CITY OF HOBART

AGENDA

City Planning Committee Meeting

Open Portion

Monday, 16 November 2020

at 5:00 pm

SUPPLEMENTARY ITEMS

ORDER OF BUSINESS

The General Manager reports:

“That in accordance with the provisions of Part 2 Regulation 8(6) of the *Local Government (Meeting Procedures) Regulations 2015*, these supplementary matters are submitted for the consideration of the Committee.

Pursuant to Regulation 8(6), I report that:

(a) information in relation to the matter was provided subsequent to the distribution of the agenda;

(b) the matter is regarded as urgent; and

(c) advice is provided pursuant to Section 65 of the Act.”

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 General Manager 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.

12 40 BURNETT STREET, 42-44 BURNETT STREET NORTH HOBART AND ADJACENT ROAD RESERVE - DEMOLITION, NEW BUILDING FOR 31 MULTIPLE DWELLINGS AND GENERAL RETAIL AND HIRE, SUBDIVISION (LOT CONSOLIDATION), ALTERATIONS TO ACCESS AND ASSOCIATED WORKS PLN-20-633 - FILE REF: F20/121589

Address:	40 Burnett Street, 42-44 Burnett Street, North Hobart and Adjacent Road Reserve
Proposal:	Demolition, New Building for 31 Multiple Dwellings and General Retail and Hire, Subdivision (Lot Consolidation), Alterations to Access and Associated Works
Expiry Date:	3 December 2020
Extension of Time:	Not applicable
Author:	Michael McClenahan

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 a new building for 31 multiple dwellings and general retail and hire, subdivision (lot consolidation), alterations to access, and associated works at 40 and 42 - 44 Burnett Street, North 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-20-633 - 40 BURNETT STREET NORTH HOBART TAS 7000 - Final Planning Documents except where modified below.

Reason for condition

To clarify the scope of the permit.

TW

The use and/or development must comply with the requirements of TasWater as detailed in the form Submission to Planning Authority Notice, Reference No. TWDA 2020/01519-HCC dated 08/10/2020 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 palette of exterior colours and materials must be provided.

The palette of exterior colours and materials should address the following:

1. **Consideration of introducing a simpler and more recessive roof form.**
1. **Utilising some elements or characteristics of the cottage at 38 Burnett Street within the frontage of the development, at street level.**
2. **The use of planter boxes along the street level frontage.**
3. **The use of brick or masonry in the ground floor elevation.**

Prior to the issue of any approval under the *Building Act 2016* (excluding for demolition, excavation and works up to the ground floor slab), revised plans, and montages and samples where appropriate, must be submitted and approved to the satisfaction of the Director City Planning showing exterior colours and materials in accordance with the above requirement.

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

Reason for condition

In the interest of the streetscape and townscape values of the surrounding area, to improve the transition and compatibility with surrounding buildings, to provide stronger links with the extant residential cottages within the streetscape.

PLN s2

A Landscaping Plan prepared by a suitably qualified person for the landscaped spaces, private open space areas and other areas of planting around the site must be submitted and approved by the Council's Director City Planning prior to the issue of any consent under the *Building Act 2016*, excluding for demolition, excavation and works up to the ground floor slab.

The Landscaping Plan must include (in addition to that already proposed):

1. **More consideration to the provision and nature of additional landscaping on the Burnett Street Frontage.**
2. **Further details of the planter boxes, including how they will be managed, their size, and how they will be irrigated.**
3. **More consideration of additional deep planting at the rear of the site.**

All trees and landscaping must be planted and installed in accordance with the approved Landscaping Plan to the satisfaction of the Council's Director City Planning prior to commencement of use.

The trees and landscaping must be maintained, and replacement trees and landscaping in accordance with the approved Landscaping Plan must be planted if any is lost.

Confirmation by the person who prepared the landscaping plan (or an equivalent suitably qualified person) that the landscaping has been completed in accordance with the approved landscaping plan must be submitted to the Council to the satisfaction of the Director City Planning, prior to commencement of use. Once this has been received, and all landscaping shown on the approved Landscaping Plan has been planted in accordance with the approved plan to the satisfaction of the Council's Director City Planning, the Council will issue a statement confirming satisfactory planting of all trees and landscaping.

Reason for condition

To ensure that the development achieves a high standard of public amenity and to ensure appropriate landscaping close to the property boundary.

PLN s3

Prior to the issue of any approval under the *Building Act 2016,* (excluding for demolition, excavation and works up to the ground floor slab), a detailed design for the street level frontage must be submitted and approved, to the satisfaction of the Director City Planning. The detailed design must include (but is not limited to) the following:

1. **Ground level façade.**
2. **Paving.**
3. **Landscape elements (note also condition PLN s2 requiring a landscaping plan).**
4. **Street furniture.**
5. **Lighting.**
6. **Signage.**

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

Reason for condition

In the interest of the streetscape and townscape values of the surrounding area, to improve the transition and compatibility with surrounding buildings, to provide stronger links with the extant residential cottages within the streetscape.

ENG 12

A construction waste management plan must be implemented throughout construction.

A construction waste management plan must be submitted and approved, prior to commencement of work on the site. The construction waste management plan must include:

- **Provisions for commercial waste services for the handling, storage, transport and disposal of post-construction solid waste and recycle bins from the development; and**
- **Provisions for the handling, transport and disposal of demolition material, including any contaminated waste and recycling opportunities, to satisfy the above requirement.**

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

Advice:

Once the construction waste management plan has been approved, the Council will issue a condition endorsement (see general advice on how to obtain condition endorsement).

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.

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

Reason for condition

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

ENG sw1

All stormwater from the proposed development (including but not limited to: roofed areas, ag drains, and impervious surfaces such as driveways and paved areas) must be drained to the Council's stormwater infrastructure prior to first occupation or commencement of use (whichever occurs first). All stormwater which can drain to the connection via gravity must do so.

Reason for condition

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

ENG sw2.1

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 Council's stormwater infrastructure adjacent to the proposed development must be submitted to Council.

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 Council'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.**

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

Reason for condition

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

ENG sw2.2

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 Council's stormwater infrastructure adjacent to the proposed development must be submitted to Council.

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. Assets found to have a different alignment from that shown on Council'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.**

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

Reason for condition

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

ENG sw5

The new and/or upgraded stormwater infrastructure (main and connection) must be designed and constructed prior to sealing of the final plan, occupancy or the commencement of the approved use (whichever occurs first). All existing redundant connections must be abandoned.

Prior to the issuing of any approval under the *Building Act 2016* or commencement of works (whichever occurs first), detailed engineering drawings and associated calculations must be submitted and approved. 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 Council's published departures from those Drawings, and the Local Government Association of Tasmania, Tasmanian Subdivision Guidelines (October 2013);**

2. **Show the location of all existing connections. All existing redundant connections must be abandoned and the footpath/ kerb reinstated.**
3. **Clearly distinguish between public and private infrastructure;**
4. **Show in both plan and long-section the proposed stormwater main and connection, including but not limited to, connection, flows, velocities, hydraulic grade lines, clearances from other services, cover, gradients, sizing, material, pipe class, and inspection openings; and**
5. **Show the new/ upgraded public stormwater is sized to accommodate at least the 5% AEP event flows from a future fully-developed catchment.**

A structural condition assessment and visual record (ie a CCTV) of the new/ upgraded public stormwater main 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:

Council's preference, if practicable and maintaining capacity, would be for the DN300 to be lowered and upgraded. The infrastructure should be sized neglecting private detention. Fully-developed is to be taken as the maximum permitted under the planning scheme, unless demonstrated to be unsuitable.

The applicant is required submit detailed design documentation to satisfy this condition via the Council's planning condition endorsement process (noting there is a fee associated with condition endorsement approval of engineering drawings [see general advice on how to obtain condition endorsement and for fees and charges]). This is a separate process to any building approval under the Building Act 2016*.*

Failure to address condition endorsement requirements prior to submitting for building approval may result in unexpected delays.

Reason for condition

To ensure Council’s hydraulic infrastructure meets acceptable standards.

ENG sw7

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

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

1. **Include detailed design of the proposed treatment train, including final estimations of contaminant removal;**
2. **Include detailed design and supporting calculations of the detention tank showing:**
    1. **Detention tank sizing such that there is no increase in flows from the developed site up to 5% AEP event and flows are limited to the receiving capacity of Council infrastructure, taking critical timing of the infrastructure into account;**
    2. **The layout, the inlet and outlet (including long section), outlet size, overflow mechanism and invert level;**
    3. **The discharge rates and emptying times; and**
    4. **All assumptions must be clearly stated;**
3. **Include a supporting maintenance plan, which specifies the required maintenance measures to check and ensure the ongoing effective operation of all systems, such as: inspection frequency; cleanout procedures; descriptions and diagrams of how the installed systems operate; details of the life of assets and replacement requirements.**

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

Advice:

Once the design and report has been approved Council will issue a condition endorsement (see general advice on how to obtain condition endorsement).

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.

Reason for condition

To avoid the possible pollution of drainage systems and natural watercourses, and to comply with relevant State legislation.

ENG 13

An ongoing waste management plan for all commercial and domestic waste and recycling must be implemented post construction.

A waste management plan must be submitted and approved, prior to the issue of any approvals under the *Building Act 2016*. The waste management plan must:

1. **Include provisions for private waste services for the handling, storage, transport and disposal of domestic and commercial waste and recycle bins from the development.**

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

Advice:

The Council will not undertake waste collection for this development. Advice and permission should be sought from the Road Authority that administers the Burnett Street highway reservation with respect to private collection from the road carriageway.

Once the waste management plan has been approved Council will issue a condition endorsement (see general advice on how to obtain condition endorsement).

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.

Reason for condition

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

ENG tr2

A construction traffic and parking management plan must be implemented prior to the commencement of work on the site (including demolition).

The construction traffic (including cars, public transport vehicles, service vehicles, pedestrians and cyclists) and parking management plan must be submitted and approved, prior to commencement work (including demolition). The construction traffic and parking management plan must:

1. **Be prepared by a suitably qualified person.**
2. **Develop a communications plan to advise the wider community of the traffic and parking impacts during construction.**
3. **Include a start date and finish dates of various stages of works.**
4. **Include times that trucks and other traffic associated with the works will be allowed to operate.**
5. **Nominate a superintendant, or the like, to advise the Council of the progress of works in relation to the traffic and parking management with regular meetings during the works.**

All work required by this condition must be undertaken in accordance with the approved construction traffic and parking management plan.

Advice:

Once the construction traffic and parking management plan has been approved, the Council will issue a condition endorsement (see general advice on how to obtain condition endorsement).

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.

Reason for condition

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

ENG 3a

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 the provide a safe and efficient access, and enable safe, easy and efficient use.

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, prior to the 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. **Include a dedicated turning area in place of proposed car-parking space 11;**
3. **Include a maximum inside wheel path gradient of 25% on the proposed ramps;**
4. **Include full details of the proposed traffic signals including detailed timing information, a contingency plan for instances where the lights fail to operate, and details for any ongoing maintenance/testing requirements and repair;**
5. **Show the exit from the site to the Burnett Street highway reservation as left turn only;**
6. **Be generally in accordance with the Australian Standard AS/NZS2890.1:2004,**
7. **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, and**

8. **Show dimensions, levels, gradients and transitions, and other details as Council deem necessary to satisfy the above requirement.**

Advice:

Once the design has been approved, the Council will issue a condition endorsement (see general advice on how to obtain condition endorsement).

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.

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), including requirements for linemarking, signage, traffic control signals, and any other traffic control infrastructure, must be constructed in accordance with the drawings approved under this permit.

Prior to the first occupation or commencement of use (whichever occurs first), documentation by a suitably qualified engineer certifying that access driveway, circulation roadways, ramps and parking module (parking spaces, aisles and manoeuvring area), including requirements for linemarking, signage, traffic control signals, and any other traffic control infrastructure has been constructed in accordance with the above drawings must be lodged with the Council.

Advice:

Certification must be submitted via the planning condition endorsement process (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 and the approved design plans.

ENG 4

The access driveway and parking module (car 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 prior to the first occupation or commencement of use (whichever occurs first).

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 parking spaces approved on the site, for use is:

- **Fifty (50) User Class 1A residential parking spaces;**
- **Five (5) User Class 1A visitor parking parking spaces; and**
- **Five (5) User Class 1A employee parking spaces.**

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

Reason for condition

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

ENG 5b

A sign approved by the Council, for each of the user class 1A residential, visitor and employee car parking spaces, must be fixed to the wall at the

end of each parking space prior to first occupation or commencement of use (whichever occurs first). The signs must be in accordance with *AS 1742.11:2016 Manual of uniform traffic control devices, Part 11: Parking Controls* and must clearly state:

1. **"Visitor Parking Only" for the five visitor parking spaces;**
2. **"Employee Parking Only" for the five employee parking spaces; and**
3. **The apartment number that the parking space is allocated to for the residential parking spaces.**

Reason for condition

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

ENG 6

The ground floor car parking space shown as parking space number eleven (11) on the BPSM Architects plan 'DA202' Revision 6, and dated 12/05/2019 is not approved. Prior to the issue of any approvals under the *Building Act 2016* revised plans must be submitted and approved. The revised plans must:

1. **Show a dedicated turning area in place of parking space number 11;**
2. **Include white, diagonal linemarking within the turning area, using stripes 150 to 200mm wide with spaces 200 to 300mm between stripes, and the stripes at a 45 degree angle to the adjacent parking space; and**
3. **Show a sign on the wall adjacent to the turning area clearly stating "Turning Area Only - No Standing Any Time".**

Reason for condition

To ensure that parking facilities for cars are designed and constructed to enable safe, easy and efficient use.

ENG 8

The use of the fifty (50) car parking spaces on the lower ground and basement levels is restricted to User Class 1A (residential parking) in accordance with Australian Standards AS/NZS2890.1 2004 Table 1.1.

A sign, approved by the Council, and in accordance with Australian Standards AS/NZS1742.11:2016, to indicate the parking area is for residents only must be erected adjacent to the traffic control signal on the ground floor prior to the first occupation or commencement of use (whichever occurs first).

Reason for condition

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

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.**

Any damage must be immediately reported to Council.

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

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

Reason for condition

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

ENG r1

The excavation or earth-retaining structures (cuttings, retaining walls) or footings within or supporting the highway reservation must not undermine the stability and integrity of the highway reservation and its infrastructure.

Detailed design drawings, structural certificates and associated geotechnical assessments of the items above within the Burnett Street highway reservation must be submitted and approved, prior to any approval under the *Building Act 2016*:

1. **Be prepared and certified by a suitable qualified person and experienced engineer.**
2. **Not undermine the stability of the highway reservation.**
3. **Be designed in accordance with AS4678, with a design life in accordance with table 3.1 typical application major public infrastructure works.**
4. **Take into account any additional surcharge loadings as required by relevant Australian Standards.**
5. **Take into account and reference accordingly any Geotechnical findings.**
6. **Detail any mitigation measures required.**
7. **Detail the design and location of the footing adjacent to Burnett Street.**

The structure certificated and/or drawings should note accordingly the above.

All work required by this condition must be undertaken in accordance with the approved select design drawing and structural certificates.

Advice:

The applicant is required submit detailed design documentation to satisfy this condition via Council's planning condition endorsement process (noting there is a fee associated with condition endorsement approval of engineering drawings [see general advice on how to obtain condition endorsement and for fees and charges]). This is a separate process to any building approval under the Building Act 2016.

Failure to address condition endorsement requirements prior to submitting for building approval may result in unexpected delays.

Reason for condition

To ensure that the stability and integrity of the Council's highway reservation is not compromised by the development.

ENG r3

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

- **Urban - TSD-R09-v2 – Urban Roads Driveways and TSD R14-v2 Type KC vehicular crossing.**
- **Footpath - Urban Roads Footpaths TSD-R11-v2.**
- **Concrete kerbs and channels - TSD-R14-v2 - Reinstate redundant driveway crossover.**

Design drawings must be submitted and approved prior to any approval under the *Building Act 2016*. The design drawing must:

1. **Show the cross and long section of the driveway crossover within the highway reservation and onto the property.**
2. **Detail any services or infrastructure (i.e. light poles, pits, awnings) at or near the proposed driveway crossover.**
3. **Show swept path templates in accordance with AS/NZS 2890.1 2004(B85 or B99 depending on use, design template).**
4. **If the design deviates from the requirements of the TSD then the drawings must demonstrate that a B85 vehicle or 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 cars underside.**
5. **Show that vehicular and pedestrian sight lines are met as per AS/NZS 2890.1 2004.**
6. **Grated wedge, asphalt wedge and the standard open wedge driveway crossover are not permitted. Grated wedges are permits on highly used bike routes and details of the grate (ie mass) will be required. To gain access a concrete plinth to Councils standards may be**

constructed at the gutter. A drawing of a standard concrete plinth can be obtained from Councils Road Services Engineer. Note: that the agreement of the Council's is required to adjust footpath levels.

7. **Be prepared and certified by a suitable qualified person, to satisfy the above requirement.**

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

Advice:

The applicant is required submit detailed design documentation to satisfy this condition via Council's planning condition endorsement process (noting there is a fee associated with condition endorsement approval of engineering drawings [see general advice on how to obtain condition endorsement and for fees and charges]). This is a separate process to any building approval under the Building Act 2016*.*
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.

Failure to address condition endorsement requirements prior to submitting for building approval may result in unexpected delays.

Reason for condition

To ensure that works will comply with the Council's standard requirements.

ENV 2

An approved Demolition and Construction Environmental Management Plan, prepared by suitably qualified persons, must be implemented.

A Demolition and Construction Environmental Management Plan must be submitted and approved prior to the commencement of works and prior to the granting of building consent.

The plan must include, but is not limited to, the following:

1. Details of the proposed construction methodology and expected likely timeframes.

2. The proposed days and hours of work and proposed hours of activities likely to generate significant noise emissions (including volume and timing of heavy vehicles entering and leaving the site).

3. Details of potential environmental impacts associated with the development works including noise, vibration, erosion and pollution (air, land and water).

4. Details of proposed measures to avoid or mitigate to acceptable levels all identified potential environmental impacts during development works including, but not limited to:

a. **A noise and vibration management plan including, but not limited to:**

i. **identification of potentially noisy or vibration-causing construction activities;**

ii. **procedures to ensure that all reasonable and feasible noise and vibration mitigation measures are applied during operation of the construction management plan; and**

iii. **details of monitoring measures and triggers for corrective actions.**

b. **A soil and water management plan including:**

i. **measures to minimise erosion and the discharge of contaminated stormwater off-site;**

ii. **measures to minimise dust emissions from the site;**

iii. **measures to manage the disposal of surface and groundwater from any excavations; and**

iv. **measures to prevent soil and debris being carried onto the street.**

5. Details of proposed responsible persons, public communication protocols, compliance, recording and auditing procedures and complaint handling and response procedures.

The approved Demolition and Construction Environmental Management Plan forms part of this permit and must be complied with.

Advice:

Once the plan has been approved the Council will issue a condition endorsement (see general advice on how to obtain condition endorsement).

Reason for condition

To minimise the potential for environmental impacts from the construction works

ENVHE 1

Recommendations in the Planning report (2020) for Behrakis Holdings Pty Ltd 40 & 42-44 Burnett Street, ESA by GES enviro-solutions must be implemented throughout the construction of the project

Reason for condition

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

SURV 8

The applicant, at no cost to the Council, must have prepared, entered into, and have registered at the Land Titles Office, a deed pursuant to Section 75CA of the *Conveyancing and Law of Property Act 1884* for the awning encroachment over Burnett Street, prior to the issue of a completion certificate.

Advice:

A Section 75CA Conveyancing & Law of Property Act 1884 *certificate for the occupation of a Highway requires that the encroachment is a minimum 2.40 metres above the footpath or 4.25 metres above the road carriageway. A 600mm set back from the back of kerb may also be required.*

The applicant must prepare and forward the required instrument pursuant to section 75CA Conveyancing & Law of Property Act 1884*, including a survey plan of the encroachment (certified by a registered surveyor), the associated $220 Council application fee and the Land Titles Office registration fee, to the Council for execution and subsequent registration within the Land Titles Office.*

Reason for condition

To ensure that the proposed building encroachment over Burnett Street is formalised in accordance with statutory provisions.

ENG 14

Access and services to the lot must be designed and installed to meet the needs of future development, prior to the sealing of the final plan or commencement of the use (whichever occurs first).

Reason for condition

To ensure that the subdivision of land provides adequate services to meet the projected needs of future development.

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 the Council.

Reason for condition

To ensure that the developer provides the Council with clear written confirmation that the separation of services is complete.

SUB s1

The titles comprising the development site (CT 211936/1 and CT 228032/1) are to be adhered in accordance with the provisions of Section 110 of the *Local Government (Building and Miscellaneous Provisions) Act 1993*, to the satisfaction of the Council prior to the issue of any building consent, building permit (including demolition) and / or plumbing permit pursuant to the *Building Act 2016* (if applicable), or the commencement of works on site (whichever occurs first).

Reason for condition

To ensure compliance with statutory provisions

Advice

The application for an adhesion order to the Council has a fee of $230. Evidence will be required that the owners and mortgagees do not object to the adhesion and the condition is considered completed when a copy of the receipt for the Land Titles Office lodgement slip for the adhesion order has been received by the Council. Note that the titles must be in the same ownership to enable them to be adhered by means of an adhesion order.

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 ENGINEERING

All engineering drawings required to be submitted and approved by this planning permit must be submitted to the City of Hobart as a CEP (Condition Endorsement) via the City's Online Service Development Portal. When lodging a CEP, please reference the PLN number of the associated Planning Application. Each CEP must also include an estimation of the cost of works shown on the submitted engineering drawings. Once that estimation has been confirmed by the City's Engineer, the following fees are payable for each CEP submitted and must be paid prior to the City of Hobart commencing assessment of the engineering drawings in each CEP:

Value of Building Works Approved by Planning Permit Fee:
Up to $20,000: $150 per application.
Over $20,000: 2% of the value of the works as assessed by the City's Engineer per assessment.

These fees are additional to building and plumbing fees charged under the Building and Plumbing Regulations.

Once the CEP is lodged via the Online Service Development Portal, if the value of building works approved by your planning permit is over $20,000, please contact the City's Development Engineer on 6238 2715 to confirm the estimation of the cost of works shown on the submitted engineering drawings has been accepted.

Once confirmed, pleased call one of the City's Customer Service Officers on 6238 2190 to make payment, quoting the reference number (ie. CEP number) of the Condition Endorsement you have lodged. Once payment is made, your engineering drawings will be assessed.

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.

PUBLIC HEALTH

You may be required to provide approved/endorsed plans for a food business fit out, in accordance with the National Construction Code - Building Code of Australia including Tas Part H102 for food premises which must have regard to the FSANZ Food Safety Standards. Click here for more information.

FOOD BUSINESS REGISTRATION

Food business registration in accordance with the *Food Act 2003*. Click here for more information.

PUBLIC HEALTH RISK

Public health risk activities (tattooing and piercing) licence. Click here for more information.

OCCUPATION OF THE PUBLIC HIGHWAY

You may require a permit for the occupation of the public highway for construction or special event (e.g. placement of skip bin, crane, scissor lift etc). Click here for more information.

You may require an occupational licence for use of Hobart City Council highway reservation (e.g. outdoor seating, etc). Click here for more information.

You may require an cccupational license for structures in the Hobart City Council highway reservation, in accordance with conditions to be established by the Council. Click here for more information.

You may require a road closure permit for construction or special event. Click here for more information.

You may require a Permit to Open Up and Temporarily Occupy a Highway (for work in the road reserve). Click here for more information.

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).

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.

CBD AND HIGH VOLUME FOOTPATH CLOSURES

Please note that the City of Hobart does not support the extended closure of public footpaths or roads to facilitate construction on adjacent land.

It is the developer's responsibility to ensure that the proposal as designed can be constructed without reliance on such extended closures.

In special cases, where it can be demonstrated that closure of footpaths in the CBD and/or other high volume footpaths can occur for extended periods without unreasonable impact on other businesses or the general public, such closures may only be approved by the full Council.

For more information about this requirement please contact the Council's Traffic Engineering Unit on 6238 2804.

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.

TITLE ADHESION

An adhesion of your titles is required because a portion of your development is across one or more title boundaries. Contact your solicitor or a registered land surveyor to initiate the process.

WEED CONTROL

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

WORK PLACE HEALTH AND SAFETY

Appropriate occupational health and safety measures must be employed during the works to minimise direct human exposure to potentially-contaminated soil, water, dust and vapours. Click here for more information.

PROTECTING THE ENVIRONMENT

In accordance with the *Environmental Management and Pollution Control Act 1994*, local government has an obligation to "use its best endeavours to prevent or control acts or omissions which cause or are capable of causing pollution." Click here for more information.

LEVEL 1 ACTIVITIES

The activity conducted at the property is an environmentally relevant activity and a Level 1 Activity as defined under s.3 of the *Environmental Management and Pollution Control Act 1994*. For further information on what your responsibilities are, click here.

NOISE REGULATIONS

Click here for information with respect to noise nuisances in residential areas.

WASTE DISPOSAL

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

Further information regarding waste disposal can also be found on the Council's website.

FEES AND CHARGES

Click here for information on the Council's fees and charges.

DIAL BEFORE YOU DIG

Click here for dial before you dig information.

