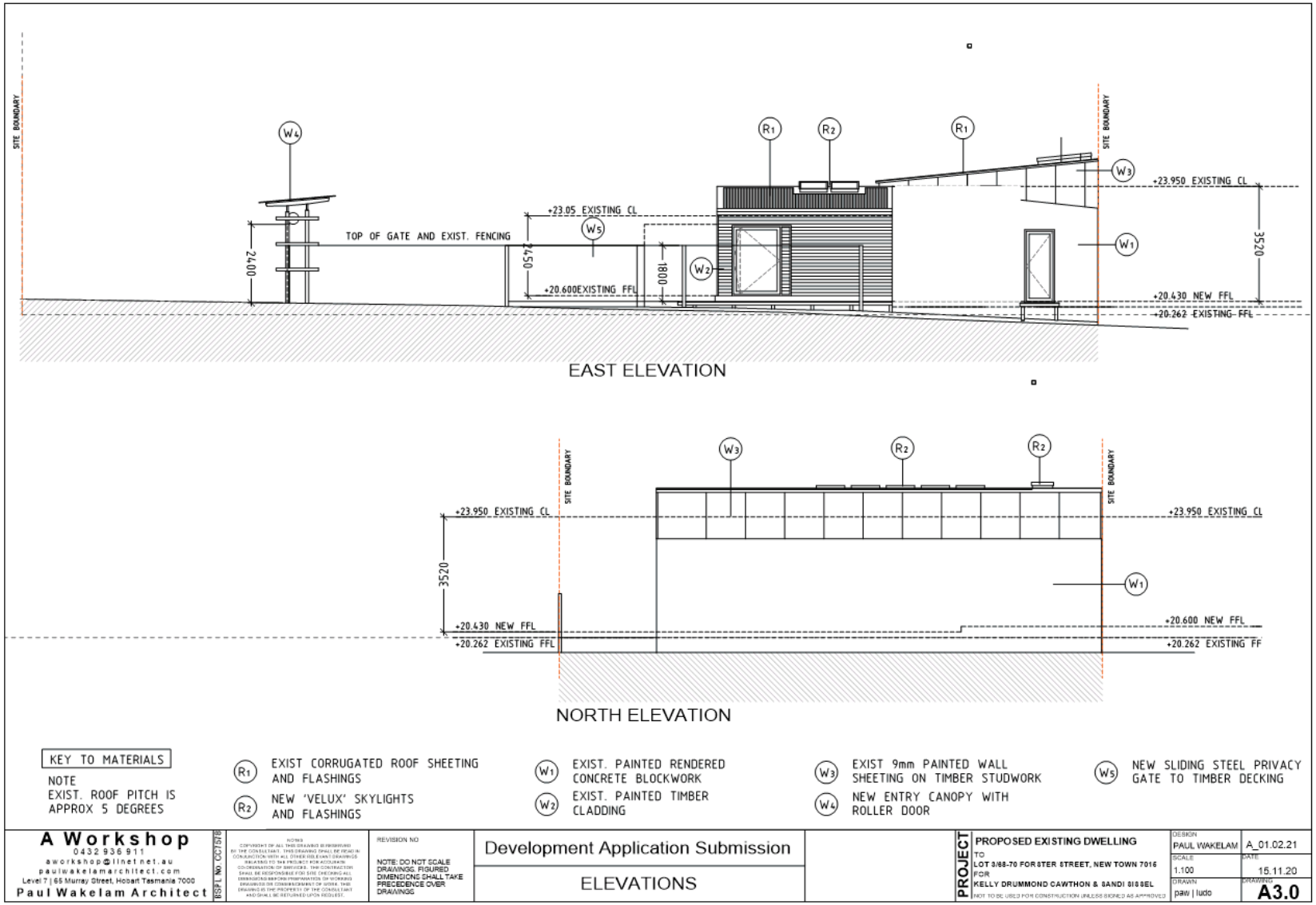
LENGTHS ARE IN METRES. NOT TO SCALE.
LENGTHS IN BRACKETS IN ~~LINKS~~/FEET & INCHES.




NOTES:
The intention of this survey is to transfer ownership of the land currently shown as RIGHT OF WAY 3.00 WIDE from the parent title CT. 40781 / 1 into the ownership of Lot 3 on STRATA 143071.
This parcel is shown on this plan as Lot 100
DATUM - Vertical : AHD per SPM9591 with reputed AHD level of 20.096 from SURCOM on 11/12/2020
At the time of this survey, CT.143071 / 3 was owned by K.J.D. CAWTHON & S.S. SISSEL
Date of Survey : March 2021
Lot 100 is to be added to Lot 3 on STR.143071
MGA
N
18.45
64.48
1
1074m²
CT. 40781 / 1
31.51
DRAINAGE EASEMENT 1.52 WIDE
CT. 14459 / 2
3.00
100
99m²
14.93
3
206m²
RIGHT OF WAY 3.00 WIDE
32.97
RIGHT OF WAY 1.52 WIDE
33.02
DRAINAGE EASEMENT 1.52 WIDE
RIGHT OF WAY (VARIABLE)
3.00
STR.143071
FORSTER STREET
AMENDMENTS
No.
Revision/Issue
Date
LEARYCOX&CRIPPS
LAND & ENGINEERING SURVEYORS
Unit G04 40 Molle Street,
HOBART TAS 7000
P 03 6118 2030
E admin@learyandcox.com
Project Name and Address
U3 - 68-70 FORSTER STREET
NEW TOWN
Drawing Title
PLAN of SUBDIVISION
Client
K.J.D. CAWTHON & S.S. SISSEL
CT.143071 / 3
SCALE
0 2 4 6 8
1:250 at A3
THIS DOCUMENT IS, AND SHALL REMAIN, THE PROPERTY OF LEARY COX & CRIPPS, LAND & ENGINEERING SURVEYORS. THE DOCUMENT MAY ONLY BE USED FOR THE PURPOSE FOR WHICH IT WAS COMMISSIONED AND IN ACCORDANCE WITH THE TERMS OF ENGAGEMENT FOR THE COMMISSION. UNAUTHORISED USE OF THE DOCUMENT IN ANY WAY IS PROHIBITED.
Contour Interval
0.10m
Date
11 / 03 / 2021
SHEET
1 of 1
DRAWN
ML
CHKD
ML
FILE REF
11869
Geodvl Ref
1186910_SUB
AutoCAD Ref
1186910_SUB
DATUM
Horz.
GDA2020
Vert.
AHD



A Workshop 0432 936 911 aworkshop@iinet.net.au paulwakelamarchitect.com Level 7 | 65 Murray Street, Hobart Tasmania 7000 **Paul Wakelam Architect**	BSPL No. CC/578	NOTES COPYRIGHT OF ALL THIS DRAWING IS RESERVED BY THE CONSULTANT. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS RELATING TO THE PROJECT FOR ACCURATE CO-ORDINATION OF SERVICES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SITE CHECKING ALL DIMENSIONS BEFORE PREPARATION OF WORKING DRAWINGS OR COMMENCEMENT OF WORK. THIS DRAWING IS THE PROPERTY OF THE CONSULTANT AND SHALL BE RETURNED UPON REQUEST.	REVISION NO NOTE: DO NOT SCALE DRAWINGS. FIGURED DIMENSIONS SHALL TAKE PRECEDENCE OVER DRAWINGS	Development Application Submission SITE PLAN	PROJECT **PROPOSED EXISTING DWELLING** TO **LOT 3/68-70 FORSTER STREET, NEW TOWN 7015** FOR **KELLY DRUMMOND CAWTHON & SANDI SISSEL** NOT TO BE USED FOR CONSTRUCTION UNLESS SIGNED AS APPROVED	DESIGN: PAUL WAKELAM SCALE: 1.100 DRAWN: paw | ludo D_16.06.21 DATE: 15.11.20 DRAWING: **A1.3**


SITE BOUNDARY
W4
R1
R2
R1
SITE BOUNDARY
W3
+23.950 EXISTING CL
+23.05 EXISTING CL
W5
TOP OF GATE AND EXIST. FENCING
2400
450
1080
W2
W1
3520
+20.600EXISTING FFL
+20.430 NEW FFL
+20.262 EXISTING FFL
EAST ELEVATION
W3
R2
R2
SITE BOUNDARY
SITE BOUNDARY
+23.950 EXISTING CL
+23.950 EXISTING CL
3520
W1
+20.430 NEW FFL
+20.600 NEW FFL
+20.262 EXISTING FFL
+20.262 EXISTING FF
NORTH ELEVATION
KEY TO MATERIALS
NOTE
EXIST. ROOF PITCH IS
APPROX 5 DEGREES
R1 EXIST CORRUGATED ROOF SHEETING AND FLASHINGS
R2 NEW 'VELUX' SKYLIGHTS AND FLASHINGS
W1 EXIST. PAINTED RENDERED CONCRETE BLOCKWORK
W2 EXIST. PAINTED TIMBER CLADDING
W3 EXIST 9mm PAINTED WALL SHEETING ON TIMBER STUDWORK
W4 NEW ENTRY CANOPY WITH ROLLER DOOR
W5 NEW SLIDING STEEL PRIVACY GATE TO TIMBER DECKING
A Workshop
0432 936 911
aworkshop@iinet.net.au
paulwakelamarchitect.com
Level 7 | 65 Murray Street, Hobart Tasmania 7000
Paul Wakelam Architect
RSP1 No: CC7078
REVISION NO
NOTE: DO NOT SCALE DRAWING. FIGURED DIMENSIONS SHALL TAKE PRECEDENCE OVER DRAWING
Development Application Submission
ELEVATIONS
PROJECT
PROPOSED EXISTING DWELLING
TO
LOT 3/68-70 FORSTER STREET, NEW TOWN 7016
FOR
KELLY DRUMMOND CAWTHON & SANDI SIGSEL
NOT TO BE USED FOR CONSTRUCTION UNLESS SIGNED AS APPROVED
DESIGN
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DATE
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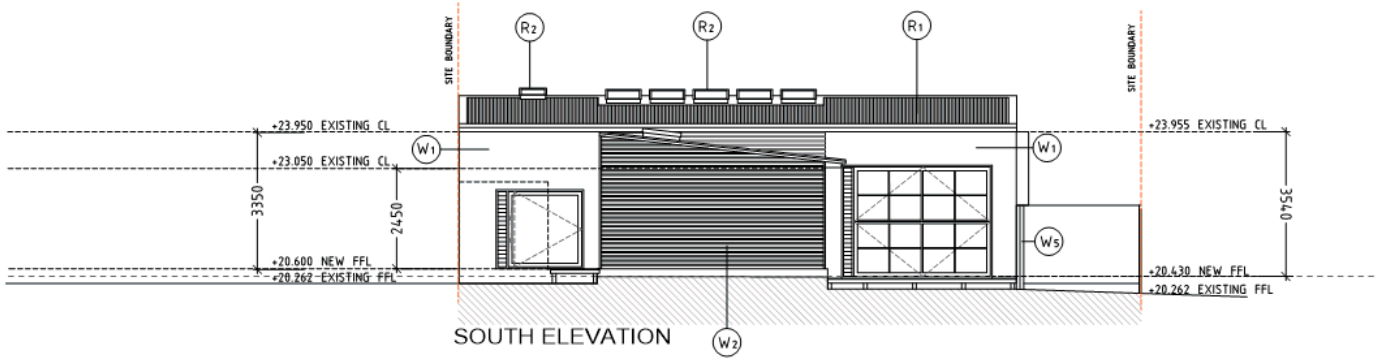
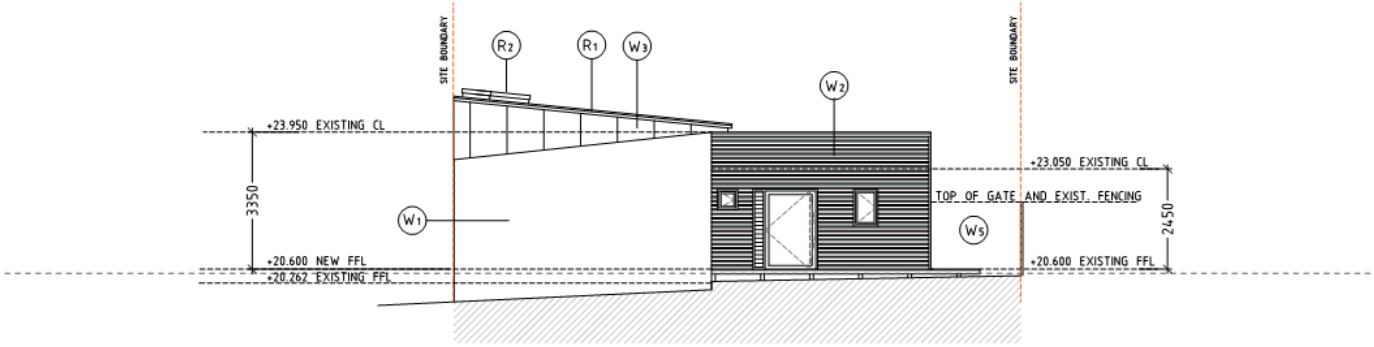


SOUTH ELEVATION



WEST ELEVATION

KEY TO MATERIALS

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A Workshop
0432 936 911
aworkshop@iinet.net.au
paulwakelamarchitect.com
Level 7 | 65 Murray Street, Hobart Tasmania 7000
Paul Wakelam Architect
RSP1 No: CC1078

NOTES
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Development Application Submission

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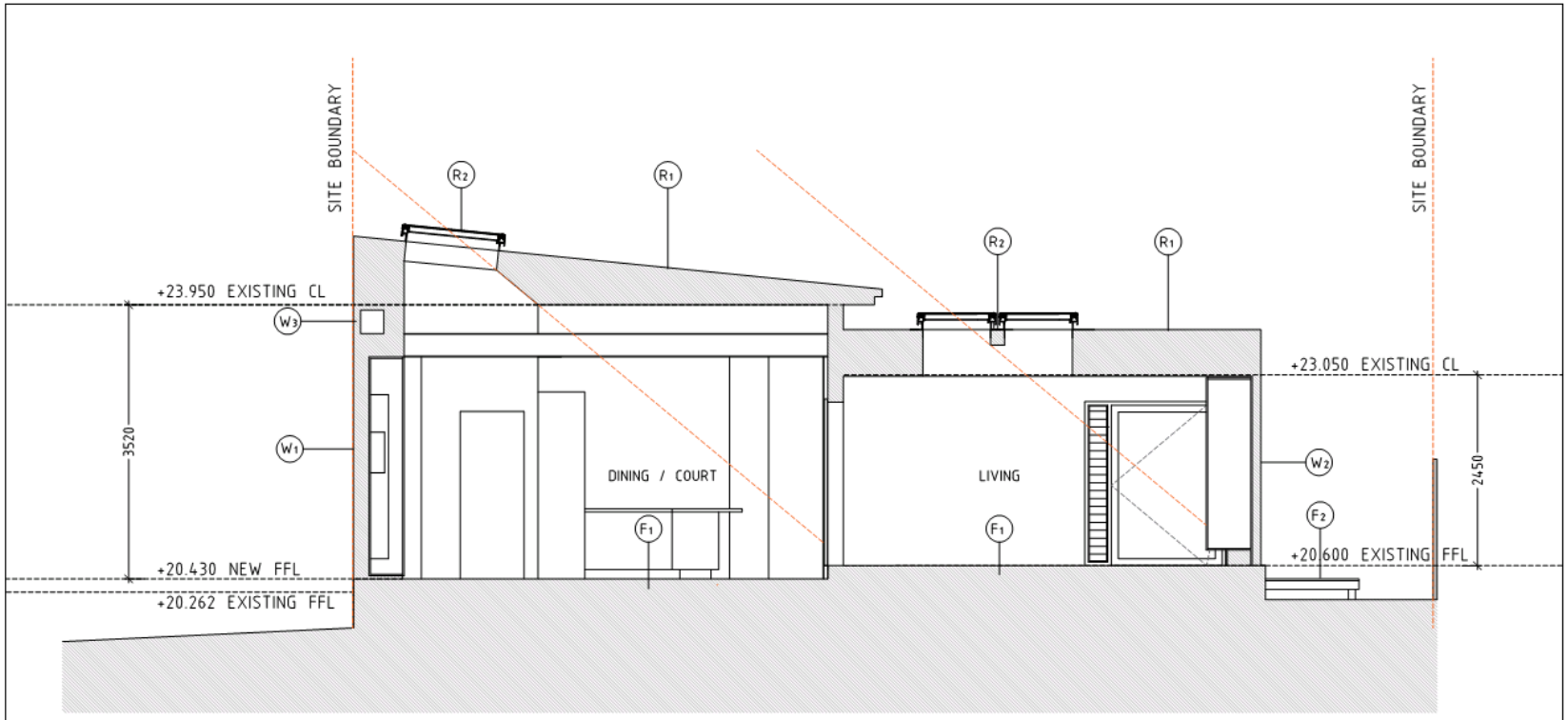

TYPICAL SECTION NORTH - SOUTH

KEY TO MATERIALS

NOTE
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R2 NEW 'VELUX' SKYLIGHTS
W1 EXIST. PAINTED RENDERED CONCRETE BLOCKWORK
W2 EXIST. PAINTED TIMBER CLADDING
W3 EXIST 9mm PAINTED WALL SHEETING ON TIMBER STUDWORK
F1 SELECT TIMBER FLOOR
F2 SELECT TIMBER DECK

A Workshop
0432 936 911
aworkshop@linet.net.au
paulwakelamarchitect.com
Level 7 | 65 Murray Street, Hobart Tasmania 7000
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Development Application Submission

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DATE	15.11.20
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Application Referral Cultural Heritage - Response

From:	Megan Baynes
Recommendation:	Proposal is acceptable without conditions.
Date Completed:	
Address:	3 / 68 - 70 FORSTER STREET, NEW TOWN 72 FORSTER STREET, NEW TOWN
Proposal:	Alterations and Subdivision (Boundary Adjustment)
Application No:	PLN-21-321
Assessment Officer:	Cameron Sherriff,

Referral Officer comments:

This application relates to modifications to a freestanding existing dwelling at the rear of a double storey conjoined historic house.

The Houses an No's 68 and 70 Forster Street are double storey conjoined Georgian/Victorian masonry buildings. The historic houses have been extended at the rear with single storey rooms. The current application relates to a third dwelling which has been built several meters from the rear of the houses at 68-70 Forster Street.

This property has a valid planning permit for a dwelling and the proposed development includes minor changes includes skylights and screening. Because a subdivision has been triggered - the proposed development must be assessed against E 13.7.3. The proposed change to the title is the addition of a small area of land to create vehicular access.

The proposed subdivision will not alter the sense of curtilage to the historic houses - which has via previous extensions and placement of the 3rd dwelling been compromised. The proposed screens and skylights are considered to be acceptable in terms of design, height, scale, bulk, form, fenestration, siting, materials colours and finishes. The proposed elements are subservient and complementary.

Reps
Council received one representation which queried the timing of the removal of large matures trees on adjacent land. There is no evidence to suggest these trees are historically significant, but they are a council asset and possibly an important habitat for wildlife.

The impact on the heritage assets is considered acceptable. The proposed development satisfies E 13.7.1 P1 and E 13.7.2 P1, P2, and P4 and E 13.7.3. Development is behind a conjoined double storey existing building. Changes to fences and front garden are not being proposed therefore the impact on the heritage precinct would be limited to any long term changes to the health of the large trees on the adjacent Council owned land. E 13.8.1 P1, E 13.8.2 P1 & P3 and E 13.8.3 P1 are met.

MB
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07
2021

8 REPORTS

8.1 Southern Tasmania Regional Land Use Strategy Amendment Proposal - Cygnet Township File Ref: F21/72190

Report of the Development Planner of 27 July 2021 and attachments.

Delegation: Council

REPORT TITLE: **SOUTHERN TASMANIA REGIONAL LAND USE STRATEGY AMENDMENT PROPOSAL - CYGNET TOWNSHIP**

REPORT PROVIDED BY: Development Planner
Director City Planning

1. Report Purpose and Community Benefit

1.1. The purpose of this report is to consider a request from Huon Valley Council to support an amendment to the growth management strategies for settlements under the Southern Regional Land Use Strategy 2010-2035 (STRLUS).

1.1.1. The report benefits the community by considering the appropriate development of land within the southern region.

2. Report Summary

2.1. Huon Valley Council has requested the support of all southern region councils for a proposed amendment to the STRLUS.

2.2. The amendment would allow further land within the boundaries of the Cygnet township to be rezoned and developed for residential purposes.

2.3. Cygnet township has already exceeded its growth management strategy, and Huon Valley Council considers the amendment to be necessary to meet residential demand and prevent urban sprawl and fragmentation of agricultural land.

2.4. As Cygnet is not considered to be a commuter suburb for Hobart, the amendment is unlikely to have a direct impact on the achievement of the City of Hobart's strategic settlement approach.

2.5. It is recommended that Council advise the Huon Valley Council that it has no objection to the proposed STRLUS amendment.

3. Recommendation

That:

1. The Council advises the Huon Valley Council that it has no objection to Huon Valley Council's proposal to amend the growth management strategy for Cygnet township under the Southern Regional Land Use Strategy 2010-2035.

4. Background

4.1. Huon Valley Council submitted a letter (**Attachment A**) to the City of Hobart requesting support for an amendment to the STRLUS.

4.2. The Minister for Local Government and Planning requires endorsement from all southern councils before considering a STRLUS amendment request.

4.3. The amendment proposes a new footnote under the STRLUS table that sets growth management strategies for settlements outside greater Hobart. The footnote would state:

For the Cygnet Township, the growth strategy does not preclude residential growth through rezoning of existing urban land within the established settlement boundaries if supported by residential land supply and demand data analysis from a suitably qualified person.

4.4. Cygnet is currently identified as having a 'moderate' growth strategy with a 'mixed' growth scenario. This allows for a 10 to 20 per cent increase in the number of dwellings over 25 years, achieved through a mix of greenfield and infill development.

4.5. Supporting documents (**Attachments B and C**) suggest that Cygnet has already exceeded the moderate growth strategy set by the STRLUS, 15 years earlier than forecast.

4.6. The proposed amendment would allow for further residential rezoning and development within the township boundaries.

4.7. The Huon Valley Council's reasoning for the proposal includes:

4.7.1. The STRLUS growth strategy for Cygnet has not been amended since the strategy commenced.

4.7.2. The acute shortage of residential land within the boundary of the Cygnet township is risking urban sprawl and fragmentation of agricultural land in the area.

4.7.3. The STRLUS promotes consolidation of existing settlements and minimisation of urban sprawl and lower density development.

4.7.4. Due to the anticipated strong level of growth in Cygnet over the next 15 years (**Attachment C**), an amendment to the STRLUS is necessary.

5. Proposal and Implementation

5.1. The proposal is to consider a request from Huon Valley Council to support an amendment to the growth management strategy of the Cygnet township.

5.2. While the STRLUS controls residential settlement in greater Hobart through the Urban Growth Boundary, it controls residential settlement in other areas of the region through growth management strategies.

5.3. Amendments to the Urban Growth Boundary may have an impact on the achievement of the greater Hobart settlement strategy. Cygnet, however, is not primarily considered to be a commuter suburb for Hobart and the additional growth is mainly expected to impact the Huon Valley area.

5.4. The amendment to the Cygnet growth management strategy is not considered likely to have a direct impact on the achievement of the City of Hobart's strategic settlement approach.

5.5. It is therefore recommended that Council advise it has no objection to the proposed STRLUS amendment.

6. Strategic Planning and Policy Considerations

6.1. As this issue relates to land in another municipal area, the City's strategic goals, policies and documents are not directly applicable.

7. Financial Implications

7.1. Funding Source and Impact on Current Year Operating Result

7.1.1. None

7.2. Impact on Future Years' Financial Result

7.2.1. None

7.3. Asset Related Implications

7.3.1. None

8. Legal, Risk and Legislative Considerations

8.1. Proposals for amendments to the STRLUS are guided by an information sheet – 'RLUS 1'.

8.2. RLUS 1 requires amendments to the STRLUS to demonstrate they:

8.2.1. Further the Schedule 1 Objectives of LUPAA.

8.2.2. Are in accordance with State Policies made under section 11 of the *State Policies and Projects Act 1993*,

8.2.3. Are consistent with the Tasmanian Planning Policies, once they are made.

8.2.4. Meet the overarching strategic directions and related policies in the regional land use strategy.

8.3. The Minister for Local Government and Planning will determine whether the proposal meets the requirements of RLUS 1.

8.4. It is not considered the proposal poses any direct risks to Council.

9. Environmental Considerations

9.1. Any environmental considerations of this proposal will be considered by the Minister for Local Government and Planning.

10. Social and Customer Considerations

10.1. This proposal has no impact on social inclusion.

11. Marketing and Media

11.1. There are no marketing or branding implications of this proposal.

12. Community and Stakeholder Engagement

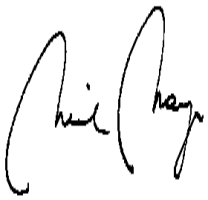
12.1. No community or stakeholder engagement is required by the City of Hobart.

13. Delegation

13.1. Delegation rests with the Council.

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.

Sarah Crawford
DEVELOPMENT PLANNER



Neil Noye
DIRECTOR CITY PLANNING

Date: 27 July 2021
File Reference: F21/72190

Attachment A: Letter from Huon Valley Council ⇩
Attachment B: Huon Valley Council report ⇩
Attachment C: Residential demand and supply analysis ⇩

HUON VALLEY COUNCIL

40 Main Street, Huonville
PO Box 210, Huonville 7109
hvc@huonvalley.tas.gov.au
ph: (03) 6264 0300
ABN: 77 602 207 026

Enquiries to: Michael Bartlett(Manager Development Services

Date: 4 May 2021

Mr Tim Short
Acting General Manager
City of Hobart

Via email: hcc@hobartcity.com.au

Dear Mr Short

Re: Request to amend the Southern Tasmania Regional Land Use Strategy 2010-2035 – Growth Strategy, Cygnet

At the Huon Valley Council (HVC) meeting of 31 March 2021 Council resolved to seek an amendment to the Southern Tasmania Regional Land Use Strategy 2010-2035 (STRLUS) to include the following footnote under *Table 3 Growth Management Strategies for Settlements:*

***For the Cygnet Township, the growth strategy does not preclude residential growth through rezoning of existing urban land within the established settlement boundaries if supported by residential land supply and demand data and analysis from a suitably qualified person.*

As outlined within the attached reports the moderate growth strategy for Cygnet that is within the STRLUS has already been exceeded and there is an acute shortage of residential land within the urban growth boundary of Cygnet to accommodate demand. Subsequently this is placing risk of urban sprawl and fragmentation of agricultural land.