Attachment A:	PLN-20-633 - 40 BURNETT STREET NORTH HOBART TAS 7000 - Planning Committee or Delegated Report ⇩
Attachment B:	DA-20-62774 PLN-20-633 - 40 BURNETT STREET NORTH HOBART TAS 7000 - CPC Agenda Documents ⇩
Attachment C:	PLN-20-633 - 40 BURNETT STREET NORTH HOBART TAS 7000 - Planning Referral Officer Cultural Heritage Report ⇩
Attachment D:	PLN-20-633 - 40 BURNETT STREET NORTH HOBART TAS 7000 - Development Engineering Referral Officer Report ⇩
Attachment E:	PLN-20-633 - 40 BURNETT STREET NORTH HOBART TAS 7000 - UDAP Minutes ⇩

City of HOBART

APPLICATION UNDER HOBART INTERIM PLANNING SCHEME 2015

Type of Report:	Committee
Committee:	16 November 2020
Expiry Date:	3 December 2020
Application No:	PLN-20-633
Address:	40 BURNETT STREET , NORTH HOBART 42 - 44 BURNETT STREET , NORTH HOBART ADJACENT ROAD RESERVE
Applicant:	(JMG Engineers and Planners) 117 Harrington Street
Proposal:	Demolition, New Building for 31 Multiple Dwellings and General Retail and Hire, Subdivision (Lot Consolidation), Alterations to Access, and Associated Works
Representations:	Six
Performance criteria:	Commercial Zone Development Standards, Potentially Contaminated Land Code, Road and Railway Assets Code, Parking and Access Code, Stormwater Management Code, Attenuation Code, Historic Heritage Code

1. Executive Summary

1.1 Planning approval is sought for Demolition, New Building for 31 Multiple Dwellings and General Retail and Hire, Subdivision (Lot Consolidation), Alterations to Access, and Associated Work, at 40 Burnett Street, 42-44 Burnett Street, North Hobart and adjacent road reserve.

1.2 More specifically the proposal includes:

- Demolition of the existing buildings on the site. This includes a single storey dwelling and outbuilding at 40 Burnett Street and a large warehouse at 42-44 Burnett Street.
- Consolidation of the two lots at 40 and 42-44 Burnett Street into one single title lot 1128m^2 in size.
- Construction of a new building that would include 31 apartments. A ground floor tenancy is also proposed for a General Retail and Hire use.
- The proposed building would have a maximum of 5 storeys as well as two below ground basement levels. The building would have a maximum roof height above natural ground level of 16.2m and, when including the lift shaft, a maximum building height of 18.4m. Proposed external materials include precast concrete panels walls, metal sheet cladding, and aluminium composite panels.
- The ground floor of the building would have a foot print of approximately 1050m^2 and will occupy nearly the entire area of the lot. The ground floor will include a vehicle entrance from Burnett Street, residential pedestrian entrance from Burnett Street, a commercial tenancy with 177m^2 of floor area, visitor car parking, residential car parking, bicycle parking, storage, garbage room, and services space. An awning over the Burnett Street road reservation will also be constructed as well as planter boxes on the exterior of the ground floor facing the frontage. The existing crossover from Burnett Street is also proposed to be enlarged.
- The two basement levels will each contain 25 residential car parking spaces each, bicycle parking, and storage areas. Each floor will be accessible to vehicles by single lane internal ramps with movement controlled by an internal traffic light system.
- Levels 1, 2, and 3 will have the same layout with nine apartments proposed on each level. This will include 1 one bedroom apartment, 5 two bedroom apartments and 3 three bedroom apartments
- Level 4 will contain four dwellings with 1 two bedroom apartment and 3 three bedroom apartments.

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

1.3.1 Commercial Zone -Building Height, Design, Landscaping
1.3.2 Potentially Contaminated Land Code - Use Standards, Excavation
1.3.3 Road and Railway Assets Code - Existing Road Accesses and Junctions

1.3.4 Parking and Access Code - Number of Car Parking Spaces, Number of Motorcycle Parking Spaces, Design of Vehicular Accesses, On-Site Turning, Layout of Parking Areas, Surface Treatment of Parking Areas, Design of Bicycle Parking Facilities

1.3.5 Stormwater Management Code - Stormwater Drainage and Disposal

1.3.6 Attenuation Code - Development for Sensitive Use in Proximity to Use with Potential to Cause Environmental Harm

1.3.7 Historic Heritage Code - Development Standards for Places of Archaeological Potential - Building, Works and Demolition

1.4 One (1) representation supporting the proposal and Five (5) representations objecting to the proposal were received within the statutory advertising period between 28/10/20 - 11/11/20.

1.5 The application was considered by the Urban Design Advisory Panel at its meeting on 5 November 2020. The Panel were broadly supportive of the proposal.

1.5 The proposal is recommended for approval subject to conditions.

1.6 The final decision would ordinarily be delegated to the Council, because the application is a major development. However, at its meeting of 9 November 2020 the Council resolved to delegate to the the City Planning Committee, the power to determine this planning application.

2. Site Detail

2.1 The subject site is located at 40 and 42-44 Burnett Street, North Hobart and comprises two single title lots both with a frontage to Burnett Street along their north eastern boundaries. The lots are 384m^2 and 734m^2 in size, respectively and presently comprise a single storey brick cottage with rear outbuilding, large warehouse, and hardstand loading area and carpark. The building at 40 Burnett Street was previously a residential dwelling whilst the building at 42-44 Burnett Street previously serves as a commercial premises for a windscreen repair workshop. The sites slope gradually upward to the south east, away from the Burnett street frontage, as well as upward to the south west towards the adjacent property at 48 Burnett Street. A site inspection was conducted at the site and surrounding area in October 2020.

2.2 The land to the south east and south east is similar commercial land. there are commercial buildings on the adjoining properties at 48 Burnett Street and 270 Argyle Street. A building to the north east at 38 Burnett Street is presently occupied as an office but previously served as dwelling, similar to 40 Burnett Street, both building share the same design. The remaining adjacent properties at 272 and 274 Argyle Street, to the east of the subject site, are presently occupied as single dwellings. There are further residential and commercial uses on the opposite side of Burnett Street and further north along Argyle Street. Further commercial and light industrial uses can be found to the east, south and west of the subject site including car showrooms, retails outlets and offices. The entrance to the North Hobart precinct is located further to the east at the intersection of Burnett and Elizabeth Streets.

Figure 1: Aerial image of the subject sites (bordered in blue) and surrounding area.

Figure 2: Aerial image of the subject sites (bordered in blue) and surrounding area overlaid with zoning map (key: purple: Commercial Zone; light grey: Urban Mixed Use Zone; pink: Light Industrial Zone; dark red: Inner Residential Zone; yellow: Utilities Zone).

3. Proposal

3.1 Planning approval is sought for Demolition, New Building for 31 Multiple Dwellings and General Retail and Hire, Subdivision (Lot Consolidation), Alterations to Access, and Associated Work, at 40 Burnett Street, 42-44 Burnett Street, North Hobart and adjacent road reserve.

3.2 More specifically the proposal is for:

- Demolition of the existing buildings on the site. This includes a single storey dwelling and outbuilding at 40 Burnett Street and a large warehouse at 42-44 Burnett Street.
- Consolidation of the two lots at 40 and 42-44 Burnett Street into one single title lot 1128m^2 in size.
- Construction of a new building that would include 31 apartments. A ground floor tenancy is also proposed for a General Retail and Hire use.
- The proposed building would have a maximum of 5 storeys as well as two below ground basement levels. The building would have a maximum roof height above natural ground level of 16.2m and, when including the lift shaft, a maximum building height of 18.4m. Proposed external materials include precast concrete panels walls, metal sheet cladding, and aluminium composite panels.
- The ground floor of the building would have a foot print of approximately 1050m^2 and will occupy nearly the entire area of the lot. The ground floor will include a vehicle entrance from Burnett Street, residential pedestrian entrance from Burnett Street, a commercial tenancy with 177m^2 of floor area, visitor car parking, residential car parking, bicycle parking, storage, garbage room, and services space. An awning over the Burnett Street road reservation will also be constructed as well as planter boxes on the exterior of the ground floor facing the frontage. The existing crossover from Burnett Street is also proposed to be enlarged.
- The two basement levels will each contain 25 residential car parking spaces each, bicycle parking, and storage areas. Each floor will be accessible to vehicles by single lane internal ramps with movement controlled by an internal traffic light system.
- Levels 1, 2, and 3 will have the same layout with nine apartments proposed on each level. This will include 1 one bedroom apartment, 5 two bedroom apartments and 3 three bedroom apartments
- Level 4 will contain four dwellings with 1 two bedroom apartment and 3 three bedroom apartments.

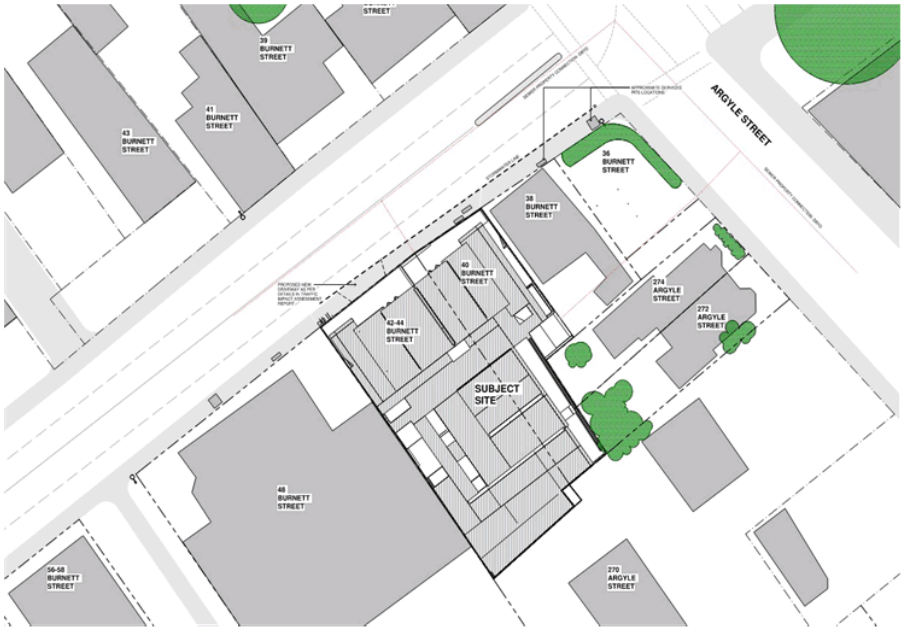


Figure 3: Site plan of proposed development.

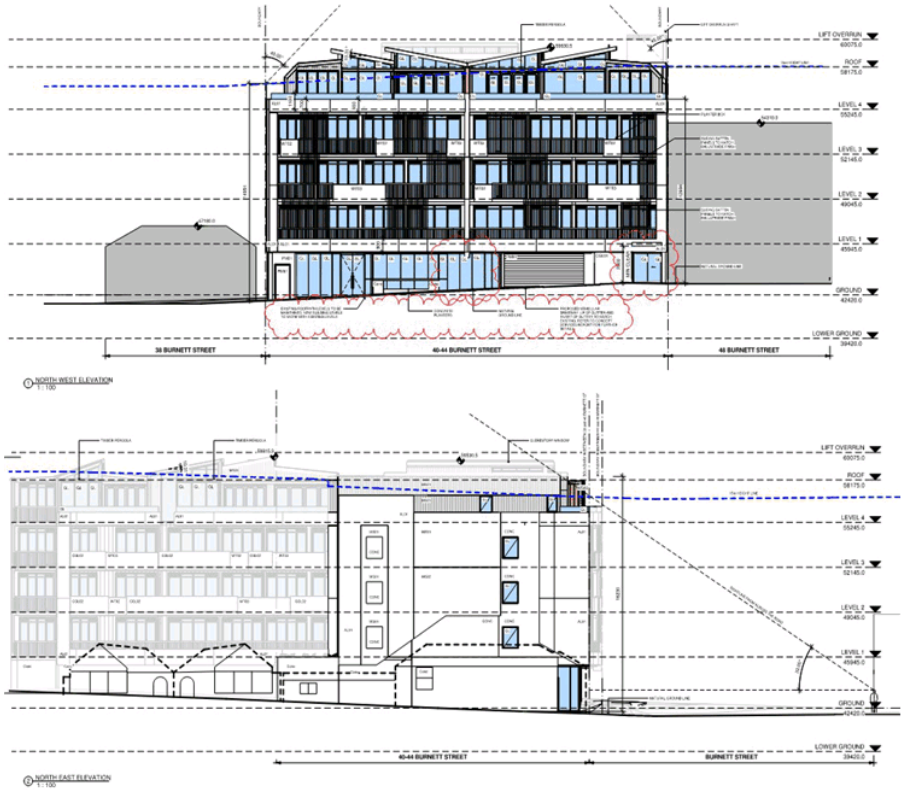


Figure 4: North west and north east elevations of proposed development.

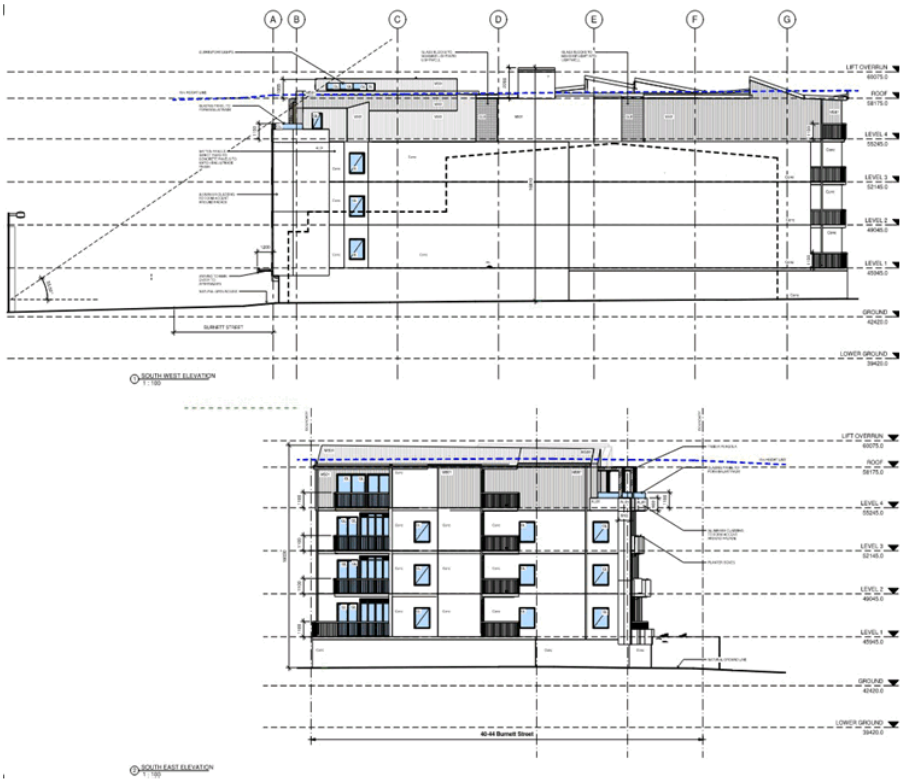


Figure 5: South west and south east elevations of proposed development

Figure 6: Photomontages of proposed development from Elizabeth Street and Burnett Street.

Figure 7: Photomontages of proposed development from Argyle Street and Burnett Street.

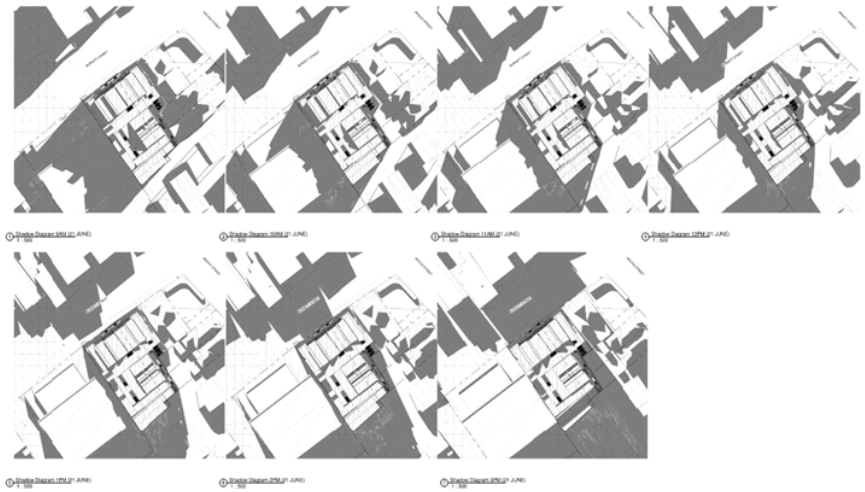


Figure 8: Projected shadow diagrams of proposed development 9:00am to 3:00pm on 21 June.

4. Background

4.1 The application was considered at Pre-Application Stage by Council's Urban Design Advisory Panel (UDAP) at its meeting on 27 August 2020. The minutes from this meeting are provided as Attachment E.

4.2 This application was received in September 2020 although it was not considered valid until the General Manager's consent was received on 23 October 2020. This consent was required as the application includes an awning over a section of the Burnett Street road reservation and a widening of the crossover on the same road reservation.

4.3 The submitted application was considered by UDAP at its meeting on 5 November 2020. The minutes from this meeting are provided as Attachment E. The minutes state that:

"The proposed development is quite intensive and the Panel still held misgivings about the very small or non-existent setbacks from side and rear boundaries, including where the building overlooks the rear of two heritage listed cottages that front Argyle Street.

The Panel acknowledged that this part of the city is likely to be developed more intensively than exists at present, and that the proposed building may reasonably be considered in that context. The proposal may initially appear quite prominent, because of the relatively underdeveloped sites around it, but the passage of time is likely to change that.

Overall, the Panel regarded the proposed height of the building as reasonable. However, it did feel that the top storey and roof is un-necessarily complex in form and is likely to draw the eye and emphasise the building's height. The Panel would prefer a simpler and more recessive form for this storey.

The contrast in height and bulk between the neighbouring cottages (at 38 Burnett Street and 272 and 274 Argyle Street) and the proposed building is quite abrupt, however the heights permitted by the Scheme would seem to give this difference a degree of inevitability.

As the building is to be essentially residential, it was felt that it would benefit the complex to give the residential entrance more prominence - to give it a design treatment which greets the residents and makes the entrance more apparent and welcoming, for example a change of paving and wall finishes, a seat, planting at ground or higher. This could also create a 'linkage' to the residential character of the cottage at no 38 Burnett Street. The elements or materials for the entry could possibly extend beyond the site boundary to include part of the public domain."

4.4 The proposal was placed on advertising between 28 October 2020 and 11 November 2020. Council received six (6) representations during this advertising period.

5. Concerns raised by representors

5.1 Six (6) representations were received within the statutory advertising period between 28/10/20 - 11/11/20 including five (5) that objected to the proposal and one (1) that expressed support for the proposal.

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.

Heritage • Do not support the demolition of the dwelling at 40 Burnett Street and do not believe that the proposal will enhance the aesthetics of the historic values of the North Hobart district. • Demolition of the dwelling at 40 Burnett Street cannot be allowed due to historic values
Parking • The number of parking spaces is inadequate • No provision is made for motorcycles • The proposal assumes casual arrangements ca be made for parking in Burnett Street and other neighbouring streets or roads which is an assumption that does not meet reality where there is a steady increase in competition for daytime parking in the area • The provisions of the Interim Planning Scheme should not be relaxed for a development where parking requirements have been clearly identified and provided for within the Code
Traffic Movement • Access from Burnett Street will be difficult considering the high volume of traffic currently passing through the Burnett and Argyle Street intersections and use of the site will exacerbate traffic delays.
Height • Concern for the height of the proposal and that the transition with the one storey dwelling is not demonstrated • Acceptance that heights are not substantially above acceptable solution but the proposal represents a significant addition to the streetscape and that gradual creep above Scheme limits should not be encourage
Amenity • Impacts to views of the Domain from Burnett Street • Loss of privacy to adjoining dwellings from higher apartments • Loss of sunlight to adjoining lots through overshadowing including to buildings which rely upon natural lighting skylights • Submitted planning report did not adequately consider social impacts to neighbouring residential properties.

Design • Concerns for the siting of the proposed development and the lack of setbacks from the frontage and side boundaries
Assessment Process • Concern that approval process will be kept transparent and that any potential conflict of interest issues between the developer and Council are managed appropriately • Desire for more time to consider the advertised plans and suggestion that the developer approach neighbouring properties for stakeholder negotiations

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 existing use is Bulky Goods Sales and Residential (single dwelling). The proposed use is Residential (multiple dwellings) and General Retail and Hire. The existing uses are Discretionary and Permitted uses in the zone. The proposed uses are Permitted and Discretionary uses in the zone.

6.4 The proposal has been assessed against:

6.4.1 D23.0 Commercial Zone

6.4.2 E2.0 Potentially Contaminated Land Code

6.4.3 E5.0 Road and Railway Assets Code

6.4.4 E6.0 Parking and Access Code

6.4.5 E7.0 Stormwater Management Code

6.4.6 E9.0 Attentuation Code

6.4.7 E13.0 Historic Heritage Code

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

6.5.1 Commercial Zone Development Standards

Building Height - D23.4.1 P1
Design D23.4.3 P1
Landscaping D23.4.5 P1

6.5.2 Potentially Contaminated Land Code

Use Standards - E2.5 P1
Excavation - E2.6.2 P1

6.5.3 Road and Railway Assets Code

Existing Road Accesses and Junctions - E5.6.1 P3

6.5.4 Parking and Access Code

Number of Car Parking Spaces - E6.6.1 P1
Number of Motorcycle Parking Spaces - E6.6.3 P1
Design of Vehicular Accesses - E6.7.2 P1
On-Site Turning - E6.7.4 P1
Layout of Parking Areas - E6.7.5 P1
Surface Treatment of Parking Areas - E6.7.6 P1
Design of Bicycle Parking Facilities - E6.7.10P1

6.5.5 Stormwater Management Code

Stormwater Drainage and Disposal - E7.7.1 P1; P2

6.5.6 Attenuation Code

Development for Sensitive Use in Proximity to Use with Potential to Cause Environmental Harm - 9.7.2 P1

6.5.7 Historic Heritage Code

Development Standards for Places of Archaeological Potential - Building, Works and Demolition - E13.10.1 P1

6.6 Each performance criterion is assessed below.

6.7 Building Height - D23.4.1 P1

6.7.1 The acceptable solution at clause 23.4.1 A1 requires that building height must be no more than 15m high and a maximum of 4 storeys, if the development provides at least 50% of the floor space above ground level for residential use.

6.7.2 The proposal includes at least 50% of floor space above the ground level for residential use and has a maximum roof height of 16.3m with a lift well protruding to a total building height of 18.4m.

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 23.4.1 P1 provides as follows:

Building height must satisfy all of the following:

(a) be consistent with any Desired Future Character Statements provided for the area;
(b) be compatible with the scale of nearby buildings;
(c) not unreasonably overshadow adjacent public space;
(d) allow for a transition in height between adjoining buildings, where appropriate;

6.7.5 The proposed building will be five storeys with a roof height of between 16.2m and 16.3m and a total building height of 18.4m when accounting for the lift well. The ground floor will include an entrance (pedestrian and vehicles), parking, storage, services, and a retail tenancy. The remaining floors will include residential uses which will account for more than 50% of the floor space above the ground floor. Under the Commercial Zone no Desired Future Character Statements exists, therefore subclause (a) is not considered applicable.

6.7.6 With respect to subclause (b),the term "compatible" is not defined in the planning scheme. However, in a recent decision of the Resource Management and Planning Appeal Tribunal (*Henry Design and Consulting v Clarence City Council & Ors [2017] TASRMPAT 11*) compatible was considered to mean “consistent with, similar to, in harmony with, and in broad correspondence with”. In another Tribunal

decision (*9 Sandy Bay Road Pty Ltd v Hobart City Council & Ors [2017]TASRMPAT 19*), "compatible" was found to mean, in relation to building height, that a building was "capable of coexisting with the scale of nearby buildings". In the same decision, "nearby" was found to mean "close to". Therefore, for the purposes of this assessment, nearby buildings are considered to include the buildings on adjoining lots.

6.7.7 An assessment of the proposal against the above performance criterion must take into account the objective for the above clause, which is:

To ensure that building height contributes positively to the streetscape and does not result in unreasonable impact on residential amenity of land in a residential zone.

6.7.8 According to the planning scheme, "streetscape":

means the visual quality of a street depicted by road width, street planting, characteristics and features, public utilities constructed within the road reserve, the setbacks of buildings and structures from the lot boundaries, the quality, scale, bulk and design of buildings and structures fronting the road reserve. For the purposes of determining streetscape with respect to a particular site, the above factors are relevant if within 100 m of the site.

6.7.9 The scale of the proposed development should be considered in the context provided by the objective for the above clause and must make a positive contribution to surrounding streetscapes, that is consistent with and in harmony with the scale of nearby buildings. As the subject site has only one frontage and will be built close to the full extent of the site, the proposed development will have a high degree of visibility from Burnett Street. Photo montage views from the immediate Burnett Street frontage as well as perspectives from Argyle Street and Elizabeth street have been provided as part of the submitted documentation and are supplied in Figures 6 and 7. The proposed development would sit at a minimum of 35m from the nearby Argyle Street and Burnett Street intersection. In contrast, the proposed development would sit at a minimum of 147m from the Elizabeth Street and Burnett Street intersection.

6.7.10 Given the close proximity, the views from Argyle Street indicate that there will be a similar high degree of visibility as when viewing the development from the immediate Burnett Street area. This visibility is exacerbated by the street being sited at a lower topographical position and having only single storey buildings between this street and the subject site. The

existing Argyle Street streetscape contains a mixture of two heritage houses, retail buildings, car yards and similar light industrial and warehouse uses. Whilst two heritage properties at 272 and 274 Argyle Street do maintain what reflected the streetscape of an earlier era, the overall present streetscape can be reasonably assessed to have a low visual quality. In spite of the high degree of visibility, the proposed development is not considered to dominate the streetscape or decrease the visual quality of the street.

6.7.11 The view from Elizabeth Street, which is at a greater distance demonstrates that the proposal has much less visibility as it will be shielded by adjoining buildings the view illustrates the proposal as keeping in the scale with other buildings on the same frontage. Given the low degree of visibility from this frontage the proposed development is not considered likely to dominate the streetscape.

6.7.12 In the immediate proximity along Burnett Street the proposed development will be adjacent to a single storey building to the east, at 38 Burnett Street. To the west, 48 Argyle Street contains a retail premises and large warehouse with a height equivalent to between one and three storeys. The proposed development would create a difference of four storeys against 38 Burnett Street and between one and three storeys against 48 Burnett Street. These details certainly illustrate a noted contrast, and whilst the proposed development height will be greater than that of nearby buildings, it is assessed as remaining reasonably similar the existing surrounding development and therefore not inconsistent with the established pattern of development in the area. In spite of the greater four storey height difference between 38 Burnett Street and the subject, the compatibility is determined as appropriate given that the proposed design elements demonstrate a correspondence with the adjoining dwelling providing a cohesive and complementary response to the the nearby built form.

6.7.13 With respect to subclause (c) the site is adjacent to Burnett Street. The site is not adjacent to other areas of public space. Supplied shadow diagrams have demonstrated that there will be no significant overshadowing of public footpaths along Burnett Street beyond what is caused by the existing buildings on the site. It is assessed that the overshadowing of these areas is not considered unreasonable given the use of the space and the limited time in which it is impacted.

6.17.14 Sub-clause (d) requires a transition in height between adjoining buildings, where appropriate. One of the Tribunal decisions mentioned above (*9*

Sandy Bay Road Pty Ltd v Hobart City Council & Ors [2017] TASRMPAT 19) also considered the meaning of "adjoining". "Adjoining" was found to mean "next to" but not to imply that there must be physical connection between adjoining buildings. Therefore, the relevant adjoining buildings when considering the proposal against sub-clause (d) include the residential buildings to the east, commercial buildings to the south east, and commercial building to the west. It is noted that the dwelling located at 38 Burnett Street was originally constructed as a dwelling but is not currently used for residential purposes.

6.7.15 The above decision also found that "the question of scale is one of fact, not impression" i.e. when considering the scale of a proposed development, how it would be perceived is not a relevant consideration. Instead, the Tribunal found that a consideration of the compatibility of scale should be based upon a comparison of quantitative measures such as the height above ground level of proposed and existing development.

6.7.16 The relationship between the proposed development and the existing building at 38 Burnett Street, which is to the west of the subject site, is shown in the north west and north east elevations of Figure 4 and photomontages of Figures 6 and 7 which provides an illustrative example of the transition between adjoining buildings. As noted above, the building is presently operating as an office. The elevation plan has a height of 5.3m for 38 Burnett Street and a height of 13.9m at the parapet wall on the shared boundary and 16.2m on the roof of the upper floor for the proposed development. This would create a difference of between 8.6m and 10.9m. Representations received during the public notification period cited concerns with the transition proposed between these buildings.

6.7.17 It is noted that whilst this represents a greater contrast in height differences than what presently exists, the plans illustrate there is limited space between buildings on the lots, and between buildings and the shared side boundary so as to allow for a gradual transition to the proposed height. In addition, design elements on the south west elevation of the proposed development have been made in an effort to establish a responding relationship between these buildings and further contributing positively to the streetscape along both Burnett and Argyle Streets. The adjoining land also falls under the same Commercial Zoning and is not presently operating as Residential use therefore no impacts upon residential amenity in conflict with the clause objective is demonstrated. Whilst not relevant for the above assessment, it is also noted that the property is not listed under the Historic Heritage Code and could therefore potentially accommodate a development of a similar height

which would further improve upon any built form transitions moving along Burnett Street to the south east. Whilst additional efforts could be made to increase this transition either through greater setbacks or the inclusion of a plinth or podium level, the proposed elements of the development are assessed as remaining sufficient for allowing a transition in the limited space that is appropriate.

6.7.18 The issue of transition between 38 Burnett Street and the subject site was also noted by Council's Urban Design and Advisory Panel. As part of their comments following the meeting of 5 November 2020 they provided the following comments:

The contrast in height and bulk between the neighbouring cottages (at 38 Burnett Street and 272 and 274 Argyle Street) and the proposed building is quite abrupt, however the heights permitted by the Scheme would seem to give this difference a degree of inevitability.

The Panel felt it was important to achieve an improved transition at and near street level, where this contrast can to some extent be alleviated. The Panel felt that the development could utilise some elements or characteristics of the cottage at Number 38 within the frontage of the new development particularly at street level, and that the design and choice of materials along the street is of great importance.

One of the suggestions was the use of planter boxes with places to sit along the street level frontage, in particular along the property boundary and encouraging the use of brick or masonry in the ground floor elevation to provide stronger links with the extant residential cottages within the streetscape.

6.7.19 The existing building at 48 Argyle Street and its relationship with the proposed development is illustrated in the north west elevation of Figure 4 and photomontages of Figures 6 and 7. This building is between 5.2 and 11.3m in height which compared against the proposed development is considered to be of a similar height and therefore represents an appropriate transition.

6.7.20 The relationship between the proposed development and the existing dwellings at 272 and 274 Argyle Street is similar to that with 38 Burnett Street in that both contain single storey buildings of a similar height and era of construction. It is noted however that both Argyle Street properties operate as Dwellings. The height comparison between these buildings is illustrated on the north east elevation shown in Figure 4 as well as the

photomontages of Figures 6 and 7. The proposed building would be higher above natural ground level than these building and both dwellings have open space to their rear creating a setback from the shared side boundary of at least 13.5m. As the proposed development rises in height the balconies facing this shared boundary will gradually increase the setback leading to a separation of at least 14.5m on the higher floors. Accounting for the separation that will exist between the existing Argyle Street dwellings and the proposed development it is assessed that this allows for sufficient transition between buildings of different heights.

6.7.21 With respect to the site at 270 Argyle Street, the currently operating car wash contains mostly open space with three raised open shelters which are used for the business. Whilst the propose development would be higher than these commercial buildings the relationship the transition is also considered appropriate given setbacks that exist. It can also be reasonably assumed that future development of a similar scale on this site may occur in the future which would further contribute towards a more equitable transition in heights in the immediate area.

6.7.22 The proposal complies with the performance criterion.

6.8 Design D23.4.3 P1

6.8.1 The acceptable solution at clause 23.4.3 A1 requires that a building design must incorporate roof-top service infrastructure, including service plants and lift structures, within the design of the roof.

6.8.2 The proposal includes a lift well which projects above the roof of the building.

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 23.4.3 P1 provides as follows:

Building design must enhance the streetscape by satisfying all of the following:

(a) provide the main access to the building in a way that addresses the street or other public space boundary;

(b) provide windows in the front façade in a way that enhances the streetscape and provides for passive surveillance of public spaces;

(c) treat large expanses of blank wall in the front façade and facing other public space boundaries with architectural detail or public art so as to contribute positively to the streetscape and public space;

(d) ensure the visual impact of mechanical plant and miscellaneous equipment, such as heat pumps, air conditioning units, switchboards, hot water units or similar, is insignificant when viewed from the street;

(e) ensure roof-top service infrastructure, including service plants and lift structures, is screened so as to have insignificant visual impact;

(f) only provide shutters where essential for the security of the premises and other alternatives for ensuring security are not feasible;

(g) be consistent with any Desired Future Character Statements provided for the area.

6.8.5 In response to sub-clauses (a) and (b) main pedestrian access to the building is located on the Burnett Street frontage and will be visible and accessible, addressing the street and approximately 61% of the ground floor facade will be window openings which will be sufficient to allow for passive surveillance between the building and public spaces. In response to sub-clause (c) there will not be any large expanses of blank wall on the front facade so this is not considered applicable.

6.8.6 No mechanical plant or other miscellaneous equipment is to be visible from the street and the rooftop infrastructure will be sufficiently setback so as to reduce visual impacts, satisfying sub-clauses (d) and (e). No shutters are to be installed on the proposed development and no Desired Future Character statements exist within the Commercial Zone.

6.8.7 The proposal complies with the performance criterion.

6.9 Landscaping D23.4.5 P1

6.9.1 The acceptable solution at clause 23.4.5 A1 requires that landscaping along the frontage of a site is not required if the building extends across the width of the frontage and the building has a setback from the frontage of no more than 1m.

6.9.2 The proposal has a setback on the ground floor from the frontage between 0.8m and 1.8m.

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 23.4.5 P1 provides as follows:

Landscaping must be provided to satisfy all of the following:

(a) enhance the appearance of the development;

(b) provide a range of plant height and forms to create diversity, interest and amenity;

(c) not create concealed entrapment spaces;

(d) be consistent with any Desired Future Character Statements provided for the area.

6.9.5 Landscaping in the form of planter boxes will be provided in some areas along the frontage to enhance the appearance of the development and provide an opportunity for plants to create an element of diversity, interest and amenity. These will be integrated into the facade and will not create concealed entrapment spaces. No Desired Future Character statements exist within the Commercial Zone.

6.9.6 The proposal complies with with the performance criterion.

6.10 Potentially Contaminated Land Code - Use Standards - E2.5 P1

6.10.1 The acceptable solution at clause 2.5 A1 requires that the Director, or a person approved by the Director for the purpose of this Code certifies that the land is suitable for the intended use ; or approves a plant to manage contamination.

6.10.2 The proposal includes work on and adjacent to potentially contaminated land and includes no certification by the Director, or a person approved by the Director.

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 2.5 P1 provides as follows:

Land is suitable for the intended use, having regard to:

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

(b) an environmental site assessment that demonstrates that the level of contamination does not present a risk to human health or the environment; or

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

(i) an environmental site assessment;
(ii) any specific remediation and protection measures required to be implemented before any use commences; and
(iii) a statement that the land is suitable for the intended use.

6.10.5 Referral was made to Council's Environmental Health Officer who has provided the following assessment:

A plan to manage contamination and associated risks to human health and the environment was submitted, and it includes;

(i) The plan includes a Environmental Site Assessment (ESA) which complies with the requirements of the National Environment Protection Measure (NEPM). The ESA was conducted and prepared by a suitably qualified person/company,
(ii) The ESA outlines specific remediation and protection measures required to be implemented before any use commences, and;
(iii) The ESA states that the land is suitable for its intended use.

6.10.5 The proposal complies with the performance criterion.

6.11 Potentially Contaminated Land Code - Excavation - E2.6.2 P1

6.11.1 There is no acceptable solution for clause 2.6.2 A1

6.11.2 The proposal includes excavation on and adjacent to potentially contaminated land.

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

6.11.4 The performance criterion at clause 2.6.2 P1 provides as follows:

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

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

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

(i) an environmental site assessment;
(ii) any specific remediation and protection measures required to be implemented before excavation commences; and
(iii) a statement that the excavation does not adversely impact on human health or the environment.

6.11.5 Referral was made to Council's Environmental Health Officer who has provided the following assessment:

A plan to manage contamination and associated risks to human health and the environment was submitted, and it includes:

(i) The plan includes a Environmental Site Assessment (ESA) which was conducted and prepared by a suitably qualified person/company and is in accordance with the National Environment Protection Measure (NEPM),
(ii) The ESA outlines specific remediation and protective measures required to be implemented before any excavation commences, and;
(iii) The ESA states that the excavation will not adversely impact on human health or the environment if the recommendations of the ESA are followed.

6.11.6 The proposal complies with the performance criterion.

6.12 Existing Road Accesses and Junctions - E5.5.1 P3

6.12.1 The acceptable solution at clause 5.6.1 A3 requires that 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.

6.12.2 The proposal TIA estimates an approximate increase of 169 vehicle movements per day for the site.

6.12.3 The proposal does not comply with the acceptable solution; therefore

assessment against the performance criterion is relied on.

6.12.4 The performance criterion at clause 5.51 P3 provides as follows:

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

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

6.12.5 Referral was made to Council's Senior Development Engineer who has provided the following assessment:

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

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

- The TIA estimates a maximum number of vehicle movements per hour (VPH) of 19 during the afternoon peak, and approximately 169 vehicle movements per day (VPD) for the site
- The TIA suggests that the timing of the lights at the intersection of Argyle and Burnett Streets will provide sufficient gaps in the traffic on Burnett Street to enable relativey free flow of vehicles both in to, and out of the development site - Council's development engineer agrees with this assertion providing use of the access is limited to a left turn in-left turn out type arrangement CONDITION FOR LEFT TURN ONLY
- The kerb parking along the section of Burnett Street adjacent to the development operates as a clearway during peak hours - this will also assist in the free flow of vehicle movements from the site.

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

- The TIA states: "The low number of private vehicle movements that will

be generated by the development combined with the gaps in the traffic stream that will be generated by the upstream traffic signals means that the access to and from the development site will operate without any significant queuing or delay."

- Council's engineer agrees with the TIA, the (primarily) residential nature, and low number of vehicle movements generated by the development is unlikely to have much impact on the efficiency of the road network, or result in an unacceptable increase in risk to users.

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

- The proposed access type is appropriate for the development providing it is limited to a left turn in-left turn out type arrangement **CONDITION FOR LEFT TURN ONLY**
- It will operate as a private driveway and will be adequately recognised as such to other users including pedestrians.
- The width and other geometry is appropriate to the development.

(d) the nature and category of the road;

- The road is Council administered and is categorised as a major collector.
- The road operates as two lane/two way outside of peak times, and four lane/four way during peak times (the kerb parking is a clearway during peak hours)
- Vehicle speed is generally slow due to the proximity of the traffic lights at the corner of Burnett/Argyle

Taking into account the above, the nature and category of the road is acceptable in terms of the traffic generated by the proposed development and the access type proposed to be used.

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

- Vehicle speed is generally slow due to the proximity of the traffic lights at the corner of Burnett/Argyle
- The TIA suggests that the timing of the lights at the intersection of Argyle and Burnett Streets will provide sufficient gaps in the traffic on Burnett Street to enable relativey free flow of vehicles both in to, and out of the development site - Council's development engineer agrees with this assertion providing use of the access is limited to a left turn in-left turn out type arrangement **CONDITION FOR LEFT TURN ONLY**

(f) any alternative access to a road; ***NOT APPLICABLE***

- No alternative access exists

(g) the need for the use;

- Additional housing is desperately needed in the greater Hobart area, and the ability to push development outwards is limited by terrain - the need for the use is high.

(h) any traffic impact assessment;

- A TIA has been completed by Milan Prodanovic which supports the development and proposed access arrangements.
- Council's development engineer agrees with the findings of the TIA

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

- Acceptable subject to conditions

Based on the above assessment and given the submitted documentation, the proposed access may therefore be accepted under Performance Criteria P3:E5.5.1 of the Planning Scheme.

6.12.6 The proposal complies with the performance criterion.

6.13 Number of Car Parking Spaces - E6.6.1 P1

6.13.1 The acceptable solution at clause 6.6.1 A1 requires that the number of on-site car parking spaces must be no less than and no greater than the number specified in Table E6.1

6.13.2 The proposal includes a total of 61 spaces and the total number required for Residential and General Retail and Hire Use under Table E6.1 is 73 spaces.

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 6.6.1 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.

6.13.5 Referral was made to Council's Senior Development Engineer who has provided the following assessment:

The number of on-site car parking spaces must be sufficient to meet the reasonable needs of users, having regard to all of the following:

(a) car parking demand;

- The RTA Guide to Traffic Generating Developments recommends a minimum of 1 space per dwelling for multi-storey apartment complexes, which equates to 31 spaces for the propsoed development.
- Assuming 5 of the ground floor spaces are dedicated as visitor

parking; 5 of the ground floor spaces are allocated to the commercial tennancy; and 1 of the ground floor spaces is made redundant and used for on-site turning; the number of parking spaces for residential use is 50.

- Given 50 is well in excess of 31, the number of spaces is considered satisfactory as a performance based solution. **CONDITION FOR NUMBER OF SPACES, SPACE ALLOCATION, LINE-MARKING AND SIGNAGE**

(b) the availability of on-street and public car parking in the locality;

- Burnett Street is four lanes wide – two lanes in each direction. The kerbside lanes are normally used for on-street parking, but no stopping 'clearway' restrictions apply during the peak periods on weekdays.
- The specific parking controls on the southern side of Burnett Street, in the vicinity of the development site, are as follows:
  - 'No Stopping', 7.30 – 9.00am and 4.30 – 6.00pm, Monday to Friday;
  - half hour time limited parking, 9.00 am – 4.30pm, Monday to Friday; and
- unrestricted parking at other times
- The number of kerb-side parking spaces is considered satisfactory to service the short term parking requirements of the commercial tennancy during the day, and allows for parking over-spill during the evening.
- There is no public parking with close proximity to the development site

(c) the availability and frequency of public transport within a 400m walking distance of the site;

The availability and frequency of public transport is excellent, noting:

- Metro operates regular bus services in the vicinity of the development site.
- Elizabeth Street is part of the Turn Up and Go (North) route which operates every 10 minutes Monday to Friday 7am – 7pm; every 20 minutes Saturdays 7am – 7pm; and every 30 minutes Sundays and Public Holidays 7am – 7pm.
- Service number 540 runs between Mount Stuart, North Hobart, West Hobart and the city centre. This service operates at approximately 40 minute intervals on weekdays with additional service during the peak periods.

(d) the availability and likely use of other modes of transport;

- Due to the site's favourable location, cycling, walking and uber are all realistic alternative forms of transport.

(e) the availability and suitability of alternative arrangements for car parking provision;

- Not applicable

(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;

- Council is unable to require a financial contribution without a Parking Strategic Plan. Not applicable.

(j) any verified prior payment of a financial contribution in lieu of parking for the land;

- None

(k) any relevant parking plan for the area adopted by Council;

- There is no relevant parking plan in the vicinity of this proposal. 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.

- Not applicable

6.13.6 The proposal complies with the performance criterion.

6.14 Number of Motorcycle Parking Spaces - E6.6.3 P1

6.14.1 The acceptable solution at clause 6.6.3 A1 requires that 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.

6.14.2 No motorcycle parking is supplied.

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 6.6.3 P1 provides as follows:

The number of on-site motorcycle parking spaces must be sufficient to meet the needs of likely users having regard to all of the following, as appropriate:

(a) motorcycle parking demand;
(b) the availability of on-street and public motorcycle parking in the locality;
(c) the availability and likely use of other modes of transport;
(d) the availability and suitability of alternative arrangements for motorcycle parking provision.

6.14.5 Referral was made to Council's Senior Development Engineer who has provided the following assessment:

No spaces are provided and this is considered acceptable because occupants of the apartments have the option of using their allocated car parking space/s for that purpose.

6.14.6 The proposal complies with the performance criterion.

6.15 Design of Vehicular Accesses - E6.7.2 P1

6.15.1 The acceptable solution at clause 6.7.2 A1 requires that the design of vehicle access points in the case of non-commercial vehicle access must demonstrate that the location, sight distance, width and gradient of an access are 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.

6.15.2 The proposal includes a vehicle access point which does not comply with AS/NZA 2890.1:2004 due to sight distance, ramp geometry and grades.

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

6.15.4 The performance criterion at clause 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.

6.15.5 Referral was made to Council's Senior Development Engineer who has provided the following assessment:

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;

- OK - The kerb parking along the section of Burnett Street adjacent to the development operates as a clearway during peak hours hence sight distance will meet the Australian Standard during the most critical times.

(b) avoidance of unreasonable interference with the flow of traffic on adjoining roads;

- Not impacted by sight distances

(c) suitability for the type and volume of traffic likely to be generated by the use or development;

- OK - The kerb parking along the section of Burnett Street adjacent to the development operates as a clearway during peak hours hence sight distance will meet the Australian Standard during the most critical times.

(d) ease of accessibility and recognition for users.

- Not impacted by sight distance

6.15.6 The proposal complies with the performance criterion.

6.16 On-Site Turning - E6.7.4 P1

6.16.1 The acceptable solution at clause 6.7.4 A1 requires that on-site turning must be provided to enable vehicles to exist a site in a forward direction

6.16.2 No dedicated on-site turning space is provided on the ground floor parking area.

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

6.16.4 The performance criterion at clause 6.7.4 P1 provides as follows:

On-site turning may not be required if access is safe, efficient and convenient, having regard to all of the following:

(a) avoidance of conflicts between users including vehicles, cyclists, dwelling occupants and pedestrians;
(b) avoidance of unreasonable interference with the flow of traffic on

adjoining roads;
(c) suitability for the type and volume of traffic likely to be generated by the use or development;
(d) ease of accessibility and recognition for users;
(e) suitability of the location of the access point and the traffic volumes on the road.

6.16.5 Referral was made to Council's Senior Development Engineer who has provided the following assessment:

- Will be required on the ground level where parking is located for visitor and commercial use and may be full, leading to the need for a vehicle to be able to exit the site without having parked.
- TIA recommends dedicating one of the parking spaces as a turning area **CONDITION FOR SPACE 11 TO BE A TURNING AREA ONLY**

6.16.6 The proposal complies with the performance criterion.

6.17 Layout of Parking Areas - E6.7.5 P1

6.17.1 The acceptable solution at clause 6.7.5 A1 requires that 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.

6.17.2 The proposal includes a parking area layout which does not comply with AS/NZS 2890.1:2004.

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

6.17.4 The performance criterion at clause 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.

6.17.5 Referral was made to Council's Senior Development Engineer who has provided the following assessment:

Discretion is required because plans are in concept only with only basic detail provided, however there is sufficient information to be confident that the design will meet all applicable standards and specifications following detailed design. **CONDITION FOR DETAILED DESIGN TO AUSTRALIAN STANDARD**

6.17.6 The proposal complies with the performance criterion.

6.18 Surface Treatment of Parking Areas - E6.7.6 P1

6.18.1 The acceptable solution at clause 6.7.6 A1 requires that parking spaces and vehicle circulation roadways must be drained to an approved stormwater system.

6.18.2 The proposed parking area stormwater drainage has not bee demonstrated in supplied plans.

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

6.18.4 The performance criterion at clause 6.7.6 P1 provides as follows:

Parking spaces and vehicle circulation roadways must not unreasonably detract from the amenity of users, adjoining occupiers or the quality of the environment through dust or mud generation or sediment transport, having regard to all of the following:

(a) the suitability of the surface treatment;
(b) the characteristics of the use or development;
(c) measures to mitigate mud or dust generation or sediment transport.

6.18.5 Referral was made to Council's Senior Development Engineer who has provided the following assessment:

Surface proposed is concrete which will not unreasonable detract from the amenity of users, but drainage is yet to be shown and will need to be addressed in the detailed design.

6.18.6 The proposal complies with the performance criterion.

6.19 Design of Bicycle Parking Facilities - E.6.7.10 P1

6.19.1 The acceptable solution at clause 6.7.10 A1 requires that the design of

bicycle parking facilities be located within 30m of the main entrance to the building.

6.19.2 The proposal includes bicycle parking facilities which are located greater than 30m from the main entrance to the building

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

6.19.4 The performance criterion at clause 6.7.10 P1 provides as follows:

The design of bicycle parking facilities must provide safe, obvious and easy access for cyclists, having regard to all of the following:

(a) minimising the distance from the street to the bicycle parking area;

(c) providing clear sightlines from the building or the public road to provide adequate passive surveillance of the parking facility and the route from the parking facility to the building;
(d) avoiding creation of concealment points to minimise the risk.

6.19.5 Referral was made to Council's Senior Development Engineer who has provided the following assessment:

The design of bicycle parking facilities must provide safe, obvious and easy access for cyclists, having regard to all of the following:

(a) minimising the distance from the street to the bicycle parking area;

- The low number of vehicle movements to and from the residential parking area means the increase in risk to cyclists is within acceptable limits.

(c) providing clear sightlines from the building or the public road to provide adequate passive surveillance of the parking facility and the route from the parking facility to the building;

- Not applicable

(d) avoiding creation of concealment points to minimise the risk.

- Not applicable

6.19.6 The proposal complies with the performance criterion.

6.20 Stormwater Drainage and Disposal - E7.7.1 P1

6.20.1 The acceptable solution at clause 7.7.1 A1 requires that stormwater from new impervious surfaces must be disposed of by gravity to public stormwater.

6.20.2 The proposed development will require a pump system for the basement carparking and ag drains.

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

6.20.4 The performance criterion at clause 7.7.1 P1 provides as follows:

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.

6.20.5 Referral was made to Council's Stormwater Unit who have provided the following assessment:

- Originally had proposed new cnxn to kerb with detention to limit to 11.8L/s (<13L/s). This was due to clashes shown on C010 RevB.
- Applicant now proposes a new DN150 main extension parallel to the DN300. This will provide a connection at 41.15m. They have stated lowering the DN300 would reduce capacity too much - but didn't mention if upsizing would compensate. The piped system does not extend far beyond the property. Council would prefer a single asset if feasible, even if it was at 0.9% grade.
- A small pump will be needed for the basement carparking and ag drains. The roofwater will flow via gravity via the detention tank (FFL 42.15). Condition to ensure all stormwater which can discharges via gravity.

- Existing connections (at least a 150 and 250 kerb cnxns) must be reinstated - condition.
- P1 c) met

6.20.6 The proposal complies with the performance criterion.

6.21 Stormwater Drainage and Disposal - E7.7.1 P2

6.21.1 The acceptable solution at clause 7.7.1 A2 requires that stormwater systems for a new development must incorporate water sensitive urban design principles for the treatment and disposal of stormwater if the size of new impervious area is more than 600m^2 and new carparking is provided for more than 6 cars.

6.21.2 The proposal includes new impervious area greater than 600m^2 and carparking for 61 cars, the propose stormwater systems do not incorporate water sensitive urban design principles.

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

6.21.4 The performance criterion at clause 7.7.1 P2 provides as follows:

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

6.21.5 Referral was made to Council's Stormwater Unit who have provided the following assessment:

61 new carspaces (fully covered) - WSUD triggered. Ocean Protect StormFilters proposed. Condition for maintenance and detailed design.

6.21.6 The proposal complies with the performance criterion.

6.22 Development for Sensitive Use in Proximity to Use with Potential to Cause Environmental Harm - 9.7.2 P1

6.22.1 There is no acceptable solution for clause 9.7.2 A1.

6.22.2 The proposal includes development for a sensitive use which is located in proximity to use with potential to cause environmental harm, a 'late night music venue' known as 'The Republic Bar & Cafe' at 299 Elizabeth Street.

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

6.22.4 The performance criterion at clause 9.7.2 P1 provides as follows:

Development for sensitive use, including subdivision of lots within a sensitive zone, must not result in potential to be impacted by environmental harm from use with potential to cause environmental harm, having regard to all of the following:

(a) the nature of the use with potential to cause environmental harm; including:

(i) operational characteristics;
(ii) scale and intensity;
(iii) degree of hazard or pollution that may emitted from the activity;

(b) the degree of encroachment by the sensitive use into the Attenuation Area or the attenuation distance;

(c) measures in the design, layout and construction of the development for the sensitive use to eliminate, mitigate or manage effects of emissions

6.22.5 Referral was made to Council's Environmental Development Planner who has provided the following assessment:

Documentation submitted with the application addresses the performance criterion as follows:

• *The nature of the relevant late-night music venue is such that it is unlikely to cause environmental harm to the proposed sensitive use. The operational characteristics of the venue are that it is limited in size and capacity. Therefore, the scale and intensity of the use of the venue is limited compared with other late-night music venues. While the venue has an outdoor area, this is not used for late night music. Instead, late night music is confined to within the building on the site, thereby reducing the degree of noise pollution that may be emitted.*

• The site is approximately 110m from the relevant late-night music venue. Therefore, while the proposed sensitive use would be within the prescribed attenuation distance,
it would still be well separated from the venue. This separation would include the buildings fronting onto Burnett Street between the site and the venue, such as the substantial warehouse building on the adjoining property at 48 Burnett Street and the two-storey commercial buildings at 56-58 and 64 Burnett Street respectively.