The proposed amendment to the STRLUS will help to resolve this matter by allowing current and accurate residential land supply and demand data to be considered for applications that request rezoning to support residential growth within the Cygnet urban growth boundaries.

The Minister for Planning has requested that the HVC seek endorsement for this amendment to the STRLUS from all councils within the Southern Region, in the form of a Council resolution.

The related Council Report and the most relevant attachment to that report (SGS supply and demand analysis) are attached to this email. If you require the full suite of attachments these are available at: www.huonvalley.tas.gov.au/council/meetings/ - 31 March 2021 Minutes.

If you have any queries in relation to this matter please contact Michael Bartlett (6264 0353 or mbartlett@huonvalley.tas.gov.au). Thank you for your assistance in this matter.

Yours sincerely

LUKE CHIU
DIRECTOR ENVIRONMENT AND DEVELOPMENT SERVICES

Title	**AMENDMENT TO THE SOUTHERN TASMANIAN REGIONAL LAND USE STRATEGY (2010-2035)**
Agenda Number	17.007/21*
Strategic Plan Reference	5
File Reference	17/74
Author	Manager Development Services
Responsible Officer	Director Environment and Development Services
Reporting Brief	The Director Environment and Development Services presenting a report an amendment to the *Southern Tasmanian Regional Land Use Strategy (2010-2035)*
Attachments	A. *Southern Tasmanian Regional Land Use Strategy (2010-2035)* B. *Information Sheet – Reviewing and Amending the Regional Land Use Strategies* C. *Cygnet Residential Demand and Supply Analysis Report, 2020* D. *Huon Valley Land and Development Strategy - Cygnet Strategy map* E. *Letter to Huon Valley Council Mayor from the Minister of Planning and attachments (2020)* *E1: Roadmap Summary* *E2: Roadmap Background Report*

Background

1. The purpose of this report is to seek Council endorsement for an amendment to the *Southern Tasmanian Regional Land Use Strategy (2010-2035)* (Regional Strategy; STRLUS) that relates to the township of Cygnet. A description of the Cygnet Township area is set out below.

2. The Regional Strategy is a broad statutory based strategic planning policy that applies to Southern Tasmania under the *Land Use Planning and Approvals Act 1993* (Act) (Attachment A). The most recent revision of the strategy is the version dated 19 February 2020. The following is stated on page 1 of the strategy:

The Regional Strategy is intended to be a broad policy document that will facilitate and manage change, growth, and development within Southern Tasmania over the next 25 years

3. A summary of the strategic planning policy framework established by the Regional Strategy is set out in Attachment B. This Information Sheet issued by the Planning Policy Unit (Department of Justice) includes the following statement.

   The Land Use Planning and Approvals Act 1993 (LUPAA) provides for the preparation and declaration of regional land use strategies, which provide an important high-level component of the planning system. Essentially, the regional land use strategies provide the linkage between the Schedule I objectives of LUPAA, State Policies established under the State Policies and Projects Act 1993, and the future Tasmanian Planning Policies with the current interim and future Tasmanian planning schemes. They provide the mechanism by which the strategic directions of the State and each region are implemented through the land use planning system.

4. Since the commencement of the Regional Strategy in October 2011, the strategy has applied a *moderate growth strategy* to the township of Cygnet. This growth strategy has not been amended since the Regional Strategy commenced.

5. When the Regional Strategy commenced in 2011, application of the *moderate growth strategy* equated to 70 new dwellings being constructed in the Cygnet Township over the 25 year period of the strategy that obtained an Occupancy Permit based on the number of dwellings at that time in the township. However, in 2020 the number of new dwellings constructed in the township exceeded this projection. Therefore, this meant the projected number of new buildings to be built in the township had been reached 15 years earlier than forecast.

6. In 2020 Council arranged for a supply and demand analysis of residential land within the township to be carried out by SGS Economics and Planning (Attachment C). This report includes planning and other advice regarding:
   - Current and future population projections for Cygnet;
   - Current supply capacity of the township for residential zoned land;
   - Projected demand for residential land in the township to 2036; and
   - The supply capacity of the township to meet that projected demand for residential land to 2036.

7. An amendment to the Regional Strategy is considered necessary based on the planning and other advice in the SGS Report, and in particular, its advice on the anticipated level of residential growth in the township over the next 15 years resulting from projected demand for new residential dwellings.

8. As set out below, the proposed amendment to the Regional Strategy is limited in its application as it is to relate only to growth strategy (*moderate growth strategy*) considerations under the strategy specific to Cygnet. That is, the amendment is not proposed to have broader application beyond Cygnet.

9. In 2020 the Minister of Planning released a 'Roadmap' for review of the Regional Strategy which includes a range of short to long term land use planning projects (Attachment E). In the accompanying documentation forwarded to Council the following is stated:

   …There is increasing concern in the southern region that the Southern Tasmanian Regional Land Use Strategy (STRLUS) is out of date and not necessarily reflective of current planning issues. There are also ongoing calls for adjustments to the Urban Growth Boundary set out in the STRLUS and a review of the settlement policies for each of the designated regional towns and settlements…

   The other key element in relation to the STRLUS is the broadly held view that the data upon which it is based is out of date, although there appears to be little disagreement with the fundamental strategic directions it proposes…

10. Whilst the Roadmap is a good initiative as it will be a further opportunity for a review of settlement policies for the townships in the Huon Valley, for the reasons set out in the report and the SGS Report it is considered very important that in the meantime that the proposed amendment to the Regional Strategy is made.

Council Policy

11. Council does not have a specific policy relating to amending the Regional Strategy.

12. The policy requirements of the Regional Strategy are taken into account by Council when making decisions as a planning authority when required.

Legislative Requirements

13. Section 5AA of the Act sets out legislative requirements for the regional strategies. A regional land use strategy for a regional area and amendments to a strategy can be declared by the Minister of Planning under the Act.

14. Section 30O of the of the Act (the former provisions that are still in place for Interim Planning Schemes) requires that planning scheme amendments must be, *as far as reasonably practicable, consistent* with the Regional Strategy.

Risk Implications

15. There is a risk that failing to make the proposed amendment to the Regional Strategy will result in out of date and inaccurate growth data for the township of Cygnet being utilised and relied upon for planning decisions. Subsequently this places risks of urban sprawl and fragmentation of agricultural land due to an inability to provide sufficient residential land within the township's urban growth boundaries: see further the SGS report – Attachment C.

Engagement

16. Engagement associated with this decision will be undertaken at Inform Level by inclusion within the Council meeting Minutes that will be available to the public on the Council's website and at the Customer Service Centre.

17. As set out in Attachment B, Council should obtain written endorsement for the proposed amendment from all other planning authorities in Southern Tasmania, and also consult with relevant State Government agencies and State authorities on the proposal. Therefore, if Council decides to seek approval from the Minister for Planning for the amendment to be made, that as part of that process it is recommended Council obtains the support from other planning authorities for the amendment as part of the process.

18. Also as part of the process, under the Act the Minister for Planning is required to consult with the Tasmanian Planning Commission, planning authorities, and relevant State Service agencies (e.g. Department of State Growth) and State authorities (e.g. TasNetworks) on the amendment: Section 5A(4).

Human Resource and Financial Implications

19. This Report does not raise any Human Resource or Financial Implications for the Council beyond internal officer time that falls within existing budget allocations.

Discussion

20. The wording of the proposed amendment to the Regional Strategy is set out below, and is proposed to be added to Table 3 on page 89 as a further footnote to that table as follows:
***For the Cygnet Township, the growth strategy does not preclude residential growth through rezoning of existing urban land within the established settlement boundaries if supported by residential land supply and demand data and analysis from a suitably qualified person.*

21. The amendment is relevant to planning scheme applications for amendments to the *Huon Valley Interim Planning Scheme 2015* currently under consideration by the Council and the Tasmanian Planning Commission.

Cygnet Township area

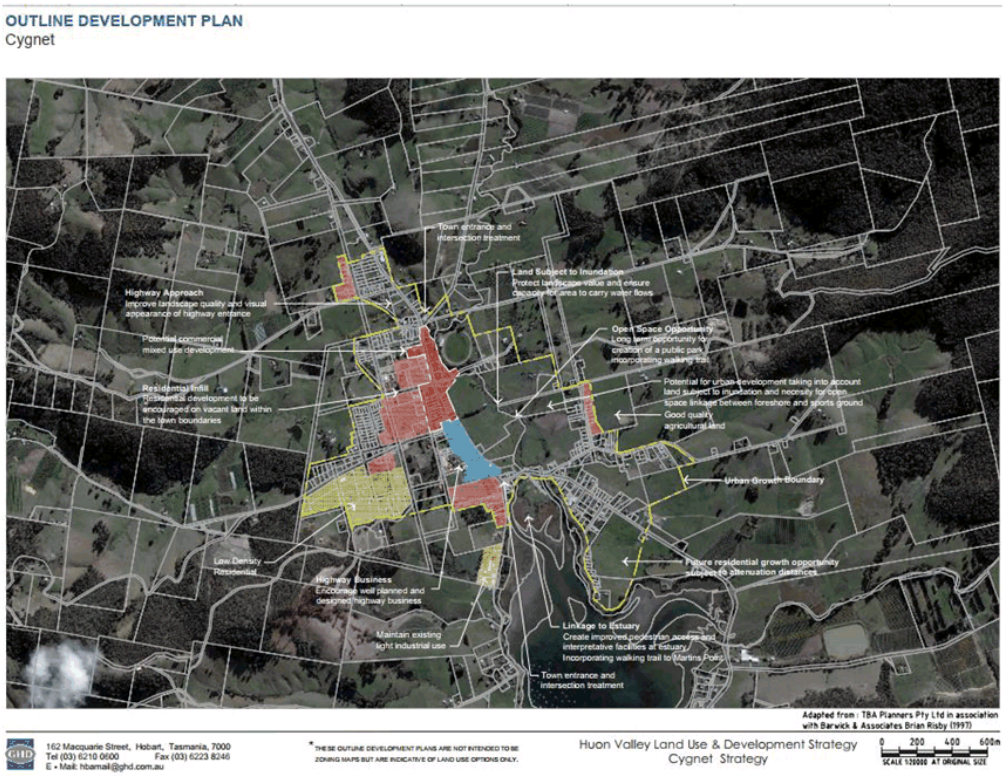
22. Cygnet is classified as a 'Township' in Table 3 in the Regional Strategy (page 89). The characteristics of a Township are set out in Table 2 of the strategy (page 87). A Township area excludes any surrounding rural living areas.

23. **Table 1:** *Extract from Table 2, Regional Strategy (page 87)*

TOWNSHIP	
Description	Townships are residential settlements with prominent town centres providing a number of facilities, some local employment opportunities and convenience shopping.
Population*	500 to 1500 (excluding any surrounding rural living areas)
Utility Connections	Electricity. May have reticulated water and sewerage if existing
Services	See Activity Centre Network: Town Centre

24. The *Huon Valley Land Use & Development Strategy* was endorsed by Council in 2007 includes the Cygnet Strategy map (Attachment D). The Cygnet Strategy map shows the Urban Growth Boundary (UGB) for Cygnet which is outlined in yellow on the map below.

25. The UGB area on the Cygnet Strategy map has been used for the residential supply and demand analysis and is referred to in the SGS Report.



Plan 1: *Cygnet Strategy map - Huon Valley Land Use and Development Strategy*

Cygnet Township area - Urban Centre and Locality (UCL) mapped area

26. For the purposes of Table 3 of the Regional Strategy, the UCL area as a mapped LISTmap layer, is considered to represent the Cygnet Township area. This is because the UCL area aligns more closely with the Cygnet residential Planning Scheme zones than the UGB mapped area.

27. The UCL area is shown on the following map (Image 1). The map also shows land within the UCL area that is zoned General Residential (red) and land that is subject to other zones.

28. The Cygnet UCL area on the Cygnet Strategy map has also been used for the residential supply and demand analysis and is referred to in the SGS Report.

Regional Strategy

29. In Section 19.5.2, the Regional Strategy states:

"The growth management strategies for the settlements across the region are divided into four categories as follows (the percentage growth is calculated as the percentage of the number of dwelling existing at the declaration date that can occur across the 25 year planning period)"…

30. The growth management strategy for the township of Cygnet is specified as: *Moderate Growth - 10% to 20% increase in no. of potential dwellings*. The growth management strategy is considered against the growth scenario. (Regional Strategy: page 86. Table 3)

31. The growth scenarios are categorised into *mixed* and *consolidation* scenarios. The Regional Strategy states:

*A mixed growth scenario indicates that residential growth should come from a mix of both greenfield and infill circumstances and that expansion of the residential zone may be required dependent upon an assessment of the yield capacity and vacancy of existing zoned land…(*page 86)

32. From its commencement in 2011, under the *Settlement and Residential Development Policy* (Section 19.5.2; page 86) and by Table 3, the Regional Strategy specified Cygnet as a Township with a *moderate growth strategy* (10% - 20% increase in dwellings over 25 years) and *mixed growth scenario* (residential growth from both greenfield and infill development).