• The proposed building would have very few windows facing toward the relevant latenight music venue. As shown in the proposed south-west elevation plan, only four relatively small windows are proposed within this elevation, other than clerestory windows proposed on the upper level of building. The building would have concrete panel walls which would assist in mitigating noise impacts from the venue. Much of the south-western side of the proposed building would also abut the substantial warehouse on the adjoining property mentioned above.

I agree with the above analysis and believe there is no credible risk of occupants of the proposed building being subject to environmental harm from noise emissions from the late night music venue given the nature of the venue, separation distance, topography and the ambient noise levels in the area.

The exercise of discretion is recommended.

6.22.6 The proposal complies with the performance criterion.

6.23 Building, Works and Demolition - E13.10.1 P1

6.23.1 The subject site is located within the 'Place of Archaeological Potential' overlay and therefore any Building Works or Demolition which involve excavation or ground disturbance must be assessed by Council's Cultural Heritage Officer.

6.23.2 The proposal includes excavation of two lower levels for basement carparking and was therefore referred to Council's Cultural Heritage Officer who has provided the following assessment:

This site relates to two existing plots which face directly onto Burnett Street. The smaller of the two is a single storey masonry built residential property dating from the 1880's, whilst the larger is a large warehouse/light industrial property dating from the 1960's. The 1880's

residential property at No.40 Burnett Street forms part of a pair on the Burnett Street frontage and largely mirrors two slightly earlier buildings of the same scale and general design that face onto Argyle Road. The four properties could therefore be seen as a coherent group and a small but distinctive residential scale enclave within the largely commercial surrounding area. However, whilst the properties facing onto Burnett Street have been identified for future heritage listing, only those facing onto Argyle Street are currently Heritage Listed under the Hobart Interim Planning Scheme. The site does not fall within a Heritage Precinct.

The proposal seeks the demolition of the 1880's property and the later 1960's warehouse, and the erection of a five storey residential block providing 31 Dwellings, along with underground parking and retail use at ground floor level.

As stated, the site sits outside of a recognised Heritage Precinct and is not individually Heritage Listed. The site is however identified as forming part of Hobarts Area of Archaeological Potential as set out in the Hobart Interim Planning scheme 2015. As such, the proposal must be considered against the relevant heritage provisions of the Scheme.

Archeology

This site is located within an area identified as being of historical archaeological potential. A Statement of Archaeological Potential, Impact Assessment and Method Statement has been prepared and submitted as supporting documentation by Praxis Environment, dated September 2020. The report is considered to be thorough in its assessment, sound in its methodology and to have been conducted by a suitably qualified practitioner.

It is reported that the site has been the subject of only limited development with early cottages built on the site of the warehouse in the early 1840's. This was followed soon after by a larger residential development on the site of the 1880's dwelling. However, both of these early developments were subsequently demolished, the first being replaced by the residential property in 1880, and the earlier cottages surviving until the mid-1960's when they were demolished to make way for the current warehouse.

The report concludes that both of these earlier developments would not have been of significant size to warrant substantial footings or foundations and that given the degree to which both sites were redeveloped, little to no surviving features of either building is considered likely to have survived.

Given the above, the report concludes that the site is of no archeological potential and that should planning permission be granted, there is no indication that the site should be monitored during construction or subject to archeological consideration.

Based on the report and an examination of the Council's own records, it is considered that the recommendation is considered reasonable in this instance.

Conclusion

Whilst the demolition of the 1880's residential dwelling is considered highly unfortunate given its role in forming part a small and coherent residential enclave of later Victorian properties, it is considered that the proposal would comply with the limited heritage provisions of the planning scheme as they apply to the sites n question.

Nick Booth
Heritage Officer
10 November 2020

6.23.3 The proposal complies with the performance criterion.

7. Discussion

7.1 Planning approval is sought for Demolition, New Building for 31 Multiple Dwellings and General Retail and Hire, Subdivision (Lot Consolidation), Alterations to Access, and Associated Work, at 40 Burnett Street, 42-44 Burnett Street, North Hobart and adjacent road reserve.

7.2 The application was advertised and received six (6) representations including five (5) that objected to the proposal. The representations raised concerns including potential overshadowing, privacy and traffic impacts as a result of the development. The representations also raised a concern as to the height of the proposed development, particularly with the transition of heights, as well as the suitable number of parking spaces provided on-site. One representor raised concern about the demolition of a heritage dwelling at 40 Burnett Street, whilst this property has been identified for future heritage listing it is not currently Heritage Listed nor falling within a Heritage Precinct and therefore no subject to any heritage protections.

7.3 Under the Commercial Zone there are no provisions assessing the impact to overshadowing or risk of overlooking. Shadow diagrams provided in Figure 8 illustrate that partial overshadowing will occur to the north western corner of the rear yard of 274 Argyle Street from 10:00am until 3:00pm on June 21st. Overshadowing of both properties will not occur until 2:00pm on June 21st and will only see overshadowing of the rear half of the backyards with no impacts upon the dwellings. Balconies along the north east elevation facing the residential properties at 272 and 274 Argyle Streets will not feature transparent balustrades which are understood to reduce the potential for overlooking from this space, as well as from inside the apartments themselves. The presence of planters on this elevation may further increase privacy although given the differences in height the potential for impacts cannot be totally removed.

7.4 The proposed traffic, access and parking arrangements have been considered by the Council's Senior Development Engineer and Graduate Traffic Engineer, and are considered to be supportable subject to conditions.

7.5 The application was considered by the Council's Urban Design Advisory Panel, who were broadly supportive of the proposal. The Panel's minutes are provided at Attachment E to this report. The Panel suggested that conditions be imposed broadly with respect to landscaping, the street level front facade, and finishes/materials. This is supported and conditions are recommended.

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

7.7 The proposal has been assessed by other Council officers, including the Council's Development Engineer, Cultural Heritage Officer, Stormwater Engineer, Environmental Development Planner, Environmental Health Officer, Park Planner, Road Asset Engineer, Traffic Engineer, and Survey Officer. The officers have raised no objection to the proposal, subject to conditions.

7.8 The proposal is recommended for approval.

8. Conclusion

8.1 The proposed New Building for 31 Multiple Dwellings and General Retail and Hire, Subdivision (Lot Consolidation), Alterations to Access, and Associated Works at 40 and 42 - 44 Burnett Street, North 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 a New Building for 31 Multiple Dwellings and General Retail and Hire, Subdivision (Lot Consolidation), Alterations to Access, and Associated Works at 40 and 42 - 44 Burnett Street, North 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-20-633 - 40 BURNETT STREET NORTH HOBART TAS 7000 - Final Planning Documents except where modified below.

Reason for condition

To clarify the scope of the permit.

TW

The use and/or development must comply with the requirements of TasWater as detailed in the form Submission to Planning Authority Notice, Reference No. TWDA 2020/01519-HCC dated 08/10/2020 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 palette of exterior colours and materials must be provided.

The palette of exterior colours and materials should address the following:

1. **Consideration of introducing a simpler and more recessive roof form.**
2. **Utilising some elements or characteristics of the cottage at 38 Burnett Street within the frontage of the development, at street level.**
3. **The use of planter boxes along the street level frontage.**
4. **The use of brick or masonry in the ground floor elevation.**

Prior to the issue of any approval under the Building Act 2016 (excluding for demolition, excavation and works up to the ground floor slab), revised plans, and montages and samples where appropriate, must be submitted and approved to the satisfaction of the Director City Planning showing exterior colours and materials in accordance with the above requirement.

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

Reason for condition

In the interest of the streetscape and townscape values of the surrounding area, to improve the transition and compatibility with surrounding buildings, to provide stronger links with the extant residential cottages within the streetscape.

PLN s2

A Landscaping Plan prepared by a suitably qualified person for the landscaped spaces, private open space areas and other areas of planting around the site must be submitted and approved by the Council's Director City Planning prior to the issue of any consent under the Building Act 2016, excluding for demolition, excavation and works up to the ground floor slab.

The Landscaping Plan must include (in addition to that already proposed):

1. **More consideration to the provision and nature of additional landscaping on the Burnett Street Frontage.**
2. **Further details of the planter boxes, including how they will be managed, their size, and how they will be irrigated.**
3. **More consideration of additional deep planting at the rear of the site.**

All trees and landscaping must be planted and installed in accordance with the approved Landscaping Plan to the satisfaction of the Council's Director City Planning prior to commencement of use.

The trees and landscaping must be maintained, and replacement trees and landscaping in accordance with the approved Landscaping Plan must be planted if any is lost.

Confirmation by the person who prepared the landscaping plan (or an equivalent suitably qualified person) that the landscaping has been completed in accordance with the approved landscaping plan must be submitted to the Council to the satisfaction of the Director City Planning, prior to commencement of use. Once this has been received, and all landscaping shown on the approved Landscaping Plan has been planted in accordance with the approved plan to the satisfaction of the Council's Director City Planning, the Council will issue a statement confirming satisfactory planting of all trees and landscaping.

Reason for condition

To ensure that the development achieves a high standard of public amenity and to ensure appropriate landscaping close to the property boundary.

PLN s3

Prior to the issue of any approval under the Building Act 2016, (excluding for demolition, excavation and works up to the ground floor slab), a detailed design for the street level frontage must be submitted and approved, to the satisfaction of the Director City Planning. The detailed design must include (but is not limited to) the following:

1. **Ground level façade.**
2. **Paving.**
3. **Landscape elements (note also condition PLN s2 requiring a landscaping plan).**

4. **Street furniture.**
5. **Lighting.**
6. **Signage.**

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

Reason for condition

In the interest of the streetscape and townscape values of the surrounding area, to improve the transition and compatibility with surrounding buildings, to provide stronger links with the extant residential cottages within the streetscape.

ENG 12

A construction waste management plan must be implemented throughout construction.

A construction waste management plan must be submitted and approved, prior to commencement of work on the site. The construction waste management plan must include:

- **Provisions for commercial waste services for the handling, storage, transport and disposal of post-construction solid waste and recycle bins from the development; and**
- **Provisions for the handling, transport and disposal of demolition material, including any contaminated waste and recycling opportunities, to satisfy the above requirement.**

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

Advice: Once the construction waste management plan has been approved, the Council will issue a condition endorsement (see general advice on how to obtain condition endorsement).

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.

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

information can also be found on the Council's website.

Reason for condition

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

ENG sw1

All stormwater from the proposed development (including but not limited to: roofed areas, ag drains, and impervious surfaces such as driveways and paved areas) must be drained to the Council's stormwater infrastructure prior to first occupation or commencement of use (whichever occurs first). All stormwater which can drain to the connection via gravity must do so.

Reason for condition

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

ENG sw2.1

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 Council's stormwater infrastructure adjacent to the proposed development must be submitted to Council.

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 Council'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.**

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

the responsibility of the owner/developer.

Reason for condition

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

ENG sw2.2

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 Council's stormwater infrastructure adjacent to the proposed development must be submitted to Council.

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. Assets found to have a different alignment from that shown on Council'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.**

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

Reason for condition

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

ENG sw5

The new and/or upgraded stormwater infrastructure (main and connection) must be designed and constructed prior to sealing of the final plan, occupancy or the commencement of the approved use (whichever occurs first). All existing redundant connections must be abandoned.

Prior to the issuing of any approval under the Building Act 2016 or commencement of works (whichever occurs first), detailed engineering drawings and associated calculations must be submitted and approved. 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 Council's published departures from those Drawings, and the Local Government Association of Tasmania, Tasmanian Subdivision Guidelines (October 2013);**
2. **Show the location of all existing connections. All existing redundant connections must be abandoned and the footpath/ kerb reinstated.**
3. **Clearly distinguish between public and private infrastructure;**
4. **Show in both plan and long-section the proposed stormwater main and connection, including but not limited to, connection, flows, velocities, hydraulic grade lines, clearances from other services, cover, gradients, sizing, material, pipe class, and inspection openings; and**
5. **Show the new/ upgraded public stormwater is sized to accommodate at least the 5% AEP event flows from a future fully-developed catchment.**

A structural condition assessment and visual record (ie a CCTV) of the new/ upgraded public stormwater main 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:
Council's preference, if practicable and maintaining capacity, would be for the DN300 to be lowered and upgraded. The infrastructure should be sized neglecting private detention. Fully-developed is to be taken as the maximum permitted under the planning scheme, unless demonstrated to be unsuitable.
The applicant is required submit detailed design documentation to satisfy this condition via the Council's planning condition endorsement process (noting there is a fee associated with condition endorsement approval of engineering drawings [see general advice on how to obtain condition endorsement and for fees and charges]). This is a separate process to any building approval under the Building Act 2016. Failure to address condition endorsement requirements prior to submitting for building approval may result in unexpected delays.

Reason for condition

To ensure Council's hydraulic infrastructure meets acceptable standards.

ENG sw7

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

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

1. **Include detailed design of the proposed treatment train, including final estimations of contaminant removal;**
2. **Include detailed design and supporting calculations of the detention tank showing:**
    1. **Detention tank sizing such that there is no increase in flows from the developed site up to 5% AEP event and flows are limited to the receiving capacity of Council infrastructure, taking critical timing of the infrastructure into account;**
    2. **The layout, the inlet and outlet (including long section), outlet size, overflow mechanism and invert level;**
    3. **The discharge rates and emptying times; and**
    4. **All assumptions must be clearly stated;**
3. **Include a supporting maintenance plan, which specifies the required maintenance measures to check and ensure the ongoing effective operation of all systems, such as: inspection frequency; cleanout procedures; descriptions and diagrams of how the installed systems operate; details of the life of assets and replacement requirements.**

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

Advice: Once the design and report has been approved Council will issue a condition endorsement (see general advice on how to obtain condition endorsement).

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.

Reason for condition

To avoid the possible pollution of drainage systems and natural watercourses, and to comply with relevant State legislation.

ENG 13

An ongoing waste management plan for all commercial and domestic waste and recycling must be implemented post construction.

A waste management plan must be submitted and approved, prior to the issue of any approvals under the *Building Act 2016*. The waste management plan must:

1. **Include provisions for private waste services for the handling, storage, transport and disposal of domestic and commercial waste and recycle bins from the development.**

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

Advice:

- *The Council will not undertake waste collection for this development.*
- *Advice and permission should be sought from the Road Authority that administers the Burnett Street highway reservation with respect to private collection from the road carriageway.*
- *Once the waste management plan has been approved Council will issue a condition endorsement (see general advice on how to obtain condition endorsement).*
- *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.*

Reason for condition

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

ENG tr2

A construction traffic and parking management plan must be implemented prior to the commencement of work on the site (including demolition).

The construction traffic (including cars, public transport vehicles, service vehicles, pedestrians and cyclists) and parking management plan must be submitted and approved, prior to commencement work (including demolition). The construction traffic and parking management plan must:

1. **Be prepared by a suitably qualified person.**
2. **Develop a communications plan to advise the wider community of the traffic and parking impacts during construction.**
3. **Include a start date and finish dates of various stages of works.**
4. **Include times that trucks and other traffic associated with the works will be allowed to operate.**
5. **Nominate a superintendant, or the like, to advise the Council of the progress of works in relation to the traffic and parking management with regular meetings during the works.**

All work required by this condition must be undertaken in accordance with the approved construction traffic and parking management plan.

Advice: Once the construction traffic and parking management plan has been approved, the Council will issue a condition endorsement (see general advice on how to obtain condition endorsement).

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.

Reason for condition

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

ENG 3a

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.

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, prior to the 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. **Include a dedicated turning area in place of proposed car-parking space 11;**
3. **Include a maximum inside wheel path gradient of 25% on the proposed ramps;**
4. **Include full details of the proposed traffic signals including detailed timing information, a contingency plan for instances where the lights fail to operate, and details for any ongoing maintenance/testing requirements and repair;**
5. **Show the exit from the site to the Burnett Street highway reservation as left turn only;**
6. **Be generally in accordance with the Australian Standard AS/NZS2890.1:2004,**
7. **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, and**
8. **Show dimensions, levels, gradients & transitions, and other details as Council deem necessary to satisfy the above requirement.**

Advice:

- *Once the design has been approved, the Council will issue a condition endorsement (see general advice on how to obtain condition endorsement)*
- *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.*

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), including requirements for linemarking, signage, traffic control signals, and any other traffic control infrastructure, must be constructed in accordance with the drawings approved under this permit.

Prior to the first occupation or commencement of use (whichever occurs first), documentation by a suitably qualified engineer certifying that access driveway, circulation roadways, ramps and parking module (parking spaces, aisles and manoeuvring area), including requirements for linemarking, signage, traffic control signals, and any other traffic control infrastructure has been constructed in accordance with the above drawings must be lodged with Council.

Advice:

- *Certification must be submitted via the planning condition endorsement process (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 and the approved design plans.

ENG 4

The access driveway and parking module (car 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 prior to the first occupation or commencement of use (whichever occurs first).

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 parking spaces approved on the site, for use is:

- **Fifty (50) User Class 1A residential parking spaces;**
- **Five (5) User Class 1A visitor parking parking spaces; and**
- **Five (5) User Class 1A employee parking spaces.**

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

Reason for condition

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

ENG 5b

A sign approved by the Council, for each of the user class 1A residential, visitor and employee car parking spaces, must be fixed to the wall at the end of each parking space prior to first occupation or commencement of use (whichever occurs first). The signs must be in accordance with *AS 1742.11:2016 Manual of uniform traffic control devices, Part 11: Parking Controls* and must clearly state:

1. **"Visitor Parking Only" for the five visitor parking spaces;**
2. **"Employee Parking Only" for the five employee parking spaces; and**
3. **The apartment number that the parking space is allocated to for the residential parking spaces.**

Reason for condition

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

ENG 6

The ground floor car parking space shown as parking space number eleven (11) on the BPSM Architects plan 'DA202' Revision 6, and dated 12/05/2019 is not approved. Prior to the issue of any approvals under the *Building Act 2016* revised plans must be submitted and approved. The revised plans must:

1. **Show a dedicated turning area in place of parking space number 11;**
2. **Include white, diagonal linemarking within the turning area, using stripes 150 to 200mm wide with spaces 200 to 300mm between stripes, and the stripes at a 45 degree angle to the adjacent parking space; and**
3. **Show a sign on the wall adjacent to the turning area clearly stating**

"Turning Area Only - No Standing Any Time".

Reason for condition

To ensure that parking facilities for cars are designed and constructed to enable safe, easy and efficient use.

ENG 8

The use of the fifty (50) car parking spaces on the lower ground and basement levels is restricted to User Class 1A (residential parking) in accordance with Australian Standards AS/NZS2890.1 2004 Table 1.1.

A sign, approved by council, and in accordance with Australian Standards AS/NZS1742.11:2016, to indicate the parking area is for residents only must be erected adjacent to the traffic control signal on the ground floor prior to the first occupation or commencement of use (whichever occurs first).

Reason for condition

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

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.**

Any damage must be immediately reported to Council.

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

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

then any damage to the Council's infrastructure found on completion of works will be deemed to be the responsibility of the owner.

Reason for condition

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

ENG r1

The excavation or earth-retaining structures (cuttings, retaining walls) or footings within or supporting the highway reservation must not undermine the stability and integrity of the highway reservation and its infrastructure.

Detailed design drawings, structural certificates and associated geotechnical assessments of the items above within the Burnett Street highway reservation must be submitted and approved, prior to any approval under the Building Act 2016:

1. **Be prepared and certified by a suitable qualified person and experienced engineer.**
2. **Not undermine the stability of the highway reservation.**
3. **Be designed in accordance with AS4678, with a design life in accordance with table 3.1 typical application major public infrastructure works.**
4. **Take into account any additional surcharge loadings as required by relevant Australian Standards.**
5. **Take into account and reference accordingly any Geotechnical findings.**
6. **Detail any mitigation measures required.**
7. **Detail the design and location of the footing adjacent to Burnett Street.**

The structure certificated and/or drawings should note accordingly the above.

All work required by this condition must be undertaken in accordance with the approved select design drawing and structural certificates.

Advice:

- *The applicant is required submit detailed design documentation to satisfy this condition via Council's planning condition endorsement process (noting there is a fee associated with condition endorsement approval of engineering drawings [see general advice on how to obtain condition endorsement and for fees and charges]). This is a separate process to any building approval under*

the Building Act 2016.

- *Failure to address condition endorsement requirements prior to submitting for building approval may result in unexpected delays.*

Reason for condition

To ensure that the stability and integrity of the Council's highway reservation is not compromised by the development.

ENG r3

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

- **Urban - TSD-R09-v2 – Urban Roads Driveways and TSD R14-v2 Type KC vehicular crossing.**
- **Footpath - Urban Roads Footpaths TSD-R11-v2.**
- **Concrete kerbs and channels - TSD-R14-v2 - Reinstate redundant driveway crossover.**

Design drawings must be submitted and approved prior to any approval under the Building Act 2016. The design drawing must:

1. **Show the cross and long section of the driveway crossover within the highway reservation and onto the property.**
2. **Detail any services or infrastructure (i.e. light poles, pits, awnings) at or near the proposed driveway crossover.**
3. **Show swept path templates in accordance with AS/NZS 2890.1 2004(B85 or B99 depending on use, design template).**
4. **If the design deviates from the requirements of the TSD then the drawings must demonstrate that a B85 vehicle or 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 cars underside.**
5. **Show that vehicular and pedestrian sight lines are met as per AS/NZS 2890.1 2004.**
6. **Grated wedge, asphalt wedge and the standard open wedge driveway crossover are not permitted. Grated wedges are permits on highly used bike routes and details of the grate (ie mass) will be required. To gain access a concrete plinth to Councils standards may be constructed at the gutter. A drawing of a standard concrete plinth can be obtained from Councils Road Services Engineer. Note: that the agreement of the**

Council's is required to adjust footpath levels.

7. **Be prepared and certified by a suitable qualified person, to satisfy the above requirement.**

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

Advice:

- *The applicant is required submit detailed design documentation to satisfy this condition via Council's planning condition endorsement process (noting there is a fee associated with condition endorsement approval of engineering drawings [see general advice on how to obtain condition endorsement and for fees and charges]). This is a separate process to any building approval under the Building Act 2016.*
- *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.*
- *Failure to address condition endorsement requirements prior to submitting for building approval may result in unexpected delays.*

Reason for condition

To ensure that works will comply with the Council's standard requirements.

ENV 2

An approved Demolition and Construction Environmental Management Plan, prepared by suitably qualified persons, must be implemented.

A Demolition and Construction Environmental Management Plan must be submitted and approved prior to the commencement of works and prior to the granting of building consent.

The plan must include, but is not limited to, the following:

1. Details of the proposed construction methodology and expected likely timeframes.

2. The proposed days and hours of work and proposed hours of activities

likely to generate significant noise emissions (including volume and timing of heavy vehicles entering and leaving the site).

3. Details of potential environmental impacts associated with the development works including noise, vibration, erosion and pollution (air, land and water).

4. Details of proposed measures to avoid or mitigate to acceptable levels all identified potential environmental impacts during development works including, but not limited to:

a. A noise and vibration management plan including, but not limited to:
i. identification of potentially noisy or vibration-causing construction activities;
ii. procedures to ensure that all reasonable and feasible noise and vibration mitigation measures are applied during operation of the construction management plan; and
iii. details of monitoring measures and triggers for corrective actions.

b. A soil and water management plan including:
i. measures to minimise erosion and the discharge of contaminated stormwater off-site;
ii. measures to minimise dust emissions from the site;
iii. measures to manage the disposal of surface and groundwater from any excavations; and
iv. measures to prevent soil and debris being carried onto the street.

5. Details of proposed responsible persons, public communication protocols, compliance, recording and auditing procedures and complaint handling and response procedures.

The approved Demolition and Construction Environmental Management Plan forms part of this permit and must be complied with.

Advice: Once the plan has been approved the Council will issue a condition endorsement (see general advice on how to obtain condition endorsement).

Reason for Condition

To minimise the potential for environmental impacts from the construction works

ENVHE 1

Recommendations in the Planning report (2020) for Behrakis Holdings Pty Ltd 40 & 42-44 Burnett Street, ESA by GES enviro-solutions must be implemented

throughout the construction of the project

Reason for condition

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

SURV 8

The applicant, at no cost to the Council, must have prepared, entered into, and have registered at the Land Titles Office, a deed pursuant to Section 75CA of the *Conveyancing and Law of Property Act 1884* for the awning encroachment over Burnett Street, prior to the issue of a completion certificate.

Advice: A Section 75CA Conveyancing & Law of Property Act 1884 certificate for the occupation of a Highway requires that the encroachment is a minimum 2.40 metres above the footpath or 4.25 metres above the road carriageway. A 600mm set back from the back of kerb may also be required.

The applicant must prepare and forward the required instrument pursuant to section 75CA Conveyancing & Law of Property Act 1884, including a survey plan of the encroachment (certified by a registered surveyor), the associated $220 Council application fee and the Land Titles Office registration fee, to the Council for execution and subsequent registration within the Land Titles Office.

Reason for Condition

To ensure that the proposed building encroachment over Burnett Street is formalised in accordance with statutory provisions.

ENG 14

Access and services to the lot must be designed and installed to meet the needs of future development, prior to the sealing of the final plan or commencement of the use (whichever occurs first).

Reason for condition

To ensure that the subdivision of land provides adequate services to meet the projected needs of future development.

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.

SUB s1

The titles comprising the development site (CT 211936/1 and CT 228032/1) are to be adhered in accordance with the provisions of Section 110 of the Local Government (Building and Miscellaneous Provisions) Act 1993, to the satisfaction of the Council prior to the issue of any building consent, building permit (including demolition) and / or plumbing permit pursuant to the Building Act 2016 (if applicable), or the commencement of works on site (whichever occurs first).