33. Table 1: *Summary of Growth Strategy and Growth Scenario – Cygnet*

SETTLEMENT	***GROWTH STRATEGY***	***GROWTH SCENARIO***
Cygnet Township	*Moderate*	*Mixed*

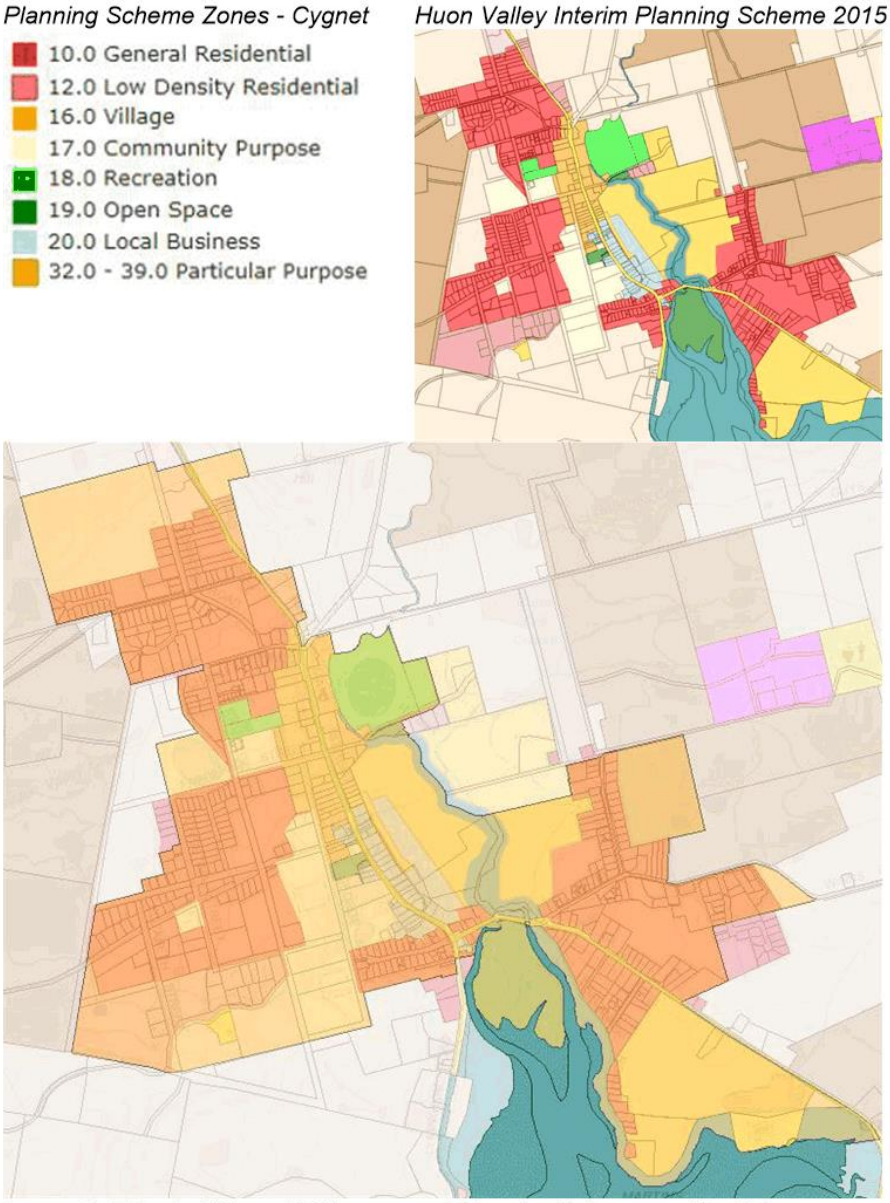


Image 1: *Extent of Cygnet UCL area and Planning Scheme residential zones and other image extracts: LISTmap*

34. The summary in the following table for the UCL area for Cygnet shows the increase in the number of residential dwellings in the Cygnet UCL area between October 2011 and 30 January 2020 based on Council records. The Table below shows there were 352 residential buildings in the UCL area in October 2011 completed to building occupancy stage following the issue of an Occupancy Permit.

35. **Table 2**: *Residential buildings and vacant land (UCL), Cygnet October 2011 – January 2020*

UCL Land	**UCL Land**
17/10/2011	30/1/2020
Residential buildings (Occupancy Permit issued for a dwelling; land then classified as *non-vacant residential* land)	Residential buildings (Occupancy Permit issued for a dwelling; land then classified as *non-vacant residential* land)
352	**434**
	+82 dwellings
Vacant residential land (land classified as *vacant residential* land)	Vacant residential land (land classified as *vacant residential* land)
66	**59**
	-7 vacant lots

Council data 2020

36. The application of the *moderate growth strategy* equated to a projection of 70 new dwellings being constructed in the Cygnet Township over the 25 year period of the strategy that obtained an Occupancy Permit based on the number of dwellings within the township in October 2011 when the strategy commenced. See further the SGS Report.

37. The SGS Report states in relation to the Regional Strategy:

> *The moderate growth strategy in the STRLUS refers to an anticipated growth of 10 to 20 per cent of dwellings. A mixed growth scenario indicates that residential growth should come from a mix of both greenfield and infill circumstances and that expansion of the residential zone maybe required dependent upon an assessment of the yield capacity and vacancy of existing zoned land.*
>
> *In addition, the Strategy promotes consolidation of existing settlements and minimisation of urban sprawl and lower density development (p. 85).*

The demand projections in STRLUS were primarily based on historic growth, primarily based on Census publications of which the most recent, published one would have been 2006. Since 2011, population growth and related dwelling demand has outpaced anticipated growth as detailed in STRLUS (page 21).

38. The SGS Report also states:

- *Strong population growth has been evident in Cygnet over the past decade (Figure 2). Between 2010 and 2019 the average annual growth rate was 1.7 per cent per annum. This has increased to 2.4 per cent over the past five years, and 2.9 per cent in the past three. As a result, the figure also reveals that the population forecast for Cygnet in 2021, using the Treasury growth rates for the Huon Valley (Table 1), has already been met by 2019, even under the high scenario. (page 7)*

- *In order to achieve the overarching strategic planning objectives of urban consolidation, prevention of sprawl and fragmentation of agricultural land, it is of the utmost importance to ensure sufficient and suitable vacant residential land is provided for in and around existing settlements (within their UGB)..(page 21).*

- *There is an urgent need to update STRLUS to reflect updated projections and ensure the overarching strategic planning objectives are achieved. There is also a need to update the Treasury population projections to appropriately account of intrastate migration patterns.. (page 21)*

- *Demand for housing in Cygnet is strong. To 2036 it is estimated that there will be demand for another 524 dwellings in the Cygnet area from 2020. Assuming that 80 per cent of the dwellings should be located within the urban growth boundary to protect agricultural land from*

fragmentation and to develop greater economic and social vibrancy in the town, then 419 dwellings will be demanded within the growth boundary. (page 23)

- *…The analysis shows there is an acute shortage of suitable, vacant residential land to accommodate future growth, while meeting the overarching planning objectives…. (page 21)…. As it currently stands, there is insufficient land available to achieve a dwelling capacity that will meet the projected demand within the urban growth boundary. (page 23).*

39. The SGS Report in section 4 of the report and in other sections of the report refers to some well-known current and future impacts that arise such as urban sprawl and fragmentation of agricultural land if there is not an adequate supply of residential land to meet or, substantially meet the projected residential demand forecasts. The report states:

    In order to achieve the overarching strategic planning objectives of urban consolidation, prevention of sprawl and fragmentation of agricultural land, it is of the utmost importance to ensure sufficient and suitable vacant residential land is provided for in and around existing settlements...(SGS Report, page 21)

40. The SGS Report clearly set out that there is not sufficient residential land capacity within the Cygnet Township area for the next 10-15 years. In particular, it is relevant that the number of dwellings that the *moderate growth strategy* relates to within the township have now been constructed.

41. The proposed amendment is consistent with the Objectives set out in Schedule 1 of the Act and with relevant State Policies under the *State Policies and Project Act 1993*.

Conclusion and Recommendation

42. For the reasons set out in the report and the SGS Report it is considered very important regarding the residential housing needs of Cygnet that the proposed amendment to the Regional Strategy is made.

17.007/21*
RECOMMENDATION

That:

a) The report on the amendment to the *Southern Tasmanian Regional Land Use Strategy (2011-2035)* be received and noted.

b) Council request the Minister for Planning to amend the *Southern Tasmania Regional Land Use Strategy (2010-2035)* by adding to Table 3 of the strategy as a footnote the following wording:

For the Cygnet Township, the growth strategy does not preclude residential growth through rezoning of existing urban land within the established settlement boundaries if supported by residential land supply and demand data analysis from a suitably qualified person.

c) Council request other Southern Tasmanian councils whether they support the proposed amendment and advise the Minister of the response from the other councils.

d) The General Manager is authorised to complete the processes for the amendment in accordance with Council's decision including any adjustment to the wording of the amendment that is required by the Minister of Planning consistent with Council's decision.

SGS Economics & Planning

CYGNET RESIDENTIAL DEMAND AND SUPPLY ANALYSIS

FINAL
12/08/2020

Prepared for
Huon Valley Council

Independent insight.

Certified B Corporation

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SGS Economics and Planning Pty Ltd
ACN 007 437 729
www.sgsep.com.au
Offices in Canberra, Hobart, Melbourne, Sydney

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SGS Economics and Planning was engaged to undertake a residential land demand and supply study for the town of Cygnet within the Huon Valley Council.

The town of Cygnet has been experiencing high demand for housing over recent years due to the popularity of the town for families and smaller households (including retirement). SGS Economics and Planning, in this report, analysed the demand for housing in Cygnet and the existing supply of residential land. This analysis was performed to understand the adequacy of existing vacant residential land in Cygnet within the Urban Centre and Locality (UCL) and the Urban Growth Boundary (UGB).

A range of factors are considered including government policy, affordability and household composition to draw conclusions on the suitability of expedited land release in Cygnet.

The report contains four chapters:

1. Documentation and results of housing demand modelling for Cygnet
2. Estimation of capacity for new housing in Cygnet (UCL and UGB) and gap analysis to determine the adequacy of current supply of residential land
3. Commentary on planning principles and land demand allowances
4. Findings and conclusion.

Demand for housing in Cygnet is strong. To 2036 it is estimated that there will be demand for another 524 dwellings in the Cygnet area from 2020. If it was assumed that about eighty per cent of demand would be accommodated on residential land (as opposed to lower density lifestyle area outside of the UGB), demand would be 419 dwellings.

The capacity analysis indicates that currently there is the capacity to provide another 92 to 165 new dwellings in the Cygnet urban growth boundary to 2036, and 91 to 163 new dwellings in the Cygnet urban centre locality depending on dwelling density and realisation rates. If HVC land in the George Street redevelopment area is developed, the high capacity scenario increases to 209 and 207 dwellings for the UGB and UCL respectively. The capacity analysis is based on an assessment by the planning department of Council on the number of lots that could be created on vacant lots; and on two realisation rates reflecting the extent to which these lots may actually be used to enable further development[1].

As it currently stands, there is an acute shortage to meet all demand. There is not sufficient land to meet demand for the next ten to fifteen years. As a rule of thumb, there should be approximately fifteen years of vacant supply in order to not adversely affect housing affordability and prevent land banking and/or speculative behaviour. Indeed, evidence shows that affordability is already decreasing and some household types (for instance on minimum wages) may already struggle to meet housing costs.

The insufficient supply means that potential residents cannot move to or remain in Cygnet due to insufficient choice and affordability pressures.

[1] Keeping in mind that many households may choose a large garden over a subdivision, or may want to reserve the option to subdivide to a later stage in life.

1. INTRODUCTION

SGS Economics and Planning was engaged to undertake a residential land demand and supply study for the town of Cygnet within the Huon Valley Council.

The town of Cygnet has been experiencing high demand for housing over recent years due to the popularity of the town for families and smaller households (including retirement). SGS Economics and Planning, in this report, analysed the demand for housing in Cygnet and the existing supply of residential land. This analysis was performed to understand the adequacy of existing vacant residential land in Cygnet within the Urban Centre and Locality (UCL) and the Urban Growth Boundary (UGB).

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3. Commentary on planning principles and land demand allowances
4. Findings and conclusion.

Housing demand

SGS has created an Excel-based housing demand model for Cygnet. The model includes the following aspects:

- Population forecasts by age
- Household formation preference
- Housing type preferences

Results include housing demand by type including separate, semi-detached and apartment types.

Housing capacity

SGS has reviewed vacant residential land supply and historic uptake data collected by HVC. For each parcel of land identified as vacant and suitable for housing, SGS used HVC's categorisation based on its likely timeframe to be development ready and available to the market.

Forecast demand is then compared to housing capacity by timeframe to understand housing market alignment and identify potential gaps/oversupply over time.

Commentary

SGS provides commentary on the adequacy and currency of planning guidances in light of overarching planning objectives of urban consolidation, prevention of urban sprawl and prevention of fragmentation of agricultural land. Further, SGS has used data from our award-winning Rental Affordability Index to comment on housing affordability.

Findings and recommendation

Conclusions and recommendations are drawn concerning the need for future planning around supply of land in Cygnet.

2. HOUSING DEMAND

2.1 Introduction and purpose

An assessment of population and demographic trends has been undertaken to develop an understanding of the underlying forces which are driving growth and demand for dwellings in the Huon Valley LGA and Cygnet. Beyond population and dwelling forecasts, this section also considers typology and housing choice.

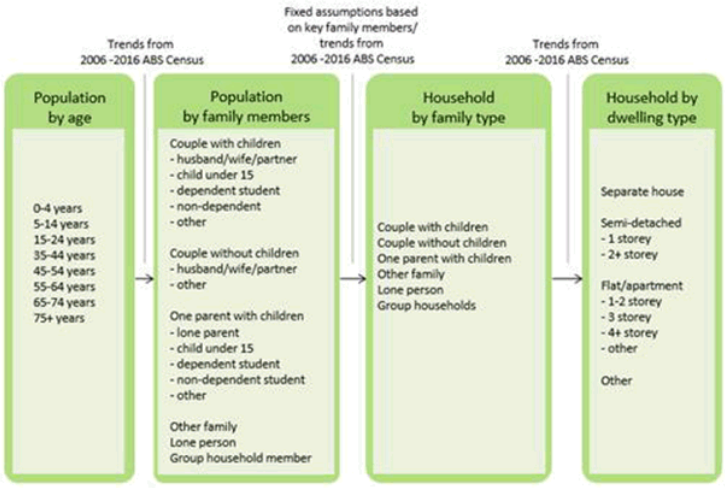
The purpose of the analysis is to forecast housing demand in Cygnet to the year 2036. Two scenarios are provided to illustrate the housing demand under high growth and moderate growth trends. Assumptions for the scenarios are drawn from analysis of historic housing growth in Cygnet and Huon Valley LGA.

2.2 Approach

The analysis in this section draws upon a range of datasets, mostly from ABS, including population growth, age, family, and household type. These core demographic components combine to help understand the drivers for housing demand in Cygnet presently and into the future.

SGS has applied its in-house and tested *Housing Demand Model* to forecast total demand and demand by dwelling type. The datasets are key inputs into the modelling process to help determine the change in the number of households requiring housing in Cygnet. An illustration of the model below shows the outputs as being housing demand by 'separate house', 'semi-detached' (referring to attached dwellings, terraces and townhouses) and 'flat/apartment'.

FIGURE 1: SGS HOUSING DEMAND MODEL METHOD



Source: SGS Economics and Planning

Demand for different dwelling type shifts throughout an individual's lifespan, due to income levels, the structure of the household they live in and preferences. To that end, changing demographics and the changing relationship between household types and dwelling types described will impact upon future housing choices. In regional areas, like the Huon Valley, housing type preferences are strongly skewed towards separate houses, but the ageing of the population will likely drive a slight increase in demand for units (referred to as flats/apartments).

The model's base scenario is run off historically observed household and dwelling compositions in the LGA – generating a 'business as usual' forecast of the future if there are no major shifts in population/demographic trends or supply/capacity constraints.

The model is run at the LGA level as this is the level that population forecasts by age group from the Tasmanian Government are available. Using the outputs for the Huon Valley LGA, the housing demand for Cygnet was calculated with: trends adjusted to reflect the on-the-ground experience under the high scenario; and trends held constant to reflect a milder housing growth rate under the moderate scenario.

2.3 Population growth

The Tasmanian Department of Treasury and Finance has prepared population projections for Tasmania's Local Government Areas for 25 years (2017 to 2042)[2]. Table 1 below shows population forecasts for the Cygnet SA2 based on the population at the 2016 census and the population growth rates for the Huon Valley LGA from the Treasury projections.

The Tasmanian Government's projections have three series, based on different assumptions - high, medium, and low. The medium and high series are shown here (Table 1).

TABLE 1: POPULATION GROWTH COMPARISON OF DIFFERENT SERIES, CYGNET

Series	2016	2021	2026	2031	2036
High	4,266	4,561	4,843	5,111	5,347
Medium	4,266	4,522	4,728	4,903	5,040

Source: Tasmanian Government 2019

Table 2 shows the assumptions the Tasmanian Treasury used to estimate the population forecasts by scenario.

TABLE 2: ASSUMPTIONS FOR POPULATION GROWTH SERIES

Series	Fertility (total fertility rate)	Mortality (life expectancy at birth)	Net Interstate Migration	Net Overseas Migration	Average annual growth rate (AAGR)
High	Increasing from 1.96 babies per woman in 2017, to 2.10 babies per woman by 2028	To reach 86.0 years for males and 88.5 years for females by 2067.	Net gain of 1,200 persons per year to Tasmania (+0.3% to population in 2017)	Net gain of 2,100 persons per year to Tasmania (+0.4% to population in 2017)	0.74% to 2036 0.62% per annum to 2067
Medium	Constant rate of 1.96 babies per woman.	To reach 82.4 years for males and 85.2 years for females by 2067.	Zero net interstate migration.	Net gain of 1,800 persons per year to Tasmania. (+0.34% to the population in 2017)	0.38% to 2036 0.20% per annum to 2067

Source: Tasmanian Government 2019

[2] https://www.treasury.tas.gov.au/economy/economic-data/2019-population-projections-for-tasmania-and-its-local-government-areas

Table 3 below compares the recent experience in Cygnet to these scenarios. It shows that growth in Cygnet has been trending above the high growth scenario from the Treasury forecasts for the Huon Valley municipality.

TABLE 3: COMPARISON OF CYGNET POPULATION GROWTH TO POPULATION PROJECTIONS

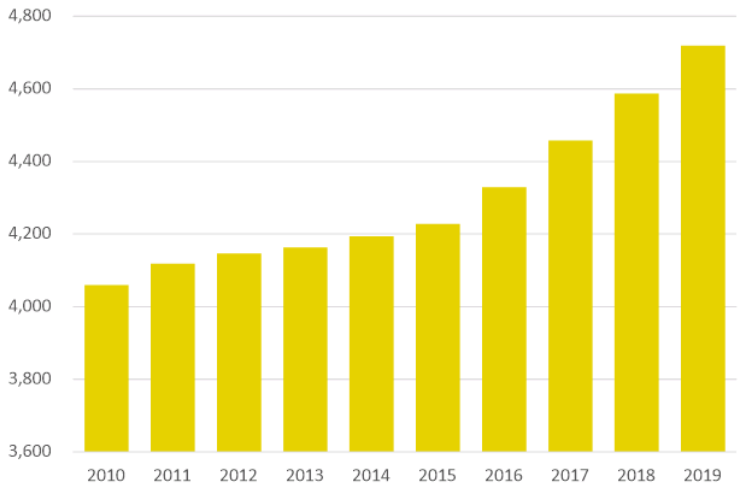
Series	Fertility (total fertility rate)	Mortality (life expectancy at birth)	Net Interstate Migration	Net Overseas Migration	Average annual growth rate (AAGR)
Actual in Cygnet 2017 to 2019	A natural increase in the population of 49 (124 births and 75 deaths) indicating a replacement rate above 2.0 (high scenario)	Not available	Net internal migration of +291 over three years (+2% per annum). This is well above the high series rate but does include intrastate movements	Net overseas migration of +50 over three years (+0.4% per annum). This is equivalent to the high series for Tasmania.	2.9% per annum from 2017 to 2019. This is well above the high series for Tasmania

Source: SGS Economics and Planning 2020 using ABS (2020) estimated residential population by components, SA2 level.

This can partially be explained by a key shortcoming of the Treasury projections: the projections do not take into account internal migration patterns within Tasmania. As stated in the Huon Valley Economic Development Strategy 2015-2020, the Huon Valley is influenced significantly by its relative proximity to Tasmania's capital city Hobart and the neighbouring municipal area, Kingborough. The proximity to these two denser populated areas, coupled with lower average house prices, means that to first homeowners and other low-medium income earners, Cygnet offers considerable appeal.

Strong population growth has been evident in Cygnet over the past decade (Figure 2). Between 2010 and 2019 the average annual growth rate was 1.7 per cent per annum. This has increased to 2.4 per cent over the past five years, and 2.9 per cent in the past three. As a result, the figure below also reveals that the population forecast for Cygnet in 2021, using the Treasury growth rates for the Huon Valley (Table 1), has already been met by 2019, even under the high scenario.

FIGURE 2: ESTIMATED RESIDENT POPULATION IN CYGNET SA2



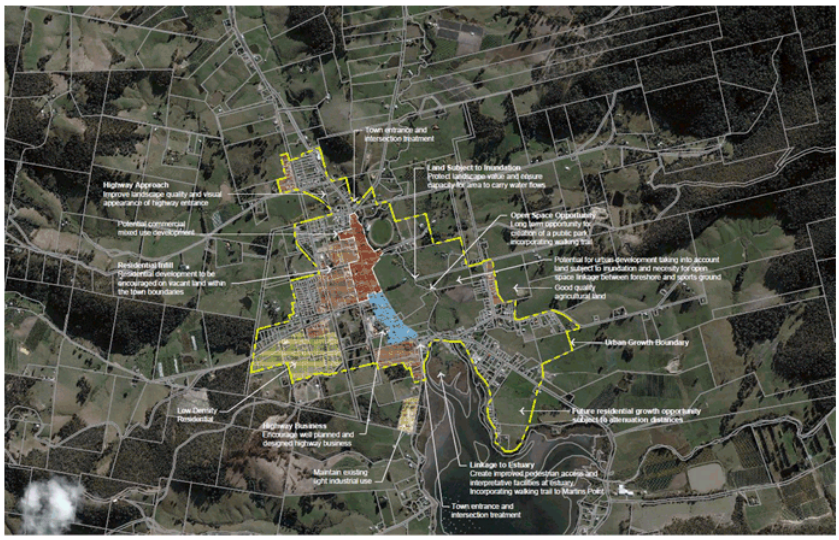
Source: ABS (2020) estimated residential population by components

Take-up of vacant residential land

The take-up of vacant residential land is another indicator of housing demand. The Southern Tasmanian Regional Land Use Strategy (STRLUS) assumed a moderate growth trajectory for Cygnet which corresponds to an annual average growth rate of 0.9 per cent per annum for Cygnet.

Table 4 shows the rateable properties for vacant residential land and non-vacant residential land within the Urban Centre Locality (UCL) area of Cygnet and also within the Urban Growth Zone for the years 2011, 2013, 2016 and 2019. The UCL is an ABS geography to capture data for individual towns. The UCL for Cygnet is slightly larger than the Urban Growth Centre boundary. The Urban Growth boundary for Cygnet (Figure 3) is referred to on the Cygnet Strategy map of the Huon Valley Land Use and Development Strategy and has been used by Council for planning purposes, in particular, prior to the commencement of the current planning scheme.

FIGURE 3: CYGNET URBAN GROWTH BOUNDARY



Source: GHD

The data shows that the number of non-vacant residential properties has increased by 83 since 2011 in the UCL, a compounded growth rate of 2.7 per cent per annum. The total growth rate for Cygnet is 2.4 per cent per annum.

TABLE 4: RESIDENTIAL LAND, CYGNET

RATED LAND	Cygnet Urban Centre Locality (UCL)	2011	2013	2016	2019
(as at 1 July of each year)	Vacant residential land	45	74	80	56
	Non-Vacant Residential land	347	366	399	430
RATED LAND	**Urban Growth Centre - Cygnet**	**2011**	**2013**	**2016**	**2019**
(as at 1 July of each year)	Vacant residential land	48	63	48	36
	Non-Vacant Residential land	358	376	394	419

Source: Huon Valley Council, received August 2020

Table 5 shows the applications for subdivisions lodged between 2007 and 2020, for subdivisions within the Cygnet Urban Centre and Locality (UCL); and Cygnet Urban Growth Boundary (UGB) areas that were completed such that Final Plans for these subdivisions were

able to be sealed to enable lots to be created (or for relevant stages of a subdivision). The period before 2011 saw applications for larger scale subdivisions ranging between 20 and 30 lots, which were mainly driven by the new estates located along Silver Hill Road (Devereaux Court and Dorgan Court) and Mary Street (Lourdes Rise). An application of 29 lots was lodged in 2011 on 27 Silver Hill Road, which is outside the boundary of the Cygnet UGB but within the Cygnet UCL. The period post 2011 saw a decrease in the size of subdivision applications. Applications during this period were characterised by infill development with subdivisions ranging between 1 to 3 lots.

TABLE 5: APPLICATIONS OF APPROVED SUBDIVISIONS TO FINAL PLAN STAGE, CYGNET UCL AND UGB

Application year	Subdivision	Address	Additional lots from approved subdivision	Final Plan sealed - 2011	Approval	Final Plan sealed
2007	SUB-4/2007	24 Silver Hill Road (Devereaux Crt)	19	Final Plan sealed - 2011	2011	FP sealed
2008	SUB-11/2008/A	Mary Street - Lourdes Rise	25	Final Plan sealed - 2011	2011	FP sealed
2012	SUB-81/2012	24 Dances Road	1		2013	FP sealed - 2013
2012	SUB-43/2012	11 Emma Street	1		2013	FP sealed-2018
2012	SUB-47/2012	5 Smith Street	1		2013	FP sealed -2018
2011	SUB-7/2011	27 Silver Hill Road (Dorgan Crt)	9	Final Plan sealed for stage 1 (9 lots) - 2015	2015	FP sealed
2011	SUB-7/2011	27 Silver Hill Road (Dorgan Crt)	20	Final Plan sealed for stage 2 (20 lots) - 2016	2016	FP sealed
2017	SUB-18/2017	7406; 7404; 7402 Channel Highway	3		2019	FP sealed-2019
2017	SUB-3/2017	8 Frederick Street	2		2017	FP sealed-2020
2017	SUB-1/2017	5 Smith Street	1		2017	FP sealed-2018
2017	SUB-37/2017	10 Charles Street	8	Plan sealed for stage 1 (8 lots) 2019; (Stage 2 TBC)	2019	FP sealed
2018	SUB-32/2018	32 Christina Street	2		2019	FP not sealed
2020	SUB-29/2020	14 George Street	1	Final Plan sealed - 2011	2019	FP Sealed

Source: Huon Valley Council, received August 2020

Other subdivision lot data for the period 2011-2019 for approved subdivisions in Cygnet are shown in Table 6[3]. It shows that over the past 9 years 110 lots have been created in Cygnet.