Reason for condition

To ensure compliance with statutory provisions

Advice

The application for an adhesion order to the Council has a fee of $230. Evidence will be required that the owners and mortgagees do not object to the adhesion and the condition is considered completed when a copy of the receipt for the Land Titles Office lodgement slip for the adhesion order has been received by the Council. Note that the titles must be in the same ownership to enable them to be adhered by means of an adhesion order.

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 ENGINEERING

All engineering drawings required to be submitted and approved by this planning permit must be submitted to the City of Hobart as a CEP (Condition Endorsement) via the City's Online Service Development Portal. When lodging a CEP, please reference the PLN number of the associated Planning Application. Each CEP must also include an estimation of the cost of works shown on the submitted engineering drawings. Once that estimation has been confirmed by the City's Engineer, the following fees are payable for each CEP submitted and must be paid prior to the City of Hobart commencing assessment of the engineering drawings in each CEP:

Value of Building Works Approved by Planning Permit Fee:

- Up to $20,000: $150 per application.
- Over $20,000: 2% of the value of the works as assessed by the City's Engineer per assessment.

These fees are additional to building and plumbing fees charged under the Building and Plumbing Regulations.

Once the CEP is lodged via the Online Service Development Portal, if the value of building works approved by your planning permit is over $20,000, please contact the City's Development Engineer on 6238 2715 to confirm the estimation of the cost of works shown on the submitted engineering drawings has been accepted.

Once confirmed, pleased call one of the City's Customer Service Officers on 6238 2190 to make payment, quoting the reference number (ie. CEP number) of the Condition Endorsement you have lodged. Once payment is made, your engineering drawings will be assessed.

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.

PUBLIC HEALTH

You may be required to provide approved/endorsed plans for a food business fit out, in accordance with the National Construction Code - Building Code of Australia including Tas Part H102 for food premises which must have regard to the FSANZ Food Safety Standards. Click here for more information.

FOOD BUSINESS REGISTRATION

Food business registration in accordance with the *Food Act 2003*. Click here for more information.

PUBLIC HEALTH RISK

Public health risk activities (tattooing and piercing) licence. Click here for more information.

OCCUPATION OF THE PUBLIC HIGHWAY

You may require a permit for the occupation of the public highway for construction or special event (e.g. placement of skip bin, crane, scissor lift etc). Click here for more information.

You may require an occupational licence for use of Hobart City Council highway

reservation (e.g. outdoor seating, etc). Click here for more information.

You may require an cccupational license for structures in the Hobart City Council highway reservation, in accordance with conditions to be established by the Council. Click here for more information.

You may require a road closure permit for construction or special event. Click here for more information.

You may require a Permit to Open Up and Temporarily Occupy a Highway (for work in the road reserve). Click here for more information.

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).

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.

CBD AND HIGH VOLUME FOOTPATH CLOSURES

Please note that the City of Hobart does not support the extended closure of public footpaths or roads to facilitate construction on adjacent land.

It is the developer's responsibility to ensure that the proposal as designed can be constructed without reliance on such extended closures.

In special cases, where it can be demonstrated that closure of footpaths in the CBD and/or other high volume footpaths can occur for extended periods without unreasonable impact on other businesses or the general public, such closures may only be approved by the full Council.

For more information about this requirement please contact the Council's Traffic Engineering Unit on 6238 2804.

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.

TITLE ADHESION

An adhesion of your titles is required because a portion of your development is across one or more title boundaries. Contact your solicitor or a registered land surveyor to initiate the process.

WEED CONTROL

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

WORK PLACE HEALTH AND SAFETY

Appropriate occupational health and safety measures must be employed during the works to minimise direct human exposure to potentially-contaminated soil, water, dust and vapours. Click here for more information.

PROTECTING THE ENVIRONMENT

In accordance with the *Environmental Management and Pollution Control Act 1994*, local government has an obligation to "use its best endeavours to prevent or control acts or omissions which cause or are capable of causing pollution." Click here for more information.

LEVEL 1 ACTIVITIES

The activity conducted at the property is an environmentally relevant activity and a Level 1 Activity as defined under s.3 of the *Environmental Management and Pollution Control Act 1994*. For further information on what your responsibilities are, click here.

NOISE REGULATIONS

Click here for information with respect to noise nuisances in residential areas.

WASTE DISPOSAL

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

Further information regarding waste disposal can also be found on the Council's website.

FEES AND CHARGES

Click here for information on the Council's fees and charges.

DIAL BEFORE YOU DIG

Click here for dial before you dig information.

(Michael McClenahan)
Assistant 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.

Officer Not Assigned

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

Date of Report: 12 November 2020

Attachment(s):

Attachment B - CPC Agenda Documents

Attachment C - Cultural Heritage Referral Officer Report

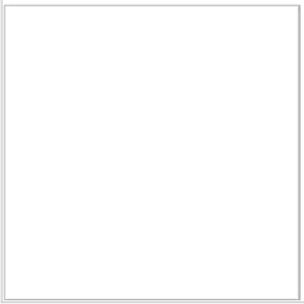
Attachment D - Development Engineering Referral Officer Report

Attachment E - Urban Design Advisory Panel Minutes

Planning: #213808

Property

40 BURNETT STREET NORTH HOBART TAS 7000



People

Applicant
*
JMG Engineers and Planners

117 Harrington Street
HOBART TAS 7000
(03) 6231 2555
planning@jmg.net.au

Owner
*
Behrakis Group Pty Ltd

10 Tasma Street
NORTH HOBART TAS 7000
62343754
Peter.Shires@behrakisgroup.com

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

Use

Commercial

Details

Have you obtained pre application advice?

- ☐ Yes

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

Are you applying for permitted visitor accommodation as defined by the State Government Visitor Accommodation 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)?
*

'Bulky Goods Sales' and 'Residential'

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

Demolition of existing buildings; adhesion of two lots; removal and replacement of existing access; development of a 5-storey mixed use building predominantly for apartments; 61 car parking spaces; associated services.

Estimated cost of development
*

14000000.00

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)

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?

-

Documents

Required Documents

Title (Folio text and Plan and Schedule of Easements)
*
All Titles.pdf

Plans (proposed, existing)
*
ARCHITECTURE - H1914 DA COMBINED DRAWINGS.pdf

Supporting Documents

Planning Report
42-44 Burnett Street Planning Report.pdf

Concept Services Report
19.0309 20200918 Gandy and Roberts Concept Services Report.pdf

PLANNING REPORT

FOR BEHRAKIS HOLDINGS PTY LTD

40 & 42-44 Burnett Street

October 2020

Engineers & Planners

Engineers & Planners

Johnstone McGee & Gandy Pty Ltd
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JMG Project No. 193078PH

Document Issue Status

Ver.	Issue Date	Description	Originator		Checked		Approved	
0.1	Sep 2019	Draft Initial Planning Report	IEB					
1.0	Sep 2020	Final for Submission	GRP		AS			
1.1	Oct 2020	Updated Final (incl. RFI responses) for client review	IEB				MSC	

TABLE OF CONTENTS

Executive Summary

Behrakis Holdings Pty Ltd seeks to develop land located at 40 Burnett Street and 42-44 Burnett Street, North Hobart, identified as CT 211936/1 and CT 228032/1 respectively. The site is within the Commercial Zone and is subject to the Historic Heritage overlay (Places of Archaeological Potential).

The proposed development is for:

- Demolition of the existing buildings on CT 211936/1 and CT 228032/1 (as shown in Demolition Plan in Appendix E);
- Adhesion of two lots to create a single development site area of 1128m^2;
- Removal of the existing accesses to the site and replacement with a vehicle access to service the proposed development;
- Development of a 5-storey mixed use building including:
  - 2 levels of on-site parking (Basement and Lower Ground level);
  - 1 ground floor, providing, commercial space, on-site parking, vehicle and pedestrian access to the residential dwellings;
  - 4 floors of residential development, comprising a total of 31 multiple dwellings arranged as follows:
    - Level 1, 3 x 3 bedrooms, 5 x 2 bedrooms and 1 x 1 bedroom (total 9 multiple dwellings);
    - Level 2, 3 x 3 bedrooms, 5 x 2 bedrooms and 1 x 1 bedroom (total 9 multiple dwellings);
    - Level 3, 3 x 3 bedrooms, 5 x 2 bedrooms and 1 x 1 bedroom (total 9 multiple dwellings); and
    - Level 4, 3 x 3-bedrooms and 1 x 2 bedroom Penthouses (total of 4 multiple dwellings).
- A total of 61 on-site parking spaces are proposed with:
  - 11 spaces on the ground floor, of which 5 are dedicated for visitor parking; and
  - 25 spaces each on the lower ground floor and on the basement level, respectively.
- Provision of associated sewer, water and stormwater services; and
- Provision of associated telecommunications, bicycle parking, rubbish and mailbox provisions for occupants of the development.

The development is shown in proposal plans contained in Appendix C.

The development is located on land within the Commercial Zone and the proposed development generates the following discretions under the *Hobart Interim Planning Scheme 2015* (the Scheme):

- **23.3 Use Standards**
  - 23.3.2 Noise (P1);
- **23.4 Development Standards for Buildings and Works**
  - 23.4.1 Building Height (P1);
  - 23.4.3 Design (P1);
  - 23.4.5 Landscaping (P1).
- **E2.0 Potentially Contaminated Land Code**
  - E2.5 Use Standards (P1 (b));
  - Development Standards - E2.6.2 Excavation (P1(b));
- **E5.0 Road and Railway Assets Code**
  - E5.5.1 Existing road accesses and junctions (P3);
  - E5.6.4 Sight distance at accesses, junctions and level crossings (P1).
- **E6.0 Parking and Access Code**
  - E6.6.1 Number of Car Parking Spaces (P1);
  - E6.6.3 Number of Motorcycle Parking Spaces (P1);
  - E6.7.3 Vehicle Passing Area along an Access (P1);
  - E6.7.8 Landscaping of Parking Areas (P1);

- E6.7.13 Facilities for Commercial Vehicles (P1).

- **E7.0 Stormwater Management Code**
  - E7.7.1 Stormwater Drainage and Disposal (P1 (c)) and (P2);
- **E9.0 Attenuation Code**
  - E9.7.2 Development for Sensitive Use in Proximity to Use with Potential to Cause Environmental Harm (P1);
- **E13.0 Historic Heritage Code**
  - E13.10.1 Building, Works and Demolition (P1).

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 ought to be supported by the Planning Authority.

1. Introduction

JMG Engineers and Planners have been engaged by Behrakis Holdings Pty Ltd to prepare a planning permit application for a mixed-use development at 40 and 42-44 Burnet Street, North Hobart, identified as CT 211936/1 and CT 228032/1 respectively. The proposal involves adhesion of the existing titles, the demolition of existing buildings, and new development.

This report serves to provide an assessment of the proposed development and works against the provisions of the *Hobart Interim Planning Scheme 2015* ('the Scheme').

A number of expert reports are provided in support of the planning permit application including Traffic Impact Assessment (TIA), Environmental Site Assessment (ESA), Archaeological Impact Assessment and Statement, Building Physics Report (Daylight Penetration Assessment) and an Architectural Design Statement. Such reports are provided in the Appendices to this planning report and are referenced as appropriate throughout the document.

2. Site Location & Context

The development site is located approximately 1.3 km north west of the Hobart GPO in the suburb of North Hobart, on the western shore of the Derwent River. The proposed development will require works on a number of titles as listed in Table 1 below with copies provided in Appendix A. Copies of the owner advice letters and Council consent as required by section 52 of the *Land Use Planning and Approvals Act 1993* are provided in Appendix D.

Table 1: Summary of existing titles involved in the proposed development.

Title Reference	Street Number	Comments re existing/proposed	Owner Advice/Consent
CT 211936/1	40 Burnett Street	Containing an existing building and outbuildings, used for residential purposes, with an area of approximately 394 m^2.	Advice (section 52(1) *Land Use Planning and Approvals Act 1993*)
CT 228032/1	42-44 Burnett Street	Containing an existing commercial building, previously used for "Novus Windscreen Repairs", with an area of approximately 734m^2; Previously, of significance was the presence of Caltex operating on the site during the period that the underground storage tank was commissioned.	Advice (section 52(1) *Land Use Planning and Approvals Act 1993*)
N/A Refer notations on above two title Folios	N/A Burnett Street Road Reserve	Awning over pedestrian entry encroaches on airspace of Burnett Street road reserve. Works to reconfigure vehicle accesses and infrastructure connections associated with the development, located within Burnett Street road reserve.	Council Consent as administering Authority (section 52 (1B) *Land Use Planning and Approvals Act 1993*)

The development site is located on land zoned 'Commercial'. Existing buildings within 100 m of the development site, also on land zoned 'Commercial', are generally single storey displaying a mix of styles including:

- Residential style buildings adjoining the development site to the north east and north, as well as on the north-western side of Burnett Street;
- Commercial buildings adjoining the development site to the south and south-west, as well as on the north-western side of Burnett Street.

Land to the north west of Burnett Street is zoned 'Light Industrial'; land to the north east of Argyle Street is zoned 'Commercial'; and land occupied by Soundy Park located approximately

70 m directly north of the development site is zoned 'Open Space'. Zoning of the site is shown below in Figure 2-1.

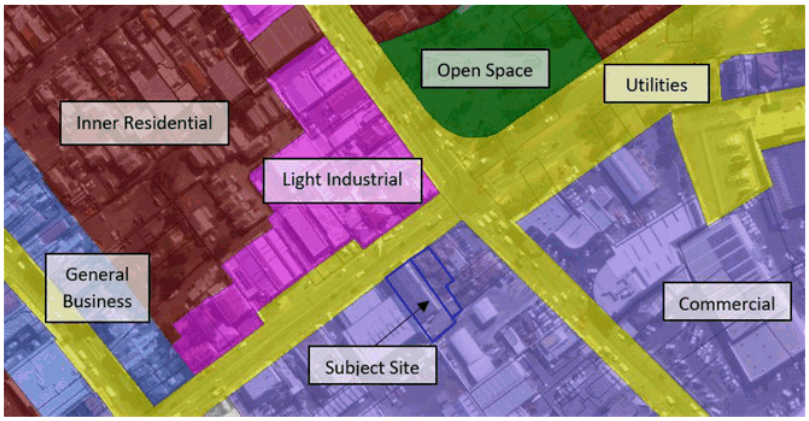


Figure 2-1: Zoning of Subject Site and surrounding area (source: List Map).

The development site itself is clear of the LISTmap overlays as shown in Figure 2-2 and Figure 2-3 below, but it is located within the area defined by Figure E13.4.1 Places of Archaeological Potential within the Scheme.

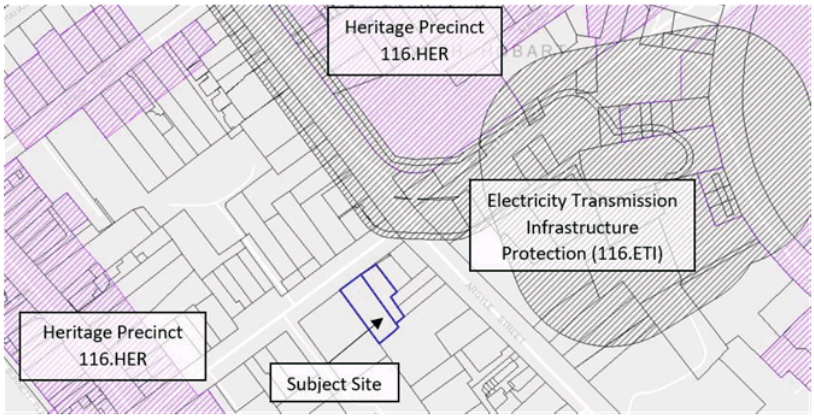


Figure 2-2: Heritage and Electricity Transmission Overlays (source: List Map).

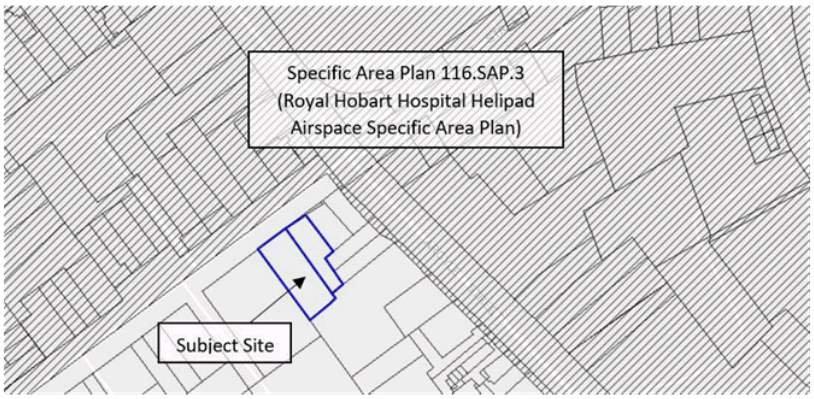


Figure 2-3: Specific Area Plan Overlay (source: List Map).

Land to the north east of Argyle Street and north west of Burnett Street is within the Specific Area Plan *116.SAP.3* (as shown above in Figure 2-3). There are also Heritage provisions on land within 150m of the development site including:

- A Heritage Precinct (116.HER) along Elizabeth Street (to the south west) and Tasma Street to the south; and
- A number of properties registered on the Tasmanian Heritage Register, including two on the north west side of Burnett Street:
  - 39 Burnett Street (Town House, ID 6581); and
  - 35 -37 Burnett Street, identified on the Cadastre as 276 Argyle Street (Conjoined Cottages, ID 2794).

The surrounding built fabric is quite mixed, and the Architectural Design Statement in Appendix L provides more information on how the proposal responds to its surrounds.

HCC has advised that the land adjoining the proposed development site to the south west, 48 Burnett Street (identified as CT 11349/5), is known as a site on which potentially contaminating uses exist or have occurred. Accordingly, the proposal is considered against the provisions of *E2.0 Potentially Contaminated Land Code*.

Land approximately 150m north east of the development site contains Tas Networks infrastructure, is zoned 'Utilities', and is subject to the Electricity Transmission Infrastructure Protection Overlay (as shown above in Figure 2-2). Land within 200 m to the north west is zoned 'Inner Residential' and 'General Business', highlighting the diverse development and use nature of this established Hobart area.

The development site is located on land fully serviced by Tas Water for potable water and sewerage. There are 8 Metro Bus stops within a 300m radius of the site, associated with a number of services to the northern suburbs as well as southern and eastern suburbs via the Elizabeth Street bus interchange facilities.

3. Proposed Use & Development

The proposal is for a mixed-use development comprising commercial use(s) at the ground floor level with residential uses on Levels 1 to 4 above.

In the Commercial Zone, 'Residential' is a permitted use with the qualification that it is above ground level (except for access). The proposed residential development is therefore considered a permitted use.

The uses within the 177m^2 commercial floor area on the ground floor of the building will be within the remit of the 'General retail and hire' use class which is a discretionary use within the zone. Although the specific nature of the tenancy will depend upon market conditions at the time it is tenured, the assessment of the proposal against the Scheme assumes the 'General retail and hire' use class for the purposes of this application.

The proposed development will involve the demolition of the existing non historic buildings on number 40 and 42-44 Burnett Street; an adhesion of two titles (CT 228032/1 and CT 211936/1) to create one new lot; removal of the existing vehicle access to 42-44 Burnett Street; and creation of a new vehicle access to the new proposed lot.

Detailed plans of the proposed development are shown in Appendix C and details of the demolition are outlined in a Demolition Plan in Appendix E.

The development site is not subject to any overlays (except the Scheme Archaeological Potential); however due to the nature of the proposal, a number of Scheme Codes apply and have been considered in Section 4 of this report, in addition to the Special Provisions and Commercial Zone clauses in the Scheme.

4. Hobart Interim Planning Scheme 2015

9.3 Adjustment of a Boundary

The proposed development will involve merging two lots (CT 211936/1 and CT 228032/1) to create one new lot of 1128m^2. This aspect of the proposed development has been considered against criteria for Adjustment of a Boundary (Clause 9.3.1) under the Scheme and an assessment is as follows:

(a) no additional lots are created;	Complies - the proposed boundary adjustment will convert 2 existing lots into 1 lot.
(b) there is only minor change to the relative size, shape and orientation of the existing lots;	Does not comply - there will be more than a minor change to the existing 2 lots that comprise the development site.
(c) no setback from an existing building will be reduced below the applicable minimum setback requirement;	Complies
(d) no frontage is reduced below the applicable minimum frontage requirement; and	Complies
(e) no lot boundary that aligns with a zone boundary will be changed.	Complies

As the proposed development does not satisfy clause 9.3.1 (b) and is not considered a subdivision, it will be treated as an adhesion under Section 110 of the *Local Government (Building and Miscellaneous Provisions) Act 1993*, which is thought to be satisfactorily addressed through permit conditions prescribing an adhesion order.

9.4 Demolition

The proposed development includes the demolition of all existing buildings on 40 Burnett Street and 42-44 Burnett Street as shown in Appendix E. The proposed demolition forms part of a permissible development application within the Commercial zone and it is considered that Clause 9.4 has been satisfied.

4.1 Commercial Zone

The proposed 'General Retail and Hire' and 'Residential' uses are discretionary and permitted uses (respectively) as per Clause 23.2 (Use Table) within the Commercial Zone of the Scheme. The 'General Retail and Hire' use of the ground floor commercial area has therefore been considered against the provisions of Clause 23.3 (Use Standards) below.

It is noted that any future tenancies for the ground floor commercial space that do not fit into the General Retail and Hire category would require a separate 'change of use' planning permit application to be lodged.

23.3 Use Standards

As the subject site is not located within 50m of a residential zone, it is considered that the following Use Standards are not applicable to the proposal:

- *24.3.1 Hours of Operation;*
- *24.3.3 External Lighting;*
- *24.3.4 Commercial Vehicle Movements; and*
- *24.3.5 Outdoor Work Areas*

23.3.2 Noise

Objective:	
To ensure that noise emissions do not cause environmental harm and do not have unreasonable impact on residential amenity on land within a residential zone.	
Acceptable Solutions	**Performance Criteria**
A1 Noise emissions measured at the boundary of a residential zone must not exceed the following: (a) 55dB(A) (LAeq) between the hours of 7.00 am to 7.00 pm; (b) 5dB(A) above the background (LA90) level or 40dB(A) (LAeq), whichever is the lower, between the hours of 7.00 pm to 7.00 am; (c) 65dB(A) (LAmax) at any time. Measurement of noise levels must be in accordance with the methods in the Tasmanian Noise Measurement Procedures Manual, issued by the Director of Environmental Management, including adjustment of noise levels for tonality and impulsiveness. Noise levels are to be averaged over a 15-minute time interval.	**P1** Noise emissions measured at the boundary of a residential zone must not cause environmental harm within the residential zone.

The nearest residential zone is an 'Inner Residential' zone 70m north west of the site followed by a subsequent 'Inner Residential' zone 130m south of the site. The proposal is likely to meet the acceptable solution for Clause *23.3.2 Noise* as the proposed activities on the site would be limited to residential use and activities associated with the proposed General Retail and Hire use. These activities are not considered likely to generate significant noise that would be detectable at the boundary of a residential zone above the relatively high ambient noise levels found in the area. The site is separated from the nearest residential zone land to the north-west by Burnett Street, which is a relatively busy road, and a commercial area on the opposite side of this road that is within the Light Industrial Zone. Therefore, the ambient noise level at the boundary of the residential zone closest to the site, which is adjacent to this road, would be relatively high. Noise emissions from the site as a result of the proposed development are unlikely to be perceptible at the boundary above this ambient noise level.

It is considered that the proposal is able to satisfy Performance Criteria P1.

23.3.6 Adult Entertainment Venues

The proposal does not include an Adult Entertainment Venue. Accordingly this provision is considered as not applicable.

23.3.7 Take away Food Shops

For the purposes of this application the assigned use of the ground floor commercial area 'General retail and hire' Clause 23.3.7 is considered as not applicable.

23.3.8 Hotel Industries

The proposed development is not for a hotel industry use; hence Clause 23.3.8 is considered not applicable.

23.3.9 Manufacturing and Processing Uses

As no part of the proposed development contains a manufacturing or processing use, Clause 23.3.8 is considered not applicable.

23.4 Development Standards for Buildings and Works

23.4.1 Building Height

Objective:	
To ensure that building height contributes positively to the streetscape and does not result in unreasonable impact on residential amenity of land in a residential zone.	
Acceptable Solutions	**Performance Criteria**
A1 Building height must be no more than: (a) 11.5m high and a maximum of 3 storeys; or (b) 15m high and a maximum of 4 storeys if the development provides at least 50% of the floor space above ground level for residential use.	**P1** Building height must satisfy all of the following: (a) be consistent with any Desired Future Character Statements provided for the area; (b) be compatible with the scale of nearby buildings; (c) not unreasonably overshadow adjacent public space; (d) allow for a transition in height between adjoining buildings, where appropriate.

The proposed building will range in height above ground level from16.2m (at the front of the building) to 16.3m for the various elements of the roof line; with the Lift well protruding to a height of 18.4 m and therefore does not comply with the Acceptable Solution. The proposal is considered against the Performance Criteria (P1) as follows:

- There is no Desired Future Character Statement for the Commercial Zone, therefore sub-clause (a) is not applicable;
- Photo montages in Appendix C show the scale of the proposed development in the context of nearby buildings and that the proposed development is generally consistent with heights of surrounding development (albeit slightly higher than surrounding residential development), satisfying sub-clause (b);
- The only public space adjacent the site are the footpaths on either side of Burnett Street and shadow diagrams which have been generated for the site (Appendix C) demonstrate that overshadowing of these is not unreasonable, satisfying sub-clause (c);
- The scale of the proposed development is not significantly greater than that of surrounding commercial buildings, given the mixed nature of existing development within the commercial zone the transition in height is considered reasonable, satisfying (d).

On the basis of the above, the proposal is considered to satisfy the associated Performance Criteria (P1).