The three major releases in this time were Devereaux Court (19 lots in 2011), Lourdes Rise (27 lots in 2011) and Dorgan Court (29 lots across 2015 and 2016). Satellite imagery (Figure 4) reveals that the take-up rate of these sub-divisions has been high, with only a few vacant lots remaining in these three sub-divisions (at April 2019).

TABLE 6: APPROVED SUBDIVISIONS, CYGNET

Subdivisions (not including approved boundary adjustments as boundary adjustments do not create additional lots)	2011	2012	2013	2014	2015	2016	2017	2018	2019	Total
Number of lots created	53 lots	4 lots	4 lots		8 lots (+1 x POS lot) **Total: 8 lots** **Stage 1** - Dorgan Court comprised 8 lots plus 1 x Public Open Space lot	2 lots + 20 lots **Total: 22 lots** Stage 2 of Dorgan Court subdivision comprised 20 lots	10 lots	8 lots	1 lot + **Balance**	110 lots

Source: Huon Valley Council, received August 2020

FIGURE 4: DEVEREAUX COURT (TOP LEFT) AND DORGAN COURT (BOTTOM RIGHT) IN 2012

Source: Google Earth, accessed August 2020

[3] This data does not include boundary adjustment approval information as no new lots are created by that process, and does not include data between 2011-2019 for approved subdivisions that were withdrawn after lodgement, or for approved subdivisions that subsequently lapsed

FIGURE 5: DEVEREAUX COURT (TOP LEFT) AND DORGAN COURT (BOTTOM RIGHT) IN 2019

Source: Google Earth, accessed August 2020

2.4 Housing demand scenarios

All the historic evidence above suggests that demand for residential lots is growing faster in Cygnet than predicted by official government population projections produced by Treasury, as well as what is assumed in the STRLUS.

SGS prepared two scenarios to establish a range in which housing demand in Cygnet might occur. Housing demand under a high growth scenario and a moderate growth scenario will be discussed in the next section. Under the high growth scenario, dwelling growth of 2 per cent per annum has been applied to forecast housing demand. For the moderate growth scenario, the dwelling demand rate is 1.5 per cent per annum.

Age distribution

The age profile of the population is also projected to change, impacting the types of dwellings demanded, with major growth in aged population cohorts. The current and projected age profile for residents in the Cygnet SA2 under the high and moderate growth scenarios are shown in Figure 6 and Figure 7. Trends of an aging population profile can be observed under both scenarios, as the dominant age groups are anticipated to shift from 45 to 64 in 2016 to 65 to 75 by 2036. This reflects that people are growing older and remaining healthy and independent for longer. It is expected most of the older people in Cygnet will remain living independently, particularly if housing options are provided to them. Similarly, an adequate supply of land for detached housing will allow young families to move into Cygnet.

FIGURE 6: POPULATION PROJECTION AND GROWTH RATE BY AGE (HIGH GROWTH), CYGNET SA2

Source: ABS Census; Tasmanian Government 2019; and SGS Economics and Planning

FIGURE 7: POPULATION PROJECTION AND GROWTH RATE BY AGE (MODERATE GROWTH), CYGNET SA2

Source: ABS Census; Tasmanian Government 2019; and SGS Economics and Planning

2.5 Housing demand model results

Forecast dwelling demand

Table 7 and Table 8 summarise the results of the housing demand modelling under the high and moderate growth scenarios. The results are derived from the *Housing Demand Model* using ABS Census data patterns in demographics and housing types from 2001 to 2016 and population growth forecasts to 2036 for the Cygnet SA2.

Under the high growth scenario, the model indicates that while the highest growth rate between 2020 and 2036 is likely to be for semi-detached dwellings (3.4 per cent per annum), the dwelling mix in Cygnet will still be dominated by detached (separate house) dwellings. Demand for separate houses is expected to grow 1.9 per cent per year between 2020 and 2036. The preference for separated houses in Cygnet will drive demand for 678 residential lots to 2036. The projected demand for semi-detached, unit and other dwellings types adds to demand by another 50 dwellings to 2036. The demand for semi-detached and units may or may not occur on strata-titled lots.

In total, the model shows that 729 new dwellings are to be demanded by 2036 in the Cygnet SA2 area, which translates to an increase of 2 per cent per annum.

TABLE 7: DWELLING DEMAND FORECAST 2020 TO 2036 (HIGH GROWTH), CYGNET SA2

Dwelling type	2020[4]	2021	2026	2031	2036	2020 to 2036 Growth	AAGR[5] 2020 to 2036
Separate house	1,874	1,920	2,135	2,349	2,553	678	1.9%
Semi Detached	26	27	33	38	44	18	3.4%
Flat, unit or apartment	27	28	32	36	40	12	2.3%
Other	41	42	48	54	60	20	2.5%
Total	**1,968**	**2,017**	**2,247**	**2,477**	**2,697**	**729**	**2.0%**

Source: SGS Housing Demand Model (2020)

Modelling results under the moderate scenario shows a lower housing demand growth rate of 1.5 per annum. This is driven by the assumption that the share of housing growth in the Huon Valley LGA allocated to Cygnet SA2 remains constant throughout the years. Separate houses remain the most dominant housing type, whereas semi-detached dwellings have the highest growth rate. A total of 525 new dwellings are projected to be the size of housing demand by 2036.

TABLE 8: DWELLING DEMAND FORECAST 2020 TO 2036 (MODERATE GROWTH), CYGNET SA2

Dwelling type	2020	2021	2026	2031	2036	2020 to 2036 Growth	AAGR 2020 to 2036
Separate house	1,842	1,878	2,039	2,191	2,328	486	1.5%
Semi Detached	25	27	31	36	41	15	2.9%
Flat, unit or apartment	27	27	30	33	36	9	1.9%
Other	40	41	46	51	55	15	2.0%
Total	**1,934**	**1,973**	**2,146**	**2,311**	**2,459**	**525**	**1.5%**

Source: SGS Housing Demand Model (2020)

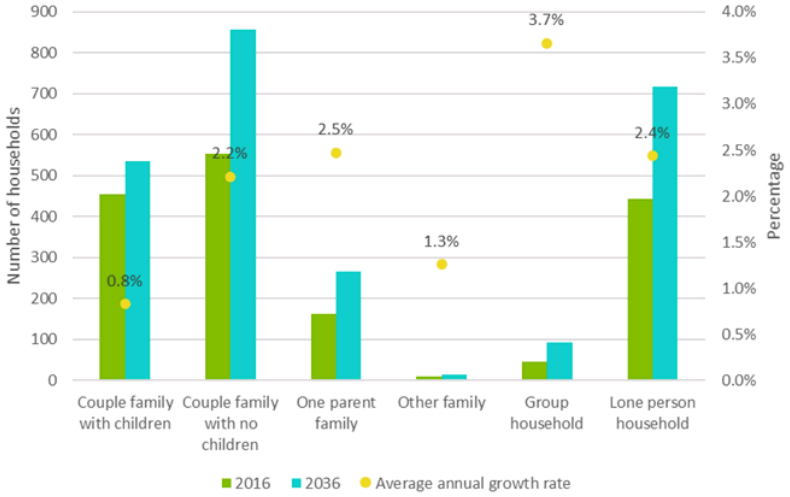
The differences between the two scenarios are largely driven by the demand in separate houses. Among the 204 dwelling growth difference between the high and moderate scenarios, separate houses account for 94 per cent (192 dwellings) of the total difference.

Forecast household composition

The age statistics are reflected in the projected growth of different household types in the LGA. Under the high growth scenario (Figure 8), while couple families with children are anticipated to grow by 18 per cent between 2016 and 2036, couple families with no children, one parent family, and lone person household types are expected to grow considerably, by 55, 63, and 62 per cent respectively.

[4] The figure for 2020 is calculated by assuming that 80% of the growth between 2016 and 2021 (3 years' worth) has already been realised.
[5] AAGR – Average Annual Growth Rate

FIGURE 8: HOUSEHOLDS BY COMPOSITION (HIGH GROWTH), CYGNET SA2

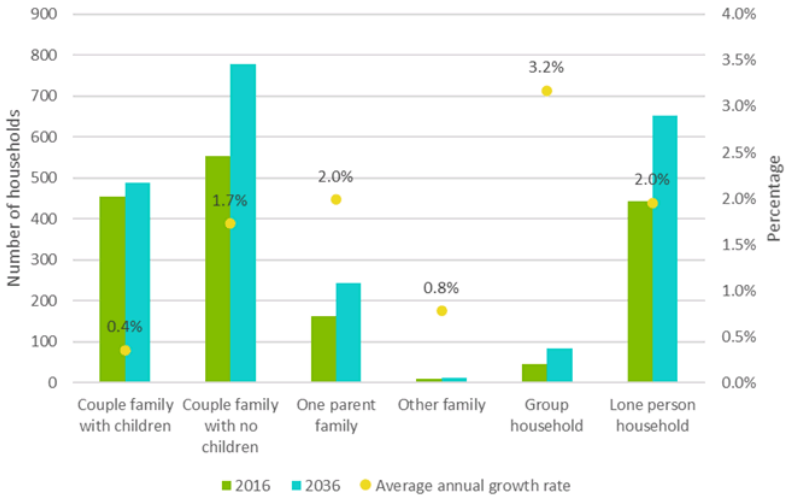


Source: Tasmanian Government 2019; SGS Housing Demand Model (2020)

Under the moderate growth scenario shown in Figure 9, couple families with children are only expected to grow by 7 per cent by 2036, while the biggest growths will also be seen in one parent families (48 per cent), lone person households (47 per cent), and couple families with no children (41 per cent).

Changes in household compositions in both scenarios are in line with trends seen across Tasmania and Australia, in that the average household size is to see a decrease overtime driven by ageing population. The ageing of the population in Tasmania is however more pronounced than Australia as a whole.

FIGURE 9: HOUSEHOLDS BY COMPOSITION (MODERATE GROWTH), CYGNET SA2



Source: Tasmanian Government 2019; SGS Housing Demand Model (2020)

3. HOUSING DEVELOPMENT CAPACITY

3.1 Introduction and purpose

This chapter identifies available vacant residential land in Cygnet ready for development in the immediate, medium and longer-term. HVC has supplied much of the data required for the supply analysis, with SGS tasked with analysing this information and estimating the available lots within the UCL and UGB boundaries.

The purpose of the analysis is to reveal the capacity for new housing in Cygnet to 2036 and compare to housing demand to ascertain whether new parcels of land should be released. Key to meeting population demand as forecast will be to ensure land supply is consistent and stable, properly located and readily developable.

3.2 Housing capacity

Method

To estimate the housing capacity of Cygnet (i.e. the likely number of dwellings that could be built in Cygnet to 2036), SGS relied upon the vacant land and lots analysis as identified by HVC. Each parcel was reviewed by SGS taking into account engineering advice provided by HVC to consider constraints to develop on each lot. This analysis included a lot of analysis conducted by Council compared to previous analysis completed by SGS on housing capacity in Cygnet.

Parcels of land were sorted into four different groups:

- Development ready lots (immediate supply)
- Land that is serviced with water and sewage, but not sub-divided (medium-term supply)
- Land that is serviceable but not sub-divided (medium to longer term supply)
- Land that is not sub-divided nor fully serviced (long term supply)
- Council-owned land (uncertain supply)

In addition, dwelling densities and realisation rates (what share of lots would realistically be developed) were allocated. The theoretical capacities of vacant residential land were estimated based on the following assumptions for two scenarios, low and high, with the higher scenario assuming greater densities[6]:

- Two different realisation rates are applied to development estimates. For the low capacity scenario, it is assumed that 50 per cent of the theoretical capacity will be realised. Many landowners will not sub-divide their land preferring to keep the whole parcel intact for their own use. There are also cost constraints if new access ways or infrastructure has to be provided and planning constraints such as the coastal overlay or other overlays on some sites. For the higher capacity scenario, it is assumed optimistically that 90 per cent of the capacity can be realised. This realisation rate was chosen given the accuracy and research behind the housing capacity data set supplied by HVC.
- Consideration has been given to dwelling densities in the General Residential zone in preparation of the vacant land and lots analysis as identified by HVC, with densities in

[6] though compared to major cities the density in the high scenario remains low

that range of 9 dwellings per hectare (equivalent to 1,100 sqm per lot) to 15 dwellings per hectare (equivalent to 665 sqm per lot).

- For Huon Valley Council (HVC) owned land at 20 Golden Valley Road and 14 George Street, this land has been previously identified by Council for housing development as part of the George Street Site Development Strategy, and potentially therefore this land may be used, for example, as community housing and related services. As an indication for a use in the high scenario, it is assumed the capacity of 14 George St is 49 dwellings based on prior research by Terroir. For the low scenario, it is assumed that this land is not used for housing.

Housing development capacity in Cygnet urban growth area

Table 9 below shows the results of the above analysis for Cygnet within the urban growth boundary. It shows that in the low scenario, with a realisation rate of 50%, there is future capacity for 92 new dwellings in Cygnet.

With a higher realisation rate (90 per cent) and the use of council land for medium density housing (such as a retirement village), the capacity in Cygnet is for 209 new dwellings. These scenarios can be thought of as a range, with the likely capacity falling somewhere in between, and likely towards the bottom of the range.