Acceptable Solutions	Performance Criteria
A2 Building height within 10 m of a residential zone must be no more than 8.5 m.	**P2** Building height within 10 m of a residential zone must be compatible with the building height of existing buildings on adjoining lots in the residential zone.....

As the site of the proposed development is not within 10m of a residential zone, the above sub-clauses do not apply to this application.

23.4.2 Setbacks

Objective:	
To ensure that building height contributes positively to the streetscape and does not result in unreasonable impact on residential amenity of land in a residential zone.	
Acceptable Solutions	**Performance Criteria**
A1 Building setback from frontage must be parallel to the frontage and must be no less than: 0 m.	**P1** Building setback from frontage must satisfy all of the following: (a) be consistent with any Desired Future Character Statements provided for the area; (b) be compatible with the setback of adjoining buildings, generally maintaining a continuous building line if evident in the streetscape; (c) enhance the characteristics of the site, adjoining lots and the streetscape; (d) provide adequate opportunity for parking.

The building setback of the proposed development, at the ground level, is generally parallel to the frontage and setback between 0.8m and 1.8m, as shown on the Ground Plan in Appendix C. It is noted that the upper residential floors, levels 1 to 4 are all aligned to the frontage boundary with 0m setback.

The proposal is considered compliant with Acceptable Solution (A1).

Acceptable Solutions	Performance Criteria
A2 Building setback from the General Residential or Inner Residential Zone must be no less than: (a) 5 m; (b) half the height of the wall, whichever is the greater.	**P2** Building setback from General Residential or Inner Residential Zone must be sufficient to prevent unreasonable adverse impacts on residential amenity by: (a) overshadowing and reduction of sunlight to habitable rooms and private open space on adjoining lots to less than 3 hours between 9.00 am and 5.00 pm on June 21 or further decrease sunlight hours if already less than 3 hours; (b) overlooking and loss of privacy; (c) visual impact when viewed from adjoining lots,

	taking into account aspect and slope.

The total wall height of the proposed development is 16.3m and therefore the building should be setback from that at least 8.2m from the nearest residential zone. The nearest residential land, zoned 'Inner Residential', is 57m north west of the site.

Therefore, the proposed development complies with Acceptable Solution (A2).

23.4.3 Design

Objective:	
To ensure that building design contributes positively to the streetscape, the amenity and safety of the public and adjoining land in a residential zone.	
Acceptable Solutions	**Performance Criteria**
A1 Building design must comply with all of the following: (a) provide the main pedestrian entrance to the building so that it is clearly visible from the road or publicly accessible areas on the site; (b) for new building or alterations to an existing facade provide windows and door openings at ground floor level in the front façade no less than 40% of the surface area of the ground floor level facade ; (c) for new building or alterations to an existing facade ensure any single expanse of blank wall in the ground level front façade and facades facing other public spaces is not greater than 30% of the length of the facade; (d) screen mechanical plant and miscellaneous equipment such as heat pumps, air conditioning units, switchboards, hot water units or similar from view from the street and other public spaces; (e) incorporate roof-top service infrastructure, including service plants and lift structures, within the design of the roof; (f) provide awnings over the public footpath if existing on the site or on adjoining lots; (g) not include security shutters over windows or doors with a frontage to a street or public place.	**P1** Building design must enhance the streetscape by satisfying all of the following: (a) provide the main access to the building in a way that addresses the street or other public space boundary; (b) provide windows in the front façade in a way that enhances the streetscape and provides for passive surveillance of public spaces; (c) treat large expanses of blank wall in the front façade and facing other public space boundaries with architectural detail or public art so as to contribute positively to the streetscape and public space; (d) ensure the visual impact of mechanical plant and miscellaneous equipment, such as heat pumps, air conditioning units, switchboards, hot water units or similar, is insignificant when viewed from the street; (e) ensure roof-top service infrastructure, including service plants and lift structures, is screened so as to have insignificant visual impact; (f)only provide shutters where essential for the security of the premises and other alternatives for ensuring security are not feasible; (g) be consistent with any Desired Future Character Statements provided for the area.

The proposed development largely meets the above Acceptable Solution (A1) with the exception of sub-clause (e) to "incorporate roof-top service infrastructure, including service plants and lift structures, within the design of the roof". The lift overrun shaft is not incorporated into the roof design.

Therefore, the proposal has been assessed against the associated Performance Criteria (P1) as follows:

- The main pedestrian entrances to the building, off of Burnett Street, are shown in the elevation drawings (Appendix C) to clearly front the common boundary with Burnett Street and are easily visible and accessible, satisfying sub-clause (a);
- Approximately 61% of the building's front façade is for window openings, allowing for a visual connection between the building and streetscape. Furthermore, windows are from

the commercial tenancy on ground level; apartment living and bedrooms areas on levels one to three; and penthouse living and bedroom areas on level five; allowing for effective overlooking and thus passive surveillance of the public space that is the footpath, satisfying sub-clause (b);

- As stated above, windows occupy approximately 61% of the front façade and therefore there are no large expanses of blank wall, so sub-clause (c) is not applicable;
- No mechanical plant or miscellaneous equipment is viewable from the street, satisfying sub-clause (d);
- Although the lift overrun shaft is visible from the street, it is setback from the front façade 18.4m and therefore the visual impact is considered insignificant satisfying sub-clause (e);
- The proposal does not include shutters and therefore sub-clause (f) is not applicable;
- There are no Desired Future Character Statements for the Commercial Zone within the relevant Planning Scheme, therefore sub-clause (g) is satisfied.

On the basis of the above, the proposed development is considered to satisfy the applicable elements of Performance Criteria (P1).

Acceptable Solutions	Performance Criteria
A2 Walls of a building on land adjoining a residential zone must comply with all of the following: (a) be coloured using colours with a light reflectance value not greater than 40 percent; (b) if within 50 m of a residential zone, must not have openings in walls facing the residential zone, unless the line of sight to the building is blocked by another building.	**P2** No performance criteria.

The site does not adjoin a residential zone nor is it within 50m of a residential zone, accordingly this provisions is considered not applicable.

23.4.4 Passive Surveillance

Objective:	
To ensure that building design provides for the safety of the public.	
Acceptable Solutions	**Performance Criteria**
A1 Building design must comply with all of the following: (a) provide the main pedestrian entrance to the building so that it is clearly visible from the road or publicly accessible areas on the site; (b) for new buildings or alterations to an existing facade provide windows and door openings at ground floor level in the front façade which amount to no less than 40% of the surface area of the ground floor level facade; (c) for new buildings or alterations to an existing facade provide windows and door openings at ground floor level in the façade of any wall which faces a public space or a car park which amount to no less than 30% of the surface area of the ground floor level facade; (d) avoid creating entrapment spaces around the building site, such as concealed alcoves near public spaces; (e)provide external lighting to illuminate car parking areas and pathways;	**P1** Building design must provide for passive surveillance of public spaces by satisfying all of the following: (a) provide the main entrance or entrances to a building so that they are clearly visible from nearby buildings and public spaces; (b) locate windows to adequately overlook the street and adjoining public spaces; (c) incorporate shop front windows and doors for ground floor shops and offices, so that pedestrians can see into the building and vice versa; (d) locate external lighting to illuminate any entrapment spaces around the building site; (e) provide external lighting to illuminate car parking areas and pathways;

(f) provide well-lit public access at the ground floor level from any external car park.	(f) design and locate public access to provide high visibility for users and provide clear sight lines between the entrance and adjacent properties and public spaces; (g) provide for sight lines to other buildings and public spaces.

The proposed development includes the following features;

- The main pedestrian entrances to the building are from Burnett Street as shown in the elevation drawings (Appendix C) and are easily visible and accessible, (a);
- Approximately 46% of the building's ground floor, front façade is for window openings or glass doors, allowing for a visual connection between the building and streetscape. (b);
- As shown in the elevation plans there are no large expanses of blank wall, the windows and doors (including non-glass doors) make up over 50% of the façade (c);
- The entryway to the building site has a relatively even setback from Burnett Street and avoids creating entrapment spaces, (d);
- External lighting to public areas will be implemented as per relevant Australian Standards as well as lighting for the underground car parking area, (e);
- As there is no external car park, sub-clause (f) is not applicable.

Accordingly the proposal is considered compliant with Acceptable Solution (A1).

23.4.5 Landscaping

Objective:	
To ensure that a safe and attractive landscaping treatment enhances the appearance of the site and if relevant provides a visual break from land in a residential zone.	
Acceptable Solutions	**Performance Criteria**
A1 Landscaping along the frontage of a site is not required if all of the following apply: (a) the building extends across the width of the frontage, (except for vehicular access ways); (b) the building has a setback from the frontage of no more than 1m.	**P1** Landscaping must be provided to satisfy all of the following: (a) enhance the appearance of the development; (b) provide a range of plant height and forms to create diversity, interest and amenity; (c) not create concealed entrapment spaces; (d) be consistent with any Desired Future Character Statements provided for the area.

Although the building extends across the width of the frontage, its minimum setback ranges from 0.8m to 1.8mand it therefore does not meet the Acceptable Solution (A1). It has instead been considered against the associated Performance Criteria (P1) as follows:

- Landscaping will enhance the overall appearance of the proposed development through being spread out across the five levels of the building and integrated with the façade, as shown in the visualisations (Appendix C), satisfying sub-clause (a);
- Plants shown in the visualisations (Appendix C) are at a range of heights, providing diversity and interest, satisfying sub-clause (b);
- Plants are integrated into the façade and therefore do not create concealed entrapment spaces, satisfying sub-clause (c);
- As there are no Desired Future Character Statements for the area sub-clause (d) is not applicable.

On the basis of the above, the proposal is considered to satisfy the relevant Performance Criteria (P1).

Acceptable Solutions	Performance Criteria
A2 Along a boundary with a residential zone landscaping must be provided for a depth no less than: 2 m.	**P2** Along a boundary with a residential zone landscaping or a building design solution must be provided to avoid unreasonable adverse impact on the visual amenity of adjoining land in a residential zone, having regard to the characteristics of the site and the characteristics of the adjoining residentially-zones land

As no part of the site of the proposed development is adjacent to a residential zone, sub-clauses A2 and P2 are not applicable to this application.

23.4.6 Outdoor Storage Areas

Objective:	
To ensure that outdoor storage areas for non-residential use do not detract from the appearance of the site or the locality.	
Acceptable Solutions	**Performance Criteria**
A1 Outdoor storage areas for non-residential uses must comply with all of the following: (a) be located behind the building line; (b) all goods and materials stored must be screened from public view; (c) not encroach upon car parking areas, driveways or landscaped areas.	**P1** Outdoor storage areas for non-residential uses must satisfy all of the following: (a) be located, treated or screened to avoid unreasonable adverse impact on the visual amenity of the locality; (b) not encroach upon car parking areas, driveways or landscaped areas.

There is no outdoor storage proposed for the non-residential use and accordingly this provision is considered not applicable.

23.4.7 Fencing

Objective:	
To ensure that fencing does not detract from the appearance of the site or the locality and provides for passive surveillance.	
Acceptable Solutions	**Performance Criteria**
A1 Fencing must comply with all of the following: (a) fences, walls and gates of greater height than 1.5 m must not be erected within 10 m of the frontage; (b) fences along a frontage must be at least 50% transparent above a height of 1.2 m; (c) height of fences along a common boundary with land in a residential zone must be no more than 2.1 m and must not contain barbed wire.	**P1** Fencing must contribute positively to the streetscape and not have an unreasonable adverse impact upon the amenity of land in a residential zone which lies opposite or shares a common boundary with a site, having regard to all of the following: (a) the height of the fence; (b) the degree of transparency of the fence; (c) the location and extent of the fence; (d) the design of the fence; (e) the fence materials and construction; (f) the nature of the use; (g) the characteristics of the site, the streetscape and the locality, including fences;

	(h) any Desired Future Character Statements provided for the area.

No fencing is proposed as part of the proposed development therefore Clause 23.4.7 is considered not applicable.

E 2.0 Potentially Contaminated Land Code

HCC has advised that the present and historic use of 40 Burnett Street is recorded as residential. The property at 42-44 Burnett Street is vacant but the Environmental Site Assessment (ESA) by GES (Appendix F) indicates that one of the historic uses on the site has been an underground storage tank with the presence of Caltex operating on the site. In addition, the adjoining property to the south west, 48 Burnett Street (CT 11349/5) is recorded with current and historic permitted uses listed in Table E2.2 of the Scheme, 'Potentially Contaminating Activities'. Other historic uses on nearby sites identified by the ESA are an unpaved storage yard at 27 to 35 Tasma Street (CT 52702/2), 9.5m south of the site's rear boundary, and a storage warehouse at 48 Burnett Street (CT 11349/5). Contamination concerns relate to groundwater down gradients from these uses, and in the case of the underground tank on the subject site, soil around the tank, impacted groundwater, and fill material onsite.

The Scheme defines 'potentially contaminated land' as:

land that is, or adjoins, land that the applicant or the planning authority:

(a) knows to have been used for a potentially contaminating activity by reference to:-
(i) a notice issued in accordance with Part 5A of the Environmental Management and Pollution Control Act 1994; or
(ii) a previous permit ; or
(b) ought reasonably to have known was used for a potentially contaminating activity.

The proposed development is for mixed uses (including residential, i.e. sensitive use) and development on potentially contaminated land, and the Code needs to be considered as per Clause E2.2 Application of the Code. An assessment of the proposal against the applicable Code provisions follows.

E2.5 Use Standards

Objective:	
To ensure that potentially contaminated land is suitable for the intended use	
Acceptable Solution	**Performance Criteria**
A1 The Director, or a person approved by the Director for the purpose of this Code: (a) certifies that the land is suitable for the intended use; or (b) approves a plan to manage contamination and associated risk to human health or the environment that will ensure the land is suitable for the intended use.	P1 Land is suitable for the intended use, having regard to: (a) an environmental site assessment that demonstrates there is no evidence the land is contaminated; or (b) an environmental site assessment that demonstrates that the level of contamination does not present a risk to human health or the environment; or (c) a plan to manage contamination and associated risk to human health or the environment that includes: (i) an environmental site assessment; (ii) any specific remediation and protection measures required to be implemented before any use commences; and

	(iii) a statement that the land is suitable for the intended use.

The Director has not certified that the land is suitable for the intended use or approved a plan to manage contamination and associated risk to human health or the environment that will ensure the land is suitable for the intended use. Therefore, the proposal does not meet the Acceptable Solution (A1). Accordingly, the proposal has therefore been assessed against the Performance Criteria (P1).

The Environmental Site Assessment (Appendix F) undertaken for the site confirms that there is no evidence that the land is contaminated in terms of evaluated risks to human health or the environment. Provided that recommendations of the Environmental Site Assessment are followed, the planned excavation works and change of use will not adversely impact human health or the environment.

Based on the above the proposal is considered to satisfy Performance Criteria P1 (b).

E2.6 Development Standards

E2.6.1 Subdivision

As the proposed development does not involve subdivision, this clause is considered as not applicable.

E2.6.2 Excavation

Objective:	
To ensure that works involving excavation of potentially contaminated land does not adversely impact on human health or the environment.	
Acceptable Solution	**Performance Criteria**
A1 No acceptable solution.	P1 Excavation does not adversely impact on health and the environment, having regard to: (a) an environmental site assessment that demonstrates there is no evidence the land is contaminated; or (b) a plan to manage contamination and associated risk to human health and the environment that includes: (i) an environmental site assessment; (ii) any specific remediation and protection measures required to be implemented before excavation commences; and (iii) a statement that the excavation does not adversely impact on human health or the environment.

An Environmental Site Assessment (Appendix F) was prepared for the site as per P1 (b) (i); recommending that a soil and water management plans be put in place for general sediment control to reduce the loadings into the waterways (ii) and concludes that "providing the recommendations are followed in relation to the environment…the planned excavation works and change of use will not adversely impact human health or the environment (iii).

On this basis, the applicable elements of Performance Criteria (P1 (b))are satisfied.

E 5.0 Road and Railway Assets Code

The proposed development will require a new vehicle crossing; accordingly, the code must be considered as per Clause E 5.2.1 (a).

E 5.5 Use Standards

Burnett Street is not a Category 1 or 2 Road; with a speed limit of 50km/hr and does not impact on any existing Level Crossings. Accordingly, the following use 'Use Standards' are considered as not applicable:

- *E5.5.1 Existing road accesses and junctions Acceptable Solutions A1 and A2*; and
- *E5.5.2 Existing level crossings.*

E5.5.1 Existing road 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 Any increase in vehicle traffic at an existing access or junction in an area subject to a speed limit of 60km/h or less, must be safe and not unreasonably impact on the efficiency of the road, having regard to: (a) the increase in traffic caused by the use; (b) the nature of the traffic generated by the use; (c) the nature and efficiency of the access or the junction; (d) the nature and category of the road; (e) the speed limit and traffic flow of the road; (f) any alternative access to a road; (g) the need for the use; (h) any traffic impact assessment; and (i) any written advice received from the road authority.

A Traffic Impact Assessment (TIA) undertaken for the proposed development (refer Appendix G) calculates that the proposed development will generate 169 vehicle trips per day and therefore the proposal does not meet the Acceptable Solution (A3). It has therefore been considered against the associated Performance Criteria (P3) as follows:

- As stated above, a TIA undertaken for the site calculates that the proposed development will generate 169 vehicle trips per day from the apartment and commercial uses combined with up to 19 vehicles/hour during the afternoon peak hour. Such traffic movements are not considered to be particularly high, averaging one vehicle every three minutes during peak hour periods and even less at other times, satisfying sub-clause (a);
- The nature of the traffic generated by the use is predominantly private vehicles, however even these movements are relatively low, satisfying sub-clause (b);
- Vehicle access into the site will be via a 5.8-metre-wide access driveway off the southern side of Burnett Street, which is sufficient to accommodate the two-way traffic movement, satisfying sub-clause (c);
- Burnett Street is a local road comprising four lanes, with two in each direction, with kerbside lanes normally used for on-street parking. The TIA has found that traffic impacts

of the proposed development will not pose any issues of concern to the road or its nature as described, satisfying sub-clause (d);

- Burnett Street has a speed limit of 50km/hour and the TIA calculates that traffic activity along the street is 1300 vehicles/hour in the morning and 1,099 vehicles/hour in the afternoon. Based on these existing conditions of the road and traffic environment, the TIA estimates that there are no issues of concern from the proposed development, satisfying sub-clause (e);
- There is no alternative access to a road, therefore sub-clause (f) is not applicable;
- The proposed development is predominantly residential (apartments) with an additional commercial tenancy and the use will contribute to providing more diverse housing options for the area, close to the city and sustainable transport options (walking and cycling). The additional car parking is therefore warranted, satisfying sub-clause (g);
- Analysis contained in the TIA concludes that the proposed development will not give rise to any adverse operational or safety issues and it is supported on traffic grounds, satisfying sub-clause (h);
- No written advice has been received from the road authority; therefore sub-clause (i) is not applicable.

On the basis of the above, the proposed development is not considered to unreasonably impact on the efficiency of the road therefore satisfying the Performance Criteria (P3).

E5.5.2 Existing level crossings - Not Applicable

The proposed development does not impact on any existing Level Crossings.

E5.6 Development Standards

E5.6.1 Development adjacent to road and railways

As the site of the proposed development is not adjacent a Category 1 or Category 2 road or rail network, Clause E5.6.1 is not applicable.

E5.6.2 Road accesses and junctions

Acceptable Solution	Performance Criteria
A1 No new access or junction to roads in an area subject to a speed limit of more than 60km/h.	P1 ***

The speed limit along Burnett Street is 50 km/hr and accordingly A1 is considered as not applicable.

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.

The Site Plan (DA102) contained in the drawing set (refer Appendix C) indicates that there will only be one new vehicle access to provide both entry and exit for the proposed building, which is proposed at the northern end of the site's frontage. The proposal is compliant with the Acceptable Solution (A2).

E5.6.3 New level crossings

As the site is not in proximity to any rail network, Clause E5.6.3 is not considered applicable.

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.

The distance between the junction to the new car park and the nearest intersection south west of the site (148m distance) meets requirements of Table E5.1 (Safe Intersection Site Distance). However, the distance between the junction to the new car park and the nearest intersection north east of the site (50m) is less than the requirements of Table E5.1. Therefore, the proposal has been assessed against the associated Performance Criteria (P1) as follows:

- The nature of the traffic generated by the use is predominantly private vehicles and calculated to be up to 19 vehicles/hour during the afternoon peak hour, which is not a particularly high traffic movement for a development and averages one vehicle every three minutes during peak hour, satisfying sub-clause (a);
- The TIA estimates traffic travelling on Burnett Street to be 1300 vehicles/hour in the morning and 1,099 vehicles/hour in the afternoon, however gaps in the traffic stream generated by the upstream traffic signals means that the access to and from the development site will operate without any significant queuing or delay, satisfying sub-clause (b);
- There is no alternative access to a road, therefore sub-clause (c) is not applicable;
- As the access from the proposed development onto Burnett Street is the only entry to the site's car parking, it is considered necessary and has been positioned to optimise appropriate sight distances, satisfying sub-clause (d);
- A TIA prepared for the proposed development (refer Appendix F) measured sight distances for vehicles turning out of the development and found all sight distances to exceed the Planning Scheme requirements, satisfying sub-clause (e);

- As stated in the response to sub-clause (d), the car parking access point has been positioned to optimise appropriate sight distances, satisfying sub-clause (f);
- No written advice has been received from the road authority; therefore sub-clause (g) is not applicable.

The full results of the TIA are provided under Appendix F.

On the basis of the above, the proposed development is considered to satisfy the Performance Criteria (P1).

E 6.0 Parking and Access Code

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.

E 6.6 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 development site is not within a parking plan area adopted by Council nor is it subject to clauses E6.6.5 to E6.6.10 of this planning scheme. Therefore, both the 'General retail and hire' and 'Residential' use components of the proposed development have been considered against Table E6.1 ('Number of Car Parking Spaces Required'). The proposal comprises thirty-one (31) multiple dwellings, comprising 3 x 1-bedroom, 16 x 2-bedrooms, and 12 x 3-bedroom apartments or penthouses. It also comprises a 'General retail and hire' use within the commercial tenancy on ground floor. Table E6.1 stipulates the following car parking requirements for 'Residential' use:

- 1 car park for each single bedroom dwelling (3 are required);
- 2 car parks for each dwelling with 2 or more bedrooms (56 are required);
- 1 dedicated visitor parking space per 4 dwellings (8 are required).

Table E6.1 stipulates the following car parking requirements for 'General Retail and Hire' use:

- 1 car park per 30m^2 of floor area (6 are required).

Based on the above, to meet the Acceptable Solution (A1), the proposed development requires 73 car parks. However, it only has 61 car parks (11 on the ground floor and 25 on the lower ground and basement levels respectively) and must therefore be assessed against the associated Performance Criteria (P1). An assessment follows:

- Based on car parking space requirements for 'General Retail and Hire' and 'Residential' uses of Table E6.1 of the 'Parking and Access Code', the proposed development has a requirement for 72 car parks and the proposed development provides 61, so is short of that required by 11. However, the TIA calculates that due to characteristics of the site such as proximity to local centres, high frequency public transit, bike lanes, and on-street parking in the surrounding area, this supply of parking is adequate to service the proposal, satisfying sub-clause (a);
- The kerbside lanes along Burnett Street are normally used for on-street parking, with the exception of no stopping 'clearway' restrictions that apply during the peak periods on weekdays, satisfying sub-clause (b);
- High frequency bus services pass along Elizabeth Street in close proximity to the development site, less than 400m walking distance from the site, and there are also bus services along Argyle Street, satisfying sub-clause (c);
- In addition to public transport, bicycle lanes are provided along Argyle and Campbell Streets (37m to 250m north east of the site) providing further opportunity for sustainable non car dependent travel, satisfying sub-clause (d);
- As stated above, there is some level of on-street parking along Burnett Street providing alternative car parking provision in addition to that within the proposed development, satisfying sub-clause (e);
- Although the car parking within the proposed development is 11 spaces less than the requirements of Table E6.1, the on-street parking along Burnett Street can be shared by multiple uses, satisfying sub-clause (f);

- The TIA does not identify any car parking deficiency or surplus associated with the existing use of the land; therefore sub-clause (g) is not considered applicable;
- There is no car parking credit as a result of a previous use of the site, therefore sub-clause (h) is not considered applicable;
- As the proposed development provides adequate parking facilities, no in lieu financial contribution is considered necessary, satisfying sub-clauses (i) and (j);
- There is no relevant parking plan for the area adopted by Council, therefore sub-clause (k) is not applicable;
- The site is located within Places of Archaeological Potential (Table E13.4) and Appendix J provides a Statement of Historical Archaeological Potential, which concludes that the site has little or no archaeological potential, and concludes that further development of the site may proceed without the need for any further archaeological input, satisfying sub-clause (l);
- The site is not in proximity to any significant trees listed in the Significant Trees Code; therefore sub-clause (m) is not applicable.

On the basis of the above, the proposed development is considered to satisfy the applicable Performance Criteria (P1).

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

As identified in the TIA (Appendix F) disabled car parking is not required for residential developments under the Building Code, therefore Clause E6.6.2 is not applicable.

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** The number of on-site motorcycle parking spaces must be sufficient to meet the needs of likely users having regard to all of the following, as appropriate: (a) motorcycle parking demand; (b) the availability of on-street and public motorcycle parking in the locality; (c) the availability and likely use of other modes of transport; (d) the availability and suitability of alternative arrangements for motorcycle parking provision.

There are no on-site motorcycle parking spaces provided as part of the proposed development, and as there are 61 car parking spaces proposed, 2 spaces would be required to meet the Acceptable Solution (A1). Therefore, the proposal has been assessed against the associated Performance Criteria (P1). As the site is in close proximity to alternative modes of travel, namely public transport routes, bicycle lanes, and walking distance to the local centre in North Hobart and the City Centre, demand for motorcycle parking is considered to be substantially reduced. On this basis, the proposed development is considered to satisfy the Performance Criteria (P1).

- There is no opportunity to provide motorcycle parking given a sizeable car park is proposed on a relatively tight site, therefore the Traffic Impact Assessment has not deemed there to

be demand for motorbike parking and considers the provision of bicycle parking facilities to be more appropriate in the location and thus sub-clause (a) is considered not applicable;
- On street parking along Burnett Street and within the general locality is considered to adequately accommodate motorcycle parking, satisfying sub-clauses (b) and (d);
- The site is in close proximity to public transport routes and bicycle lanes as well as within walking distance to the local centre in North Hobart and the City Centre, satisfying sub-clause (c).

On the basis of the above, the proposed development is considered to satisfy the Performance Criteria (P1).

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**
A2 The number of on-site bicycle parking spaces provided must be no less than the number specified in Table E6.2.	**P2** The number of on-site bicycle parking spaces provided must have regard to all of the following: (a) the nature of the use and its operations; (b) the location of the use and its accessibility by cyclists; (c) the balance of the potential need of both those working on a site and clients or other visitors coming to the site.

There are no minimum bicycle parking requirements for the proposed development under Table E6.2, 'Number and Class of Bicycle Parking Spaces Required', as the 'Residential' use is not for an aged care home and the floor area allocated for the 'General Retail And Hire' use is less than 500m^2. Accordingly the clause is considered not applicable.

Notwithstanding the above, the proposed development provides bicycle parking, namely 2 spaces on each level of the car parking areas.

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** ***

There is currently one access on the Burnett Street frontage, associated with 42-44 Burnett Street. The proposal includes removal of this access and relocating it approximately 5m further north east along the frontage.

The proposal is considered to comply with the Acceptable Solution (A1).

Acceptable Solution	Performance Criteria
A2 In the Central Business Zone and Particular Purpose Zone 10 (Royal Hobart Hospital) no new vehicular access is provided unless an existing access point is removed.	P2 ***

The site of the proposal is not located within the Central Business Zone or the Particular Purpose Zone 10 (Royal Hobart Hospital) therefore Acceptable Solution (A2) is not applicable.

Acceptable Solution	Performance Criteria
A3 In Particular Purpose Zone 4 - Calvary Healthcare Hospital Campus access to the site is to be provided according to the location of approved access points off Augusta Road and Honara Avenue shown on the endorsed plans associated with permit PLN-14-00428-01. The other access points noted are to be utilised for emergency access only.	P3 No performance criteria.

The proposal is not located in Particular Purpose Zone 4; therefore Acceptable Solution (A3) is not applicable.

E6.7.2 Design of Vehicular Accesses

Objective:	
To ensure safe and efficient access for all users, including drivers, passengers, pedestrians and cyclists by locating, designing and constructing vehicle access points safely relative to the road network.	
Acceptable Solution	**Performance Criteria**
A1 Design of vehicle access points must comply with all of the following: (a) In the case of non-commercial vehicle access; the location, sight distance, width and gradient of an access must be designed and constructed to comply with section 3 - "Access Facilities to Off-street Parking Areas and Queuing Areas" of AS/NZS 2890.1:2004 Parking Facilities Part 1: Off-street car parking; (b) In the case of commercial vehicle access; the location, sight distance, geometry and gradient of an access must be designed and constructed to comply with all access driveway provisions in section 3 "Access Driveways and Circulation Roadways" of AS2890.2 - 2002 Parking facilities Part 2: Off-street commercial vehicle facilities.	**P1** ***

The proposal has been considered against the Acceptable Solution (A1) as follows:

- As outlined in the Traffic Impact Assessment (Appendix G), the vehicular access arrangements and all car parking and traffic design have been informed by AS/NZS 2890.1:2004 "Access Facilities to Off-street Parking Areas and Queuing Areas", specifically:
    - The access has been removed and relocated approximately 5m further north east along the frontage; the various safe intersection sight distances associated with vehicles entering and exiting the development's driveway access have been found to satisfy the requirements set out in AS 2890.1;
    - The width of the proposed access driveway to the development site will be 5.8m wide, sufficient to accommodate two-way traffic movement; and

- The grade of the access to the site is less than 5% and the grade of the ramps will be up to 25% with the addition of transition sections at each end. The 25% grade will be on the inside curve of the ramp with a lesser grade at the outside curve.

- As there is no commercial vehicle access, sub-clause (b) is not considered applicable.

Further explanatory notes are contained in Appendix G - Supplement, which provide more details on how the proposed design is able to comply with applicable standards.

On the basis of the above, the proposal satisfies the Acceptable Solution (A1).

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** 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.

The circulation/road parking aisle serves more than 5 car parking spaces and is more than 30m in length. Accordingly, the internal driveway through the site will be at least 5.5m to allow almost uninterrupted two-way car movement. Within the site, the parking aisles will be at least 5.8 m for the two car and one car garage parking, which is sufficient in meeting AS 2890.1 requirements (a), (b), (c) and (d). The one area where vehicles will not be able to pass is on the ramps to the lower levels for which a 'traffic light' solution is proposed to ensure that only one vehicle is on the ramp at any time.

Additional explanatory notes are provided in both the Traffic Impact Assessment (Appendix G) and in the Appendix G - Supplement, which provide more details on how the proposed design is able to satisfy the sub-clauses of Performance Criteria (P1).

E 6.7.4 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;	**P1** ***

(b) it meets a road carrying less than 6000 vehicles per day.	

For car parking and driveway areas on the basement, lower ground, and ground floors of the proposed development, there are adequate on-site turning and manoeuvring areas for each car parking space so that all vehicles are able to exit the site in a forward direction. These are demonstrated in the concept sweep path diagrams in Appendix H.

Refer to further details in the Traffic Impact Assessment (Appendix G). Vehicle sweep paths are provided in Appendix H for B85 vehicles.

Further explanatory notes are contained in Appendix G - Supplement, which provide more details on how the proposed design is able to comply with applicable standards.

On this basis, the proposed development is considered able to comply with Acceptable Solution (A1).

E 6.7.5 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** 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.

The TIA provides detail of the layout of car parking spaces, access aisles, circulation roadways and ramps as follows:

- For car parking spaces, all spaces for staff, employees and residents will be 5.4m long and 2.4m wide in accordance with minimum requirements of AS2890;
- For access aisles, the width of the parking aisle for residential parking will be at least the minimum of 5.8m and in the commercial parking area around 6.2 to 6.6m (as required by AS 2890.1 for User Class 1A) with at least a 1.0m extension to the ends of the parking aisle for cars to reverse out of parking spaces;
- For ramps, their grade will be up to 25% with the addition of transition sections at each end and the 25% grade will be on the inside curve of the ramp with a lesser grade at the outside curve.

All of the above as well as circulation roadways meet the relevant requirements of AS2890.

Furthermore, off-street parking areas have a height clearance of 2.2m in all trafficable areas as required by AS 2890.1, allowing for any beams.

Refer to further details in the Traffic Impact Assessment (Appendix G).

Further explanatory notes are contained in Appendix G - Supplement, which provide more details on how the proposed design is able to comply with applicable standards.

On this basis, the proposed development is considered able to comply with Acceptable Solution (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, provided that the standard of paving and drainage complies with the adopted standards of the Council.	**P1** ***

The proposed off-street parking and vehicle circulation roadways will be concrete and drained to an approved stormwater system, including a new stormwater discharge to the kerb, as shown in the Concept Services Plan in Appendix I.

Appendix 1 provides detail of the calculated stormwater runoff. It is noted that "to service the basement level drainage, a small private pump station shall be installed to cater for stormwater drainage only" (p6 of the Concept Services Report).

On this basis, the proposed development is considered able to comply with Acceptable Solution (A1).

E6.7.7 Lighting of Parking Areas

Objective:	
To ensure parking and vehicle circulation roadways and pedestrian paths used outside daylight hours are provided with lighting to a standard which: **(a) enables easy and efficient use;** **(b) promotes the safety of users;** **(c) minimises opportunities for crime or anti-social behaviour; and** **(d) prevents unreasonable light overspill impacts.**	
Acceptable Solution	**Performance Criteria**
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** Parking and vehicle circulation roadways and pedestrian paths used outside daylight hours must be provided with lighting to a standard which satisfies all of the following: (a) enables easy and efficient use of the area; (b) minimises potential for conflicts involving pedestrians, cyclists and vehicles; (c) reduces opportunities for crime or anti-social behaviour by supporting passive surveillance and clear sight lines and treating the risk from concealment or entrapment points; (d) prevents unreasonable impact on the amenity of adjoining users through light overspill; (e) is appropriate to the hours of operation of the use.

Lighting to public areas will be implemented as per Australian Standards, it is considered appropriate that permit conditions requiring more details plans prior to works commencing be incorporated into any planning permit issued.

On this basis, the proposed development is considered able to comply with Acceptable Solution (A1).

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.

Although the proposal has more than 5 car parking spaces, landscaping is not proposed for the parking and circulation areas and therefore the Acceptable Solution (A1) is not met. Accordingly, the proposal has been considered against the Performance Criteria (P1) as follows:

- As car parking is located within the building envelope on the ground, lower ground, and basement level, there is no visual impact on the streetscape, therefore sub-clauses (a) and (b) are not relevant;
- Only 5 of the 61 car parks will be for visitors and the remainder for residents of the building, thus reducing the likelihood of crime. Furthermore, CCTV cameras can be installed to reduce this further, satisfying sub-clause (c).

On the basis of the above, the Performance Criteria (P1) are satisfied.

E6.7.9 Design of Motorcycle Parking Areas

Objective:	
To ensure that motorcycle parking areas are located, designed and constructed to enable safe, easy and efficient use.	
Acceptable Solution	**Performance Criteria**
A1 The design of motorcycle parking areas must comply with all of the following: (a) be located, designed and constructed to comply with section 2.4.7 "Provision for Motorcycles" of AS/NZS 2890.1:2004 Parking Facilities Part 1: Off-street car parking; (b) be located within 30 m of the main entrance to the building.	**P1** ***

As no motorcycle parking areas are included in the proposal, Clause E6.7.9 is not applicable.

E6.7.10 Design of Bicycle Parking Facilities

Objective:	
To encourage cycling as a healthy and environmentally friendly mode of transport for commuter, shopping and recreational trips by providing secure, accessible and convenient bicycle parking spaces.	
Acceptable Solution	**Performance Criteria**
A1 The design of bicycle parking facilities must comply with all the following; (a) be provided in accordance with the requirements of Table E6.2; (b) be located within 30 m of the main entrance to the building.	**P1** The design of bicycle parking facilities must provide safe, obvious and easy access for cyclists, having regard to all of the following: (a) minimising the distance from the street to the bicycle parking area; (c) providing clear sightlines from the building or the public road to provide adequate passive surveillance of the parking facility and the route from the parking facility to the building; (d) avoiding creation of concealment points to minimise the risk.

There are no minimum bicycle parking requirements for the proposed development under Table E6.2, 'Number and Class of Bicycle Parking Spaces Required', as the 'Residential' use is not for an aged care home and the floor area allocated for the 'General Retail And Hire' use is less than 500m^2. Accordingly the clause is considered not applicable.

Notwithstanding the above, the proposed development provides bicycle parking on each level of the car parking areas, with the ground floor level spaces located approximately 21m from the vehicle entry in accordance with A1 (b).

However, bicycle parking is provided for the ground floor 'General Retail and Hire' use and is within 30m of both the foyer entrance and the car access.

The proposal complies with Acceptable Solution A1.

E6.7.11 Bicycle End of Trip Facilities - Not Applicable

Objective:	
To ensure that cyclists are provided with adequate end of trip facilities.	
Acceptable Solution	**Performance Criteria**
A1 For all new buildings where the use requires the provision of more than 5 bicycle parking spaces for employees under Table E6.2, 1 shower and change room facility must be provided, plus 1 additional shower for each 10 additional employee bicycle spaces thereafter.	**P1** ***

As the 'Residential' and 'General Retail and Hire' use classes do not require more than 5 bicycle spaces, Clause E6.7.11 is not applicable.

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	**P1** ***

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.	

As the site of the proposal is zoned 'Commercial', the above Acceptable Solution (A1) is not applicable.

E6.7.13 Facilities for Commercial Vehicles

Objective:	
To ensure that facilities for commercial vehicles are provided on site, as appropriate.	
Acceptable Solution	**Performance Criteria**
A1 Commercial vehicle facilities for loading, unloading or manoeuvring must be provided on-site in accordance with Australian Standard for Off-street Parking, Part 2: Commercial. Vehicle Facilities AS 2890.2:2002, unless: (a) the delivery of all inward bound goods is by a single person from a vehicle parked in a dedicated loading zone within 50 m of the site; (b) the use is not primarily dependent on outward delivery of goods from the site.	**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.

Commercial vehicle facilities for loading, unloading or manoeuvring have not been provided on-site, there is not a dedicated loading zone within 50 m of the site, and the use is not primarily dependent on outward delivery of goods from the site. Therefore, the proposal does not meet the Acceptable Solution (A1) and has been assessed against the associated Performance Criteria (P1).

The Traffic Impact Assessment (Appendix G) confirms that, in relation to commercial vehicle arrangements, the commercial tenancy will be attended to by commercial or private contractors from on-street parking. Some of this will occur outside business hours, as is normal for businesses in the Hobart area. It can be staggered in timing as to not compromise on the safety and convenience of vehicular traffic, cyclists, pedestrians and other road users.

Appendix G Supplement - confirms that the waste collection commercial vehicles will not enter the building.

The proposal is considered to satisfy Performance Criteria (P1).

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 No Performance Criteria.

The proposed new cross over to the northern frontage of 40 Burnett Street will be 5.8m wide, which is sufficient to accommodate the two-way traffic movement. The TIA confirms that the dimensions of the access are compliant with relevant Australian Standards thus satisfying requirements of the road authority.

The proposal is considered compliant with Acceptable Solution (A1).

E 7.0 Stormwater Management Code

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

Supporting information for the following clauses is contained in Appendix I.

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.

As all areas of the site are currently impervious, the proposed development will not lead to an increase in impervious surfaces. Appendix 1 provides detail of the calculated stormwater runoff. It is noted that "to service the basement level drainage, a small private pump station shall be installed to cater for stormwater drainage only" (p6 of the Concept Services Report).

Hence, while the majority of the stormwater from the proposal will be disposed of by gravity, compliant with the Acceptable Solution (A1) a small portion will rely on a pumped solution.

Accordingly the proposal is considered to satisfy Performance Criteria P1 (c)

Further information is provided in Appendix I.

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: (b) the size of new impervious area is more than 600 m^2; (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.

As the proposal provides new car parking for more than 6 cars, the above proposal requires the incorporation of water sensitive urban design principles. Acceptable Solution (A2) has not been met and the proposal must therefore be considered against the associated Performance Criteria (P2).

Appendix I provides details of the proposed management system which includes 3.7kl detention tanks and Ocean Protect Storm Filters. MUSIC modelling is confirmed as demonstrating that the reduction percentages achieved satisfy Performance Criteria P2. However, the

On this basis, the proposal is considered to satisfy Performance Criteria P2.

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** No Performance Criteria.

The minor stormwater drainage system has been designed to accommodate a storm with an ARI of 20 years and stormwater runoff can be accommodated within existing or upgraded public stormwater infrastructure. This is in accordance with the Concept Services Report in Appendix I and the proposal therefore meets the Acceptable Solution (A3).

Acceptable Solution	Performance Criteria
A4 A major stormwater drainage system must be designed to accommodate a storm with an ARI of 100 years.	**P4** No Performance Criteria.

There is no major stormwater drainage system required as part of this proposal, therefore sub-clause A4 is not applicable.

E8.0 Electricity Transmission Infrastructure Protection Code

The proposed development is not within:

- an electricity transmission corridor;
- 55m of a communications stations; and
- 65 m of a substation.

The TasNetworks substation at 222 Campbell Street, North Hobart is approximately 140m to the north east of the development site.

Accordingly, an assessment against the code is not triggered by the proposal.

E9.0 Attenuation Code

The Republic Bar and Café is located at 299 Elizabeth Street (Corner of Elizabeth and Burnett Streets) and is approximately within 110 m southwest of the subject site. The Republic Bar is a venue know for providing live entertainment including bands. Late Night Music Venue is an activity listed in Table E9.1 Attenuation Distances and accordingly the code must be considered.

E9.7.2 Development for Sensitive Use in Proximity to Use with Potential to Cause Environmental Harm

Objective:	
To ensure that new sensitive use does not conflict with, interfere with or constrain uses with potential to cause environmental harm.	
Acceptable Solution	**Performance Criteria**
A1 No Acceptable Solution.	**P1** Development for sensitive use, including subdivision of lots within a sensitive zone, must not result in potential to be impacted by environmental harm from use with potential to cause environmental harm, having regard to all of the following: (a) The nature of the use with potential to cause environmental harm; including: i) Operational characteristics; ii) Scale and intensity; iii) Degree of hazard or pollution that may emitted from the activity; (b) The degree of encroachment by the sensitive use into the Attenuation Area or the attenuation distance; (c) Measures in the design, layout and construction of the development for the sensitive use to eliminate, mitigate or manage effects of emissions.

As there is no acceptable solution for the above clause, the Performance Criteria are addressed as follows:

- The nature of the relevant late-night music venue is such that it is unlikely to cause environmental harm to the proposed sensitive use. The operational characteristics of the venue are that it is limited in size and capacity. Therefore, the scale and intensity of the use of the venue is limited compared with other late-night music venues. While the venue has an outdoor area, this is not used for late night music. Instead, late night music is confined to within the building on the site, thereby reducing the degree of noise pollution that may be emitted.
- The site is approximately 110m from the relevant late-night music venue. Therefore, while the proposed sensitive use would be within the prescribed attenuation distance, it would still be well separated from the venue. This separation would include the buildings fronting onto Burnett Street between the site and the venue, such as the substantial warehouse building on the adjoining property at 48 Burnett Street and the two-storey commercial buildings at 56-58 and 64 Burnett Street, respectively.
- The proposed building would have very few windows facing toward the relevant late-night music venue. As shown in the proposed south-west elevation plan, only four relatively small windows are proposed within this elevation, other than clerestory windows proposed on the upper level of building. The building would have concrete panel walls which would assist in mitigating noise impacts from the venue. Much of the south-western side of the proposed building would also abut the substantial warehouse on the adjoining property mentioned above.

Based on the above the proposal is considered to satisfy applicable elements of Performance Criteria (P1).

E13.0 Historic Heritage Code

The site is not listed on the Tasmanian Heritage Register, nor is a Heritage Place on Table E.13.1 of the *Hobart Interim Planning Scheme 2015* listed, although it is within the Places of Archaeological Sensitivity as defined by Figure E.13.1 of the *Hobart Interim Planning Scheme 2015*. Therefore, under Part E13.5 'Application Requirements' of the Code, the Planning

Authority may require an Archaeological Impact Assessment in order to assess the proposal against the performance criteria. A full Archaeological Impact Assessment & Archaeological Method Statement can be found in Appendix J. The proposal has also been assessed against Part E.13.10 of the planning scheme, 'Development Standards for Places of Archaeological Potential', as outlined below.

E13.0 Development Standards for Places of Archaeological Potential

E13.10.1 Building, Works and Demolition

Objective:	
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.	
Acceptable Solution	**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'.

The proposal will involve significant excavation to develop the new apartment building, including the basement and lower ground floors, so does not meet the Acceptable Solution (A1). It has therefore been assessed against the Performance Criteria (P1) as follows:

- The Archaeological Impact Assessment prepared for the site identifies a development history since the 1840s for both 40 Burnett Street and 42-44 Burnett Street, with excavation and subsequent development on both sites having had a major impact on earlier archaeological remains with demolition of previous historic buildings thought to have been reasonably thorough and truncated any subsurface remains of the earlier buildings, satisfying sub-clause (a);
- As stated above, an Archaeological Impact Assessment was prepared for the site and confirmed that the site has little or no archaeological potential, and therefore it is concluded that any further development of the site may proceed without the need for any further archaeological input, satisfying sub-clause (b);
- The Archaeological Impact Assessment confirms that it unlikely that substantial/intact archaeological remains are present on the two sites and therefore sub-clause (c) is not considered relevant;
- As it is unlikely that substantial/intact archaeological remains are present on the two sites, sub-clauses (d) and (e) are not considered relevant.

On the basis of the above, the proposal satisfies the Performance Criteria (P1).

E13.10.2 Subdivision

As the proposed development does not involve subdivision, this provision is considered not applicable.

5. Impact Assessment

5.1 Traffic and Transport Networks

A Traffic Impact Assessment has been undertaken (refer Appendix G and Appendix G Supplement). The report considers the potential increase in traffic from the proposed uses and development, safety implications as well as compliance with elements of the Planning Scheme and relevant Australian Standards. The report concludes that the proposed development will not give rise to any adverse operational or safety issues and it is supported on traffic grounds.

Metro bus stops are located within a 300m radius of the subject site. The site is also within easy walking distance of local shops and a primary school. Future residents and users of the proposed development will be provided with a number of active transport options contributing to better health outcomes.

5.2 Urban Activation

The proposed development site is located in close proximity to the North Hobart transit corridor which has been identified as a strategic location for densification.

Furthermore, the site provides excellent access to public transport and is within walking distance of shops and cafes along North Hobart's main road; the city centre; as well as a local park and primary school. The proposed development repurposes fully serviced underutilised land with a design that positively contributes to the demand for residential dwellings within Hobart.

The Burnett Street Apartments project will activate a quieter part of North Hobart by continuing a lively edge and link to the busy areas of Elizabeth Street. Furthermore, proximity to leafy Soundy Park allows and encourages its residents to use the public open space, interact and be part of the city. The North Hobart strip is currently the bustling heart of this area but is limited to a small part of Elizabeth Street, condensing pedestrian and traffic activity. Burnett Street provides the opportunity to expand this strip, and at the same time provide an attractive and enjoyable connection to the nearby park.

5.3 Solar Access

The design of the proposed apartment building provides appropriate solar access through windows to all apartments and penthouses on each side. Westerly sun has the strongest penetration and the building's north westerly façade fronting Burnett Street has sliding, vertical timber battens that can block out westerly sun. The building's south westerly facade has few windows as the apartment buildings along that wall have alternative natural light from the south east and north west elevations. Both the north east and south east building facades have eave mechanisms in the form of a timber pergola on the north east façade and a balcony overhang on the south east façade. Combined, these measures are considered adequate to provide adequate solar access to all liveable, inhabited areas of the building whilst reducing and blocking out intense sunlight.

5.4 Economic Impacts

Beyond the economic stimulus from the construction activity, the future residents and visitors to the site will provide ongoing positive contributions to the local community. Firstly, by being within comfortable walking distance to the local shops in North Hobart as well as the Hobart CBD. Secondly the proximity of metro bus services is likely to appeal to residents, thereby increasing public transport patronage with consequential reduction for increased road infrastructure.

6. Conclusion & Recommendations

The proposal seeks to develop the Burnett Street Apartment building predominantly for residential use with a small commercial tenancy. The proposal is for demolition of existing buildings; adhesion of two lots to create a single development site area; removal of an existing access to the site and replacement with another access closer to the western corner of the site; and development of a 5-storey mixed use building. The mixed-use building will comprise 2 levels of on-site parking; 1 commercial space on the ground floor; 4 floors of residential development with a total of 31 multiple dwellings; and provision of associated telecommunications, bicycle parking, rubbish and mailbox provisions for occupants of the development.

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

- **23.3 Use Standards**
  - 23.3.2 Noise (P1);
- **23.4 Development Standards for Buildings and Works**
  - 23.4.1 Building Height (P1);
  - 23.4.3 Design (P1);
  - 23.4.5 Landscaping (P1).
- **E2.0 Potentially Contaminated Land Code**
  - E2.5 Use Standards (P1 (b));
  - Development Standards - E2.6.2 Excavation (P1(b));
- **E5.0 Road and Railway Assets Code**
  - E5.5.1 Existing road accesses and junctions (P3);
  - E5.6.4 Sight distance at accesses, junctions and level crossings (P1).
- **E6.0 Parking and Access Code**
  - E6.6.1 Number of Car Parking Spaces (P1);
  - E6.6.3 Number of Motorcycle Parking Spaces (P1);
  - E6.7.3 Vehicle Passing Area along an Access (P1);
  - E6.7.8 Landscaping of Parking Areas (P1);
  - E6.7.13 Facilities for Commercial Vehicles (P1).
- **E7.0 Stormwater Management Code**
  - E7.7.1 Stormwater Drainage and Disposal (P1 (c)) and (P2);
- **E9.0 Attenuation Code**
  - E9.7.2 Development for Sensitive Use in Proximity to Use with Potential to Cause Environmental Harm (P1);
- **E13.0 Historic Heritage Code**
  - E13.10.1 Building, Works and Demolition (P1).

The proposal has been assessed against all relevant performance criteria and found to either comply with Acceptable Solutions or be able to satisfy applicable Performance Criteria.

In conclusion, the application is considered to be acceptable with respect to the Planning Scheme requirements and therefore ought to be supported by the Planning Authority.