TABLE 9: HOUSING CAPACITY IN CYGNET URBAN GROWTH BOUNDARY

Land Type	Dwelling capacity (Low)	Dwelling capacity (Higher)	Dwelling capacity (Higher) with council land
Development ready (Short term)	16	28	28
Fully serviced but not sub-divided (Medium term)	50	89	89
Serviceable but not sub divided (Medium to longer term)	21	37	37
Not sub-divided or fully serviced (Long term)	6	11	11
Council-owned land (Uncertain)	0	0	44
Total	**92**	**165**	**209**

Note: the 44 Council-owned lots refer to those 49 lots at 14 George St identified by Terroir, with a 90% realisation rate applied

Allocating the above capacity to five-year time blocks results in the dwelling capacities below in Table 10:

- In the short term (to 2021) there is an immediate capacity for 16 to 28 new dwellings, depending on the capacity scenario, on development-ready lots in Cygnet.
- In the medium term when fully serviced but not sub-divided land is likely available for development, there is a capacity for around 50 to 89 dwellings between 2022 to 2026.
- In the medium to longer term when serviceable but not sub-divided land is likely available for development, there is a capacity for around 21 to 37 dwellings between 2027 to 2031.
- In the longer-term, when more difficult land for development may be ready for release, there is a capacity for a further 6 to 11 dwellings.

If the Council land is included and developed over the medium term, the capacity increases to 111 dwellings for 2022-2026 and 59 dwellings in 2027-2031.

TABLE 10: DWELLING CAPACITY IN 5-YEAR INTERVALS, URBAN GROWTH BOUNDARY

	2020-2021*	2022-2026	2027-2031	2032-2036	Total
Dwelling capacity (Low)	16	50	21	6	**92**
Dwelling capacity (Higher)	28	89	37	11	**165**
Dwelling capacity (Higher) with council land	28	111	59	11	**209**

As a general rule of thumb, there needs to be approximately 15 years of vacant supply of land available to prevent speculative land behaviour and upward pressure on land and housing affordability.

Housing development capacity in Cygnet urban centre locality

Table 11 below shows the results of the above analysis for Cygnet within the urban centre locality. It shows that in the low scenario there is currently capacity for 91 new dwellings in Cygnet.

With a higher realisation rate (90 per cent) and the use of council land for medium density housing (such as a retirement village), the capacity in Cygnet is for 207 new dwellings. These scenarios can be thought of as a range, with the likely capacity falling somewhere in between, and likely towards the bottom of the range.

TABLE 11: HOUSING CAPACITY IN CYGNET URBAN CENTRE LOCALITY

Land Type	Dwelling capacity (Low)	Dwelling capacity (Higher)	Dwelling capacity (Higher) with council land
Development ready (Short term)	11	19	19
Fully serviced but not sub-divided (Medium term)	51	91	91
Serviceable but not sub divided (Medium to longer term)	24	42	42
Not sub-divided or fully serviced (Long term)	6	11	11
Council-owned land (Uncertain)	0	0	44
Total	**91**	**163**	**207**

Note: the 44 Council-owned lots refer to those 49 lots at 14 George St identified by Terroir, with a 90% realisation rate applied

Allocating the above capacity to five-year time blocks results in the dwelling capacities below in Table 12:

- In the short term (to 2021) there is an immediate capacity for 11 to 19 new dwellings, depending on the capacity scenario, on development-ready lots in Cygnet.
- In the medium term when fully serviced but not sub-divided land is likely available for development, there is a capacity for around 51 to 91 dwellings between 2022 and 2026.
- In the medium to longer term when serviceable but not sub-divided land is likely available for development, there is a capacity for around 24 to 42 dwellings between 2027 to 2031.
- In the longer-term, when more difficult land for development may be ready for release, there is a capacity for a further 6 to 11 dwellings.

If the Council land is included and developed over the medium term, the capacity increases to 113 dwellings for 2022-2026 and 64 dwellings in 2027-2031.

TABLE 12: DWELLING CAPACITY IN 5-YEAR INTERVALS, URBAN CENTRE LOCALITY

	2020-2021*	2022-2026	2027-2031	2032-2036	Total
Dwelling capacity (Low)	11	51	24	6	**91**
Dwelling capacity (Higher)	19	91	42	11	**163**
Dwelling capacity (Higher) with council land	19	113	64	11	**207**

As a general rule of thumb, there needs to be approximately 15 years of vacant supply of land available to prevent speculative land behaviour and upward pressure on land and housing affordability.

Comparison to housing demand

As revealed in Section 2, the demand for housing in the Cygnet area (SA2) has been high in recent years. This is forecast to continue. Table 13 and Table 15 show the dwelling demand in the Cygnet SA2and within the Cygnet growth boundary. It is assumed by SGS that 80 per cent of growth in the Cygnet area should be captured within the growth boundary to improve town vibrancy and economic outcomes for Cygnet (as explored in chapter 4). Additional growth in agricultural areas and shack communities is discouraged by the Huon Valley Land Use and Development Strategy and the Southern Tasmania Regional Land Use Strategy. At present only around a third of dwelling growth in the Cygnet area is being captured within the growth boundary (see Table 17 later).

Housing capacity shortfall within the Cygnet UGB

Table 13 shows the gap between the future capacity scenarios. The results show that:

- In the low capacity scenario (the most likely scenario) there is insufficient capacity in Cygnet to cater for demand in the short, medium and long term.
- In the unlikely higher capacity scenario as well, demand is insufficient in the short, medium, and long term.
- When housing development on the HVC land is included there is still insufficient capacity over the next 16 years as well. There is a smaller deficit of supply in the medium term, which is not adequate for demand also due to the lack of choice and affordability this tight supply would create. This minor excess capacity in this scenario also relies on council foregoing broader community uses of prime council-owned land in the middle of Cygnet.

TABLE 13: DETACHED DWELLING DEMAND IN 5-YEAR INTERVALS COMPARED TO DWELLING CAPACITY, URBAN GROWTH BOUNDARY

	2020-2021*	2022-2026	2027-2031	2032-2036	Total
Demand in Cygnet SA2	39	173	164	148	524
Dwelling demand in growth boundary	31	139	131	118	419
Supply gap: Low capacity scenario	-15	-89	-111	-112	-328
Supply gap: Higher capacity scenario	-3	-50	-95	-107	-255
Supply gap: Higher scenario with Council land	-3	-28	-73	-107	-210

*Assumes 60% of the demand for 2016 to 2021 has already been realised

The analysis in Table 14 shows that in the short term, between 50 to 91% of dwelling demand in the Cygnet growth boundary can be catered for within the UGB, with 36 to 64% in the next 5 years, 16 to 28% between 2027 and 2031, and only 5 to 9% in 2032 to 2036. In total, only 22 to 39% of dwelling demand is accommodated within the UGB, not including council owned land, and if supply is not increased, this demand would likely go into rural land and/or elsewhere. Even with the high realisation rate of 90% there is still going to be a shortfall in supply.

TABLE 14: PROPORTION OF DETACHED DWELLING DEMAND IN CYGNET SA2 IN 5-YEAR INTERVALS COVERED BY DWELLING CAPACITY, URBAN GROWTH BOUNDARY

	2020-2021*	2022-2026	2027-2031	2032-2036	Total
Supply gap: Low capacity scenario	50%	36%	16%	5%	22%
Supply gap: Higher capacity scenario	91%	64%	28%	9%	39%
Supply gap: Higher scenario with Council land	91%	80%	45%	9%	50%

*Assumes 60% of the demand for 2016 to 2021 has already been realised

Housing capacity shortfall in the Cygnet UCL

A similar result is observed for the Cygnet urban centre locality, as shown in the gap analysis in Table 15. A larger deficit is shown in the next year when compared to the UGB, and a smaller deficit in supply in the medium term.

TABLE 15: DETACHED DWELLING DEMAND IN 5-YEAR INTERVALS COMPARED TO DWELLING CAPACITY, URBAN CENTRE LOCALITY

	2020-2021*	2022-2026	2027-2031	2032-2036	Total
Demand in Cygnet SA2	39	173	164	148	524
Dwelling demand in growth boundary	31	139	131	118	419
Supply gap: Low capacity scenario	-20	-88	-108	-112	-328
Supply gap: Higher capacity scenario	-12	-48	-89	-107	-256
Supply gap: Higher scenario with Council land	-12	-26	-67	-107	-212

*Assumes 60% of the demand for 2016 to 2021 has already been realised

The analysis in Table 16 shows that in the short term, only 34 to 61% of dwelling demand in the Cygnet growth boundary can be catered for within the UCL, with 36 to 66% in the next 5 years, 18 to 32% between 2027 and 2031, and only 5 to 10% in 2032 to 2036. In total, only 22 to 39% of dwelling demand is accommodated within the UCL, not including Council owned land, and if supply is not increased, this demand would likely go into rural land and/or elsewhere. Even with the high realisation rate of 90% there is still going to be a shortfall in supply.

TABLE 16: PROPORTION OF DETACHED DWELLING DEMAND IN CYGNET SA2 IN 5-YEAR INTERVALS COVERED BY DWELLING CAPACITY, URBAN CENTRE LOCALITY

	2020-2021*	2022-2026	2027-2031	2032-2036	Total
Supply gap: Low capacity scenario	34%	36%	18%	5%	22%
Supply gap: Higher capacity scenario	61%	66%	32%	10%	39%
Supply gap: Higher scenario with Council land	61%	81%	49%	10%	49%

*Assumes 60% of the demand for 2016 to 2021 has already been realised

3.3 Conclusions

The lack of supply of land ready for housing development presents challenges to new residents looking to move to Cygnet. These new residents may choose to not move to Cygnet or may move outside of the growth boundary. Demand will not be met under the existing supply.

SGS are aware of a property that is undergoing an application for a Section 43A rezoning and subdivision approval – this property is currently not residentially zoned. This property is within the UCL boundary and partly within the UGB boundary. If the rezoning and subdivision applications are successful there is potential for a further 61 lots available in the medium term.

The ageing of the population also requires careful consideration. The early release of new residential lots can help attract families to Cygnet reducing the ageing of the population while land in the centre of Cygnet may be dedicated to retirement living instead of detached housing.

In the current market, land values may become prohibitive for households to move into Cygnet. It is very likely that demand is currently diverted to areas outside the UGB, and into other parts of the Huon Valley or adjacent LGAs.

4. COMMENTARY

STRLUS and demand for housing since 2011

In STRLUS, Cygnet is defined as a township with a moderate growth strategy according to a mixed growth scenario from 2011 to 2035. A township is defined as residential settlement with prominent town centres providing a number of facilities, some local employment opportunities and convenience shopping. They tend to have a population of 500 to 1,500 residents, excluding the surrounding rural living areas.

The moderate growth strategy in STRLUS refers to an anticipated growth of 10 to 20 per cent of dwellings. A mixed growth scenario indicates that residential growth should come from a mix of both greenfield and infill circumstances and that expansion of the residential zone may be required dependent upon an assessment of the yield capacity and vacancy of existing zoned land.

In addition, the Strategy promotes consolidation of existing settlements and minimisation of urban sprawl and lower density development (p. 85).

The demand projections in STRLUS were primarily based on historic growth, primarily based on Census publications of which the most recent, published one would have been 2006. Since 2011, population growth and related dwelling demand has outpaced anticipated growth as detailed in STRLUS.

In addition, population growth has outpaced the population projections by Treasury by LGA. The issue with the Treasury projections is they do not account for intrastate migration between LGAs and/or growth patterns based on planning decisions. We therefore see in several LGAs, especially those with relative affordable house prices and within a (somewhat) commutable distance from Hobart, that population projections have been below actual growth rates.

In order to achieve the overarching strategic planning objectives of urban consolidation, prevention of sprawl and fragmentation of agricultural land, it is of the utmost importance to ensure sufficient and suitable vacant residential land is provided for in and around existing settlements (within their UGB).

There is an urgent need to update STRLUS to reflect updated projections and ensure the overarching strategic planning objectives are achieved. There is also a need to update the Treasury population projections to appropriately account of intrastate migration patterns.

Acute shortfall of supply within the township

The analysis shows there is an acute shortage of suitable, vacant residential land to accommodate future growth, while meeting the overarching planning objectives.

The following observations support the key finding of the analysis. At the time of writing this report there was no vacant residential land for sale in Cygnet. At the same time, we see that housing affordability has been decreasing (see paragraph below).

In addition, a significant share of residential demand has been accommodated outside of the UCL and UGB of Cygnet, as is illustrated in the table below. The table was compiled from ABS Census data. It shows that the majority of the dwelling stock increase was accommodated in the area outside of the UCL and the UGB[7]. This suggests limited availability of suitable and

[7] It also shows that the majority of the existing dwelling stock is outside of the UGB and UCL, reflecting the rural historic character of the town.

affordable land within the township. Of course, many households in the area also choose to live in rural and environmental lifestyle settings. The dwelling growth rate within the UCL and UGB was 3.7% and 2.1% respectively, well above the growth rate for the SA2, reflecting a high demand for living in the town.

TABLE 17 NUMBER OF PRIVATE DWELLINGS, CYGNET

	2011	2016	Growth	AAGR	Share of growth	Share of stock (2016)
Cygnet SA2	1,988	2,135	147	1.8%	100%	100%
Cygnet UCL	323	373	50	3.7%	34%	17%
Cygnet remainder (UCL)	1,665	1,762	97	1.4%	66%	83%
Cygnet UGB	399	433	34	2.1%	23%	20%
Cygnet remainder (UGB)	1,589	1,702	113	1.7%	77%	80%

Source: ABS Census, 2011 and 2016

Housing affordability and choice

High rents, relative to household incomes, has seen Greater Hobart become the least affordable metropolitan area in Australia for renting. Many homes have also been converted to short-term holiday rentals. Many households are looking to the Huon Valley for more affordable housing options. According to the rental affordability index[8], Cygnet has an acceptable level of affordability, but this will be impacted over time if there is a shortage of housing in comparison to demand as identified by SGS in the proceeding chapter. Rental affordability provides the best insight into the relation of residential demand and supply, as its affordability level is not distorted by property speculation and wealth creation considerations.

Already, rental affordability for the average income rental household has dropped markedly in Cygnet from being 'very affordable' in the fourth quarter of 2013, to 'acceptable' by the second quarter in 2019. For some household types, rents have already become unaffordable, where households pay more than thirty per cent of their income in rent. This leaves them with insufficient funds to pay for other primary needs such as heating, medical needs, education and transport.

COVID-19 and public health restrictions

The impacts of the pandemic are still evolving and uncertain. However, it is clear there are substantial consequences in terms of economic growth, migration and tourism.

At the time of writing this report, Tasmania is successfully pursuing a strategy of elimination of COVID-19. Travel across State borders is restricted to essential travellers and people who accept to stay in hotel quarantine for two weeks. This has resulted a drop of visitors to the island. With uncertainty about the future availability of a vaccine, restrictions may stay in place for another year or more.

Economic modelling shows unemployment levels may not fall to pre-pandemic levels for another three to four years.

Both lower migration and high unemployment may undermine demand for residential land, although that is not visible in the market yet, partially due to housing investment subsidies.

All in all, the pandemic may delay residential demand by two to three years.

[8] https://www.sgsep.com.au/projects/rental-affordability-index

5. FINDINGS AND RECOMMENDATION

The capacity analysis indicates that currently there is the capacity to provide another 92 to 165 new dwellings in the Cygnet urban growth boundary to 2036, and 91 to 163 new dwellings in the Cygnet urban centre locality depending on dwelling density and realisation rates. If HVC land in the George Street redevelopment area is developed, the high capacity scenario increases to 209 and 207 dwellings for the UGB and UCL respectively. The actual capacity likely lies somewhere towards to bottom of this range, with the higher scenario unlikely to be realised.

Demand for housing in Cygnet is strong. To 2036 it is estimated that there will be demand for another 524 dwellings in the Cygnet area from 2020. Assuming that 80 per cent of the dwellings should be located within the urban growth boundary to protect agricultural land from fragmentation and to develop greater economic and social vibrancy in the town, then 419 dwellings will be demanded within the growth boundary.

As it currently stands, there is insufficient land available to achieve a dwelling capacity that will meet the projected demand within the urban growth boundary. The insufficient supply means that potential new residents cannot move to Cygnet due to insufficient choice and affordability pressures.

SGS Economics & Planning

Contact us

CANBERRA
Level 2, 28-36 Ainslie Place
Canberra ACT 2601
+61 2 6257 4525
sgsact@sgsep.com.au

HOBART
PO Box 123
Franklin TAS 7113
+61 421 372 940
sgstas@sgsep.com.au

MELBOURNE
Level 14, 222 Exhibition St
Melbourne VIC 3000
+61 3 8616 0331
sgsvic@sgsep.com.au

SYDNEY
209/50 Holt St
Surry Hills NSW 2010
+61 2 8307 0121
sgsnsw@sgsep.com.au

8.2 City Planning - Advertising Report File Ref: F21/73295

Memorandum of the Director City Planning of 27 July 2021 and attachments.

Delegation: Committee

City of HOBART

MEMORANDUM: CITY PLANNING COMMITTEE

City Planning - Advertising Report

Attached is the advertising list for the period 12 July 2021 to 23 July 2021.

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 PLANNING

Date: 27 July 2021
File Reference: F21/73295

Attachment A: City Planning - Advertising Report ⇩

Application	Street	Suburb	Development	Works Value	Expiry Date	Referral	Proposed Delegation	Advertising Period Start	Advertising Period End
PLN-20-493	30 COPLEY ROAD	LENAH VALLEY	Four Multiple Dwellings (One Existing, Three New) and Associated Works	$1,000,000	05/08/2021	ayersh	Director	14/07/2021	28/07/2021
PLN-21-436	1 AUGUSTA ROAD	LENAH VALLEY	Partial Demolition, Alterations, and Extension	$100,000	14/08/2021	baconr	Director	12/07/2021	26/07/2021
PLN-21-445	18 OSBORNE STREET	SANDY BAY	Partial Demolition and Alterations	$50,000	13/08/2021	baconr	Director	12/07/2021	26/07/2021
PLN-21-465	24 MARLBOROUGH STREET	SANDY BAY	Change of Use to Visitor Accommodation	$0	25/08/2021	baconr	Director	19/07/2021	02/08/2021
PLN-21-460	367 - 373 ELIZABETH STREET	NORTH HOBART	Partial Demolition and Alterations	$90,000	21/08/2021	baconr	Director	23/07/2021	06/08/2021
PLN-21-448	11 DENISON STREET	SOUTH HOBART	Alterations and Front Fencing	$8,000	16/08/2021	ikinb	Director	19/07/2021	02/08/2021
PLN-21-354	21 KIRKSWAY PLACE & ADJACENT ROAD RESERVE	BATTERY POINT	Partial Demolition and Alterations	$350,000	20/08/2021	maxwellv	Director	21/07/2021	04/08/2021
PLN-21-439	20 DERWENTWATER AVENUE	SANDY BAY	Partial Demolition, Alterations, Extension, and Garage	$90,000	16/08/2021	mcclenahanm	Director	16/07/2021	30/07/2021
PLN-20-221	7 HADLEY COURT	LENAH VALLEY	Two Multiple Dwellings	$900,000	25/08/2021	mcclenahanm	Council (Council Land)	22/07/2021	05/08/2021
PLN-20-663	3 / 111 HILL STREET	WEST HOBART	Signage	$0	01/08/2021	nolanm	Director	12/07/2021	26/07/2021
PLN-21-417	15 VICTORIA STREET	HOBART	Signage	$0	16/08/2021	nolanm	Director	20/07/2021	03/08/2021
PLN-21-247	28 AOTEA ROAD	SANDY BAY	Five Multiple Dwellings	$984,000	05/08/2021	sherriffc	Director	14/07/2021	28/07/2021
PLN-21-306	520 SANDY BAY ROAD	SANDY BAY	Partial Demolition, Alterations, and Partial Change of Use to Dwelling	$30,000	30/07/2021	sherriffc	Director	15/07/2021	29/07/2021

Application	Street	Suburb	Development	Works Value	Expiry Date	Referral	Proposed Delegation	Advertising Period Start	Advertising Period End
PLN-20-268	10 SELFS POINT ROAD	NEW TOWN	Partial Demolition, Alterations and Extension	$350,000	10/08/2021	sherriffc	Council (Council Land)	16/07/2021	30/07/2021
PLN-21-396	152 - 156 ELIZABETH STREET	HOBART	Partial Demolition, Alterations, and Signage	$10,000	06/08/2021	sherriffc	Director	16/07/2021	30/07/2021
PLN-21-449	4 BUTTERWORTH STREET	WEST HOBART	Partial Demolition, Alterations, and Extension	$100,000	16/08/2021	smeea	Director	12/07/2021	26/07/2021
PLN-21-44	120 POTTERY ROAD & ADJACENT ROAD RESERVE	LENAH VALLEY	Dwelling	$539,775	02/08/2021	smeea	Council (Council Land)	14/07/2021	28/07/2021
PLN-21-453	56 NAPOLEON STREET	BATTERY POINT	Alterations (Solar Panels)	$12,000	17/08/2021	smeea	Director	14/07/2021	28/07/2021
PLN-21-433	20 CLARE STREET	NEW TOWN	Partial Demolition, Alterations, and Alterations to Carparking	$8,000	10/08/2021	smeea	Director	15/07/2021	29/07/2021
PLN-21-363	5 WILLIAM STREET	WEST HOBART	Partial Demolition, Alteration, Extension, Outbuilding and Front Fencing	$250,000	06/08/2021	smeea	Director	21/07/2021	04/08/2021
PLN-21-462	13 GANT STREET	LENAH VALLEY	Partial Demolition, Alterations, and Extension	$80,000	20/08/2021	smeea	Director	22/07/2021	05/08/2021
PLN-21-180	85 KING STREET	SANDY BAY	Two Multiple Dwellings	$600,000	31/07/2021	widdowsont	Director	13/07/2021	27/07/2021
PLN-21-245	251 MACQUARIE STREET	HOBART	Three Multiple Dwellings (Two Existing, One New)	$500,000	12/08/2021	widdowsont	Director	13/07/2021	27/07/2021
PLN-21-400	100 - 102 GOULBURN STREET	HOBART	Alterations and Change of Use to Dwelling and General Retail	$5,000	09/08/2021	widdowsont	Director	16/07/2021	30/07/2021
PLN-21-281	29 CAMPBELL STREET & ADJACENT ROAD RESERVE	HOBART	Partial Change of Use to Eating Establishment and Outdoor Dining	$5,000	10/08/2021	widdowsont	Council (Council Land)	20/07/2021	03/08/2021
PLN-21-374	110 REGENT STREET	SANDY BAY	Partial Demolition, Alterations, Extension and Fencing	$850,000	23/08/2021	widdowsont	Director	23/07/2021	06/08/2021

8.3 Delegated Decision Report (Planning) File Ref: F21/73608

Memorandum of the Director City Planning of 28 July 2021 and attachments.

Delegation: Committee

City of HOBART

MEMORANDUM: CITY PLANNING COMMITTEE

Delegated Decision Report (Planning)

Attached is the delegated planning decisions report for the period 12 July 2021 to 23 July 2021.

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 PLANNING

Date: 28 July 2021
File Reference: F21/73608

Attachment A: Delegated Decision Report (Planning) ⇩

27 July 2021

Delegated Decisions Report (Planning)

19 applications found.

Approved All

Planning Description	Address	Works Value	Decision	Authority
PLN-19-362 Car Parking Space	9 CANNING COURT MOUNT STUART TAS 7000	$ 6,000	Approved	Delegated
PLN-21-168 Dwelling	25 BEAUMONT ROAD LENAH VALLEY TAS 7008	$ 280,000	Approved	Delegated
PLN-21-254 Alterations and Partial Change of Use to Visitor Accommodation	265 MACQUARIE STREET HOBART TAS 7000	$ 5,000	Approved	Delegated
PLN-21-270 Partial Demolition, Alterations, Extension, Carport and Front Fencing	58 FOREST ROAD WEST HOBART TAS 7000	$ 118,000	Approved	Delegated
PLN-21-297 Partial Demolition, Alterations and Extension	9 MANING AVENUE SANDY BAY TAS 7005	$ 195,000	Approved	Delegated
PLN-21-304 Partial Demolition and Alterations	22-26 ELIZABETH STREET HOBART TAS 7000	$ 125,000	Approved	Delegated
PLN-21-319 Partial Demolition, Alterations, and Extension	30 WENTWORTH STREET SOUTH HOBART TAS 7004	$ 400,000	Approved	Delegated
PLN-21-325 Partial Demolition, Alterations and Deck	1/1 RISELEY COURT LENAH VALLEY TAS 7008	$ 150,000	Approved	Delegated
PLN-21-336 Alterations and Change of Use to Visitor Accommodation	20-22 NEWDEGATE STREET NORTH HOBART TAS 7000	$ 20,000	Approved	Delegated
PLN-21-338 Alterations (Solar Panels)	340 ELIZABETH STREET NORTH HOBART TAS 7000	$ 19,980	Approved	Delegated
PLN-21-373 Reinstatement of Existing Boundary Wall	27 SALAMANCA PLACE HOBART TAS 7000	$ 20,000	Approved	Delegated
PLN-21-383 Change of Use to Visitor Accommodation	302 CHURCHILL AVENUE SANDY BAY TAS 7005	$ 5,000	Approved	Delegated
PLN-21-390 Outbuilding	4 SMITH STREET NORTH HOBART TAS 7000	$ 7,500	Approved	Delegated
PLN-21-392 Partial Demolition, Alterations, and Extension	10 WENTWORTH STREET SOUTH HOBART TAS 7004	$ 10,000	Approved	Delegated
PLN-21-398 Partial Change of Use to Sport and Recreation	65-69 LETITIA STREET NORTH HOBART TAS 7000	$ 0	Approved	Delegated
PLN-21-403 Partial Demolition, Alterations, and Extension	79 CARLTON STREET NEW TOWN TAS 7008	$ 100,000	Approved	Delegated
PLN-21-408 Partial Change of Use to Food Services (Mobile Food Van)	143 - 145 NEW TOWN RD	$ 0	Approved	Delegated
PLN-21-422 Alterations (Solar Panels)	6 STAR STREET SANDY BAY TAS 7005	$ 8,000	Approved	Delegated
PLN-21-428 Alterations	70 LIPSCOMBE AVENUE SANDY BAY TAS 7005	$ 60,000	Approved	Delegated

9. 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.

10. 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	Planning Authority Items – Consideration of Items with Deputations
Item No. 5	City Acting as Planning Authority
Item No. 6	Questions Without Notice