APPENDIX A

Title Information

APPENDIX B

Survey Plan

APPENDIX C

Proposal Plans

APPENDIX D

Owner Advice Letters

APPENDIX E

Demolition Report

APPENDIX F

Environmental Site Assessment

APPENDIX G

Traffic Impact Assessment

APPENDIX G Supplement

Traffic Impact Assessment - specific RFI comments

APPENDIX H

Concept Sweep Path Diagrams

APPENDIX I

Concept Services

APPENDIX J

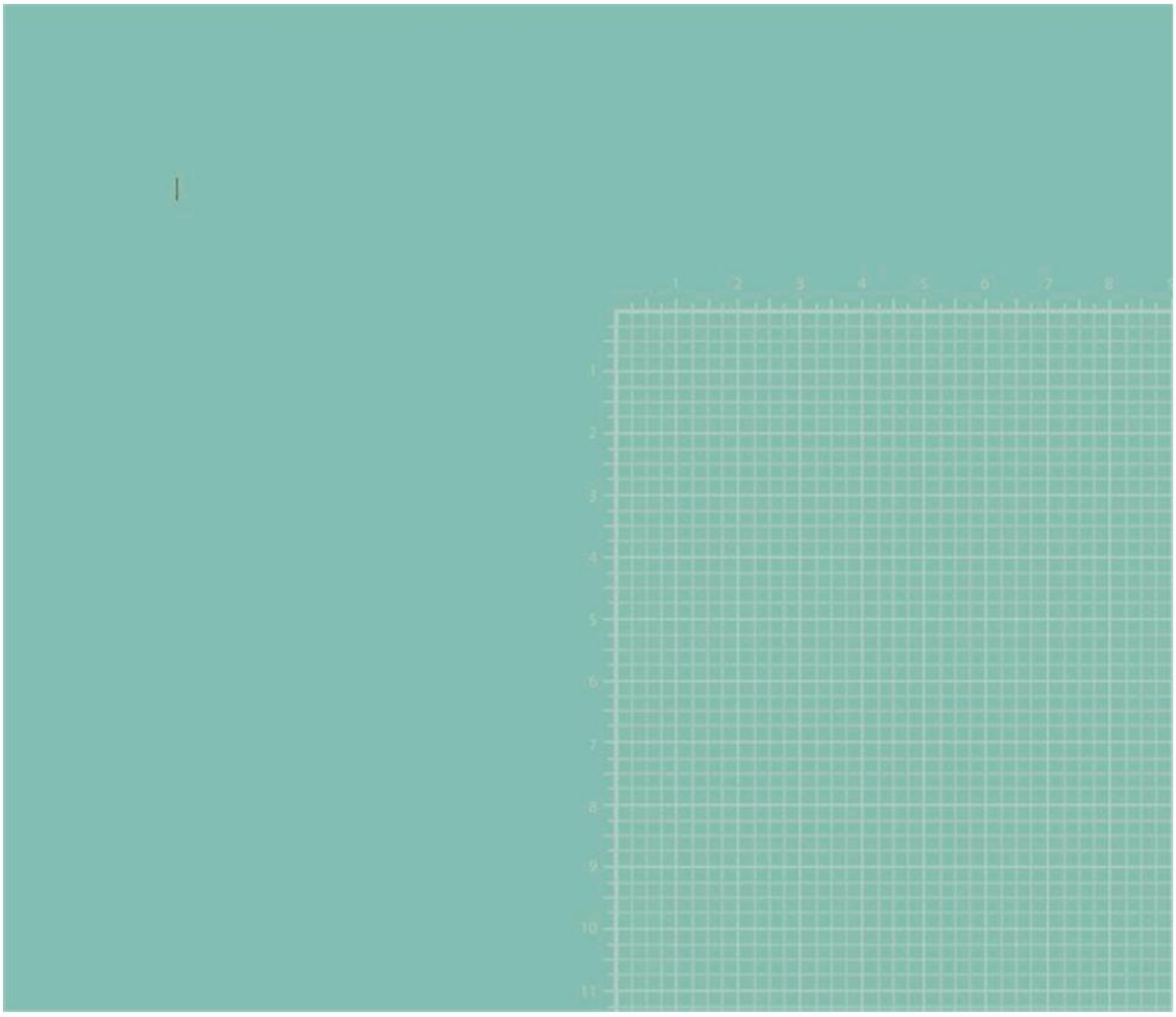
Archaeological Impact Assessment & Statement

APPENDIX K

Building Physics Report

APPENDIX L

Architectural Design Statement



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JMG Ref: 193078PH

27 October 2020

City Planning
Hobart City Council
Attn: Michael McClenahan
Via email - coh@hobartcity.com.au & HCC Portal

Dear Michael,

40 BURNETT STREET & 44/42 BURNETT STREET, NORTH HOBART

DEMOLITIONS, NEW BUILDING FOR 31 MULTIPLE DWELLINGS AND GENERAL RETAIL AND HIRE, SUBDIVISION (LOT CONSOLIDATION), ALTERATIONS TO ACCESS, AND ASSOCIATED WORKS

APPLICATION NO. PLN-20-633

Further to our recent conversations, the proposal information uploaded to Council's Development Portal today, is a comprehensive set of information that supersedes all previously submitted information for the above planning permit application.

The documents are provided to facilitate the statutory public notification requirements and include updates to the original supporting planning report and a number of the excerpt reports so as to incorporate the information previously submitted in response to Council Further Information requests of 23 September and 20 October 2020.

If further information or clarification is required with respect to this request, please contact me on 6231 2555 or at planning@jmg.net.au.

Yours faithfully

JOHNSTONE McGEE & GANDY PTY LTD

Indra Boss
TOWN PLANNER

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JMG Ref: 193078PH

23 October 2020

City Planning
Hobart City Council
Attn: Michael McClenahan
Via email - coh@hobartcity.com.au & HCC Portal

Dear Michael,

40 BURNETT STREET & 44/42 BURNETT STREET, NORTH HOBART

DEMOLITIONS, NEW BUILDING FOR 31 MULTIPLE DWELLINGS AND GENERAL RETAIL AND HIRE, SUBDIVISION (LOT CONSOLIDATION), ALTERATIONS TO ACCESS, AND ASSOCIATED WORKS

APPLICATION NO. PLN-20-633

Please refer to the following with regards to the 'request for additional information letter' received from Hobart City Council, dated 23 September 2020.

The required additional information is addressed in sequence below.

1. ITEM

General Managers Consent

- Long section along back of footpath adjacent to property boundary showing how it is proposed to transition footpath levels along the footpath to match existing - show proposed and existing levels.
- Long section along centre line of the footpath showing how it is proposed to transition footpath levels along the footpath, show proposed and existing.
- Notate that lip of gutter and invert of gutter at proposed driveway will match existing - current drawings appear to show the lip of gutter being raised at the centre line of the driveway access.
- Please notate BPSM drawing DA500 section B-B the minimum clearance of the awing over the footpath - the minimum clearance should be 2.5m - it is difficult to ascertain at A3 due to the scale used a notation would clarify.

It is understood these matters have been discussed with Council officers and the attached drawings in Attachment A (previously emailed to the officers) resolve these issues and there are no further matters impeding General Managers consent.

2. ITEM

Planning (PLN Fi1)

- The requested photomontages are provided in Attachment B.

Surveying

- We confirm the awning will be at least 2.4m above the footpath, a permit condition can be included in any permit issued to that effect.

Parking and Access (PA 3, PA 4, PA5.1, PA 5.2)

- The TIA submitted with the application in Section 6.4 'Internal Access Driveway and Parking Layout' (pp 18 to 19) provides description of the proposed design. It states:

  "The width of the parking aisle for the residential parking will be at least the minimum 5.8m and in the commercial parking area around 6.2-6.6m (as required in Figure 2.2 of AS 2890.1 for User Class 1A more than required for User Class 3 90-degree parking)";

  and

  "With all dimensions meeting the requirements of AS 2890.1, the driveway, parking spaces and circulation areas will be compliant with the standard and meet the Acceptable Solution for Clause E6.7.5".

  This includes B85 and B99 vehicles and signalling for one way traffic on ramps. It is confirmed all traffic can enter and exist in a forward direction. Milan Prodanovic is a suitably qualified person and formal certification is not required under the planning scheme.

- Typical vehicle sweep paths are shown on Drawing C010 Rev A of original Appendix H.

Stormwater Drainage (PA 6)

- Planning Report (p32) provides details of surface treatment, namely concrete. Concept Services plan in Appendix 1 showed proposed connection and updated in Appendix B of the 9 Oct RFI response. More specific internal elements will be part of detailed building design.

Waste Management (PA13)

- We confirm that further clarification has been obtained from our client, which supersedes the details on page 20 of the TIA (original Appendix G).
- It is proposed that both the collection of domestic and commercial waste will be managed by a private contractor and collections will occur from the street, not from within the building.

Protection of Road Infrastructure (ENGr Fi 2)

- Section Drawing DA500 Rev 4 (RFI 9/10/20) shows that retaining walls are within the property boundary.

If further information or clarification is required with respect to this request, please contact me on 6231 2555 or at planning@jmg.net.au.

Yours faithfully

JOHNSTONE McGEE & GANDY PTY LTD

Indra Boss
TOWN PLANNER

Encl:

Attachment A: Updated Architectural Drawings
Attachment B: Updated Photomontages

cc. Hobart City Council Technical Officer - Road coh@hobartcity.com.au
Cindy Elder -Technical Officer Roads - elderc@hobartcity.com.au
Michael McClenahan - Development Appraisal Planner - mcclenahan@hobartcity.com.au

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JMG Ref: 193078PH

09 October 2020

City Planning
Hobart City Council
Attn: Michael McClenahan
Via email - coh@hobartcity.com.au & HCC Portal

Dear Michael,

40 BURNETT STREET & 44/42 BURNETT STREET, NORTH HOBART

DEMOLITIONS, NEW BUILDING FOR 31 MULTIPLE DWELLINGS AND GENERAL RETAIL AND HIRE, SUBDIVISION (LOT CONSOLIDATION), ALTERATIONS TO ACCESS, AND ASSOCIATED WORKS

APPLICATION NO. PLN-20-633

Please refer to the following with regards to the 'request for additional information letter' received from Hobart City Council, dated 23 September 2020.

The required additional information is addressed in sequence below.

1. ITEM

"A written description of what is proposed within the Highway Reservation and the rational for its location within the Highway Reservation"

The works proposed for within the Highway Reservation includes:

- the provision of an awning over the pedestrian entrance to the building, as shown in updated proposal plan Level 01 Sheet DA203 Rev 5. The awning is proposed to provide additional visual signposting of the pedestrian access and provide a degree of shelter from the elements for residents and visitors. As the building façade aligns with the property boundaries the awning inevitably projects into the airspace above the footpath within the Highway Reservation. The proposed awning is 2.4m above the footpath at the building entry, see also updated proposal plan Sections Sheet DA500 Rev 4 (Attachment A).
- Proposed changes to cross overs and service connections are provided in Attachment A, see next section for details. These works are required to provide the required access and infrastructure to service the proposed building.

"An A3 scaled plan with appropriate dimensions clearly showing what tis proposed within the Highway Reservation, the property and City infrastructure including the kerb line, street furniture, street trees, utilities and the like.

(including information requested via e-mail from Cindy Elder 30 September 2020)

The Concept Services Report - Planning Scheme Compliance & Existing Infrastructure Assessment by Gandy and Roberts dated 7 October 2020 is provided in Attachment B.

The details in Attachment B provide the requested details.

No other elements for the proposed development impinge on the Highway Reservation as shown in the revised proposal Plans, Level 01 Sheet DA203 Rev 5, Elevation Sheet DA400 Rev 4, and DA500 Rev 4 in Attachment A.

2. **ITEM Heritage HER Fi 1**

An Archaeological Potential Analysis Report produced by a suitably qualified practitioner was previously lodged on 22/09/20 (refer Appendix J of the supporting Planning Report). Council previously confirmed (via e-mail of 24 September 2020 from Mr. Michael McClenahan) that this matter was resolved.

3. **ITEM Roads - City Amenity PA 2.2 Scales and dimensioned drawing(s) demonstrating vehicular and pedestrian sight distances.**

Proposal plan Ground Sheet SA202 Rev 5 in Attachment B shows the sight lines from the vehicle entry/exit to the building. The updated Traffic Impact Assessment (Attachment C) provides additional information with respect to sight distances on pages 13 to 14.

4. **ITEM Planning - PLN Fi1 - To enable the Council to assess the application against the development standards of the Commercial Zone of the Hobart Interim Planning Scheme 2015, please provide the following:**

1. Photomontages of the proposed building in colour, at eye level and from a standard angle of view (Images should be equivalent to a camera lens of 45-50mm focal length based on a 35 mm camera) from multiple locations within the immediate, mid-range and long range with the locations shown on an attached annotated map.

The requested photomontages are still being prepared and will be submitted to Council as soon as they are available. In the meantime we trust that the response to Items 1 to 3 inclusive will enable the request for GM consent to be progressed without further delay. Once confirmation of GM consent has been received, a full set of revised application information will be provided to Council.

If further information or clarification is required with respect to this request, please contact me on 6231 2555 or at planning@jmg.net.au.

Yours faithfully

JOHNSTONE McGEE & GANDY PTY LTD

Indra Boss
TOWN PLANNER

Encl:

Attachment A: Updated Architectural Drawings
Attachment B: Updated Concept Services Report
Attachment C: Updated Traffic Impact Assessment

cc. Hobart City Council Technical Officer - Road coh@hobartcity.com.au
Cindy Elder -Technical Officer Roads - elderc@hobartcity.com.au

ATTACHMENT A

Updated Architectural Drawings

ATTACHMENT B

Updated Concept Services Report

ATTACHMENT C

Updated Traffic Impact Assessment

APPENDIX A

Title Information

RESULT OF SEARCH

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

SEARCH OF TORRENS TITLE

VOLUME	FOLIO
211936	1
EDITION	DATE OF ISSUE
7	17-Jan-2019

SEARCH DATE : 13-Sep-2019
SEARCH TIME : 12.21 PM

DESCRIPTION OF LAND

City of HOBART
Lot 1 on Plan 211936
Derivation : Part of 2A-2R-28Ps. (Section L.2.) Gtd. to W. Johnson.
Prior CT 2513/44

SCHEDULE 1

M548707 TRANSFER to BEHRAKIS GROUP PROPERTY HOLDINGS PTY LTD
Registered 02-Dec-2015 at noon

SCHEDULE 2

Reservations and conditions in the Crown Grant if any

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

FOLIO PLAN

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

VOL. **FOL.**

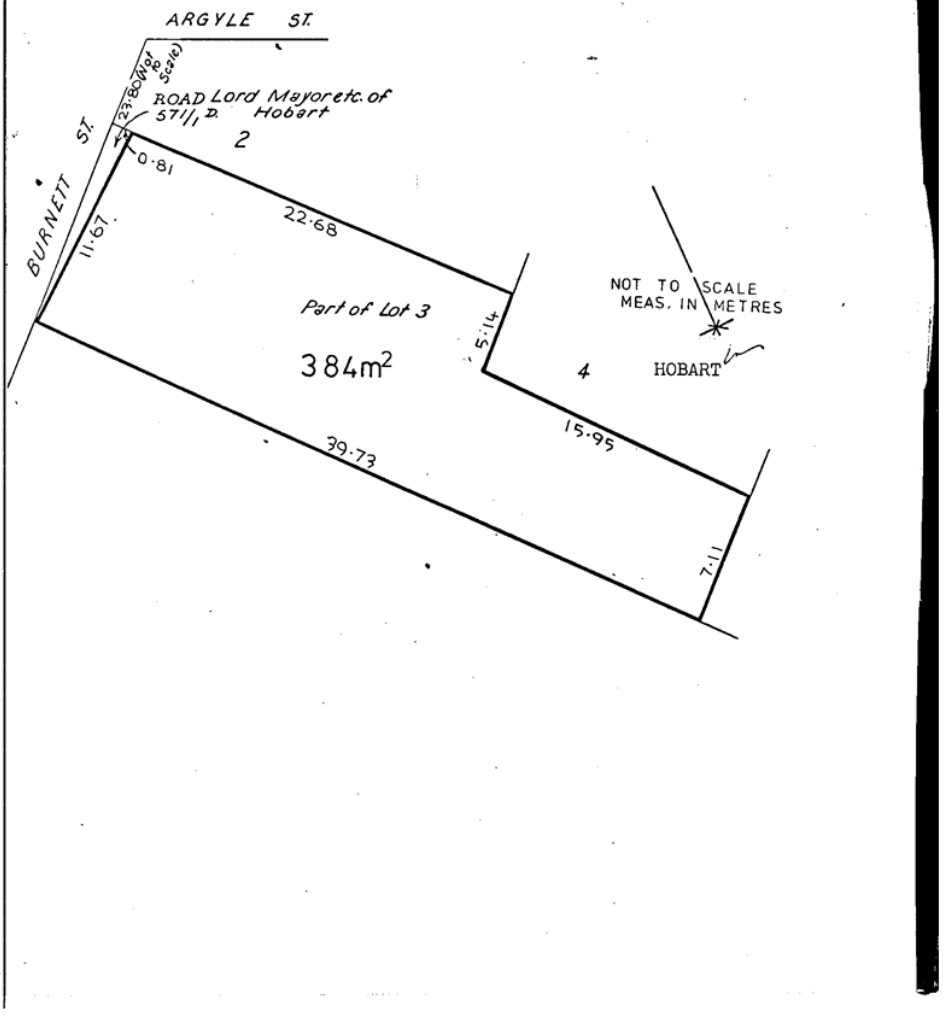
ANNEXURE TO CERTIFICATE OF TITLE 2513 44

Recorder of Titles

REGISTERED NUMBER

211936

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



RESULT OF SEARCH

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

SEARCH OF TORRENS TITLE

VOLUME	FOLIO
228032	1
EDITION	DATE OF ISSUE
7	12-May-2014

SEARCH DATE : 13-Sep-2019
SEARCH TIME : 12.22 PM

DESCRIPTION OF LAND

City of HOBART
Lot 1 on Plan 228032
Derivation : Part of 2A-2R-28Ps. Gtd. to W. Johnson
Prior CT 3029/61

SCHEDULE 1

B105570 & C32164 PETER BEHRAKIS and VICTORIA ANN BEHRAKIS (jointly as between themselves) of one undivided 1/2 share and DENNIS BEHRAKIS and MARIA BEHRAKIS (jointly as between themselves) of one undivided 1/2 share as tenants in common Registered 13-Aug-1997 at noon

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
D118520 MORTGAGE to Commonwealth Bank of Australia Registered 12-May-2014 at 12.02 PM

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

FOLIO PLAN

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

ORIGINAL – NOT TO BE REMOVED FROM TITLES OFFICE

R.P. 1469
TASMANIA
REAL PROPERTY ACT, 1862, as amended

CERTIFICATE OF TITLE

Register Book
Vol. 3029 Fol. 61

Cert. of Title Vol. 834 Fol. 2

I certify that the person described in the First Schedule is the registered proprietor of an estate in fee simple in the land within described together with such interests and subject to such encumbrances and interests as are shown in the Second Schedule. In witness whereof I have hereunto signed my name and affixed my seal.

Recorder of Titles.

DESCRIPTION OF LAND

CITY OF HOBART
TWENTY NINE PERCHES on the Plan hereon

FIRST SCHEDULE (continued overleaf)

STOKES & HAMMOND PROPRIETARY LIMITED

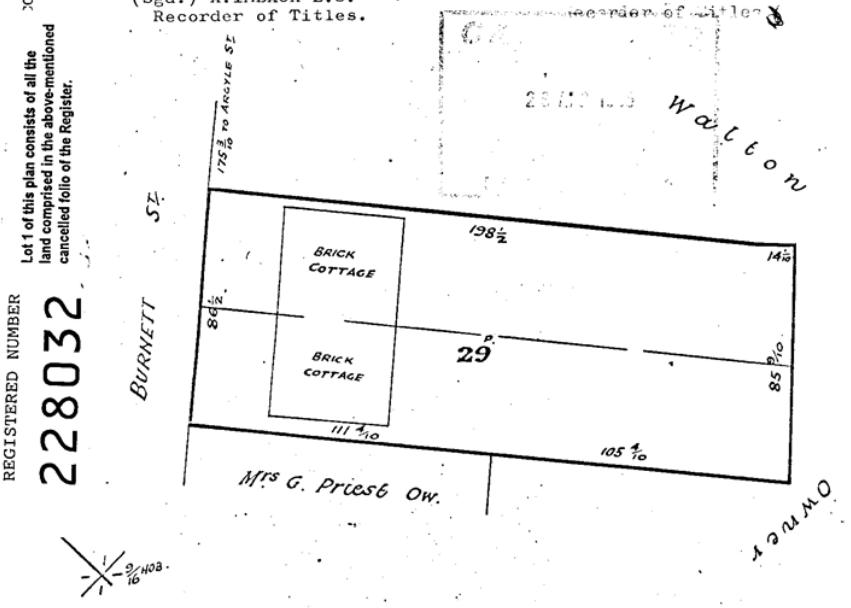
SECOND SCHEDULE (continued overleaf)

MORTGAGE NO. A132639 to Commonwealth Trading Bank of Australia
Registered 20th September, 1960 atNoon
(Sgd.) A.IMLACH L.S.
Recorder of Titles.

ORDER OF TITLES ARE NO LONGER SUBSISTING.

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

REGISTERED NUMBER 228032



42-44 Burnett Street
NORTH HOBART
Part of 2A.2R.28Ps. Gtd.to W.Johnson.Meas. are in links. 9/16Hob.

FIRST Edition. Registered 26 APR 1971

Derived from C.T.Vol. 834 Fol. 2 - Transfer A62349 N.R.Pierce and ors.

APPENDIX B

Survey Plan


NOTES:
This plan and associated digital model is prepared for Behrakis Group Property Holdings PTY LTD from a combination of field survey and existing records for the purpose of designing new constructions on the land and should not be used for any other purpose.
The title boundaries as shown on this plan were not marked at the time of the survey and have been determined by plan dimensions only and not by field survey. No measurements or offsets are to be derived between the features on this plan and the boundary layer. The relationship between the features in this model and the boundary layers cannot be used for any set out purposes or to confirm the position of the title boundaries on site.
Due to the nature of the title boundary information, if any structures are designed on or near a boundary we would recommend a re-mark survey be completed and lodged with the Land Titles Office to support the boundary definition.
Services shown have been located where visible by field survey. Services denoted as being "Per DBYD only" are approximate and for illustrative purposes only. Prior to any demolition, excavation or construction on the site, the relevant authority should be contacted for possible location of further underground services and detailed locations of all services.
This note forms an integral part of the Plan/Data. Any reproduction of this plan/model without this note attached will render the information shown invalid.
PHOTO 1 - 40 to 44 BURNETT STREET
BURNETT STREET
No. 38 Burnett Street
C.T.211936/1
394m²
Door Sill RL = 42.87
Door Sill RL = 42.88
Door Level = 42.84
Shed
Door Level = 42.54
No. 274 Argyle Street
C.T.228032/1
734m²
No. 272 Argyle Street
No. 48 Burnett Street
No. 268 Argyle Street
Driveway
Unk Connections
Block Wall
LEGEND
Water meter
Water Stop Valve
Electrical Turret
Power Pole
Grated Pit
Sewer House Conn.
Unk Connection
Stormwater House Conn
Telstra Pit
Power Conn.
Telstra Conn.
Floor Level
Fire Plug
Side Entry Pit
Property Boundary
Fence
Drain
Sewer Main - DBYD Only
Electric Line Overhead
0 2.0 4.0 6.0 8.0 10.0 metres
SCALE - 1 : 100
DIAL BEFORE YOU DIG
www.1100.com.au
The Essential First Step.
REV AMENDMENTS DRAWN DATE APPR.
ROGERSON & BIRCH SURVEYORS
UNIT 1, 2 KENNEDY DRIVE
CAMBRIDGE 7170
PHONE: (03)6248 5898
EMAIL: admin@rbsurveyors.com
WEB: www.rbsurveyors.com
Contour & Detail Plan
FOR: BEHRAKIS GROUP PROPERTY HOLDING PTY LTD
LOCATION: 40 - 44 BURNETT STREET NORTH HOBART
Date: 24-07-2019
Contour interval: 0.25m
Reference: BGPH01 11881-01
Drawn: AH
Scale: 1:100 (A1)
Horizontal Datum: MGA
Approved: AB
C.T. Reference: 211936/1 228032/1
Vertical Datum: AHD

APPENDIX C

Proposal Plans

SITE DEVELOPMENT INFORMATION

Property Title reference : CT211936/1 AND CT228032/1

Zoning: 23.0 COMMERCIAL

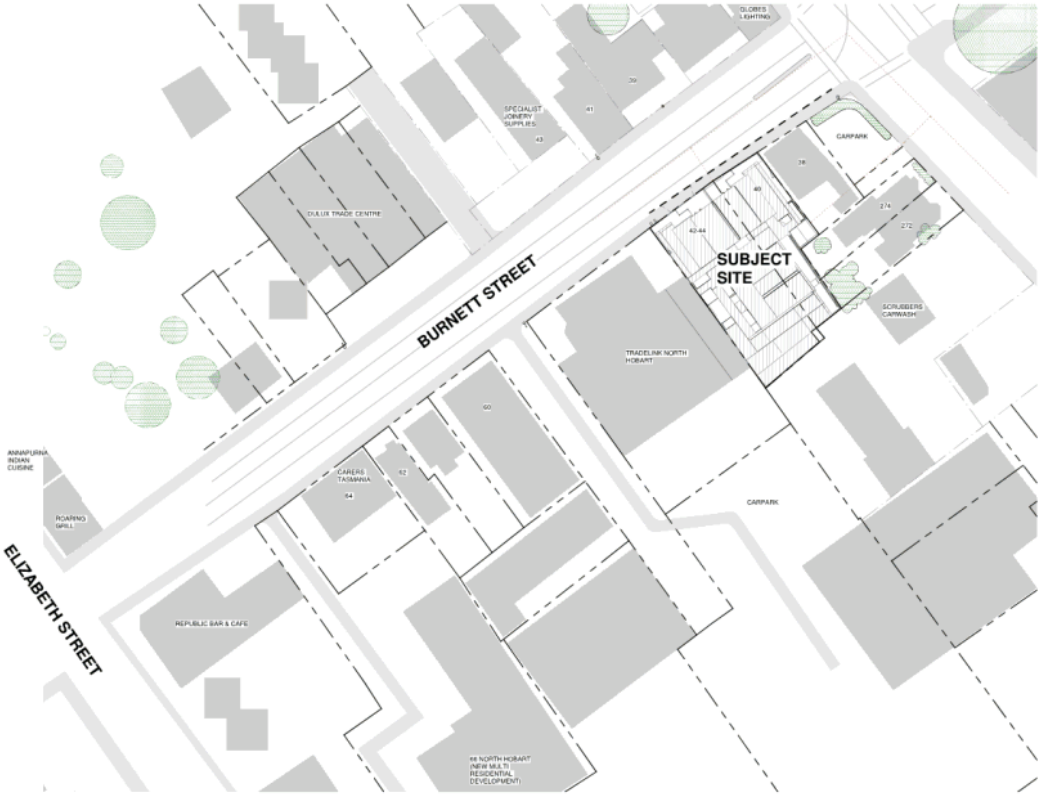
Description: 5 LEVELS ABOVE GROUND MULTI RESIDENTIAL DEVELOPMENT

Site Area: 394m² + 734m² = 1128m²

Car parking:
BASEMENT - 25
LOWER GROUND - 25
GROUND - 5 (VISTORS) + 6
TOTAL - 61

DRAWING LIST - DA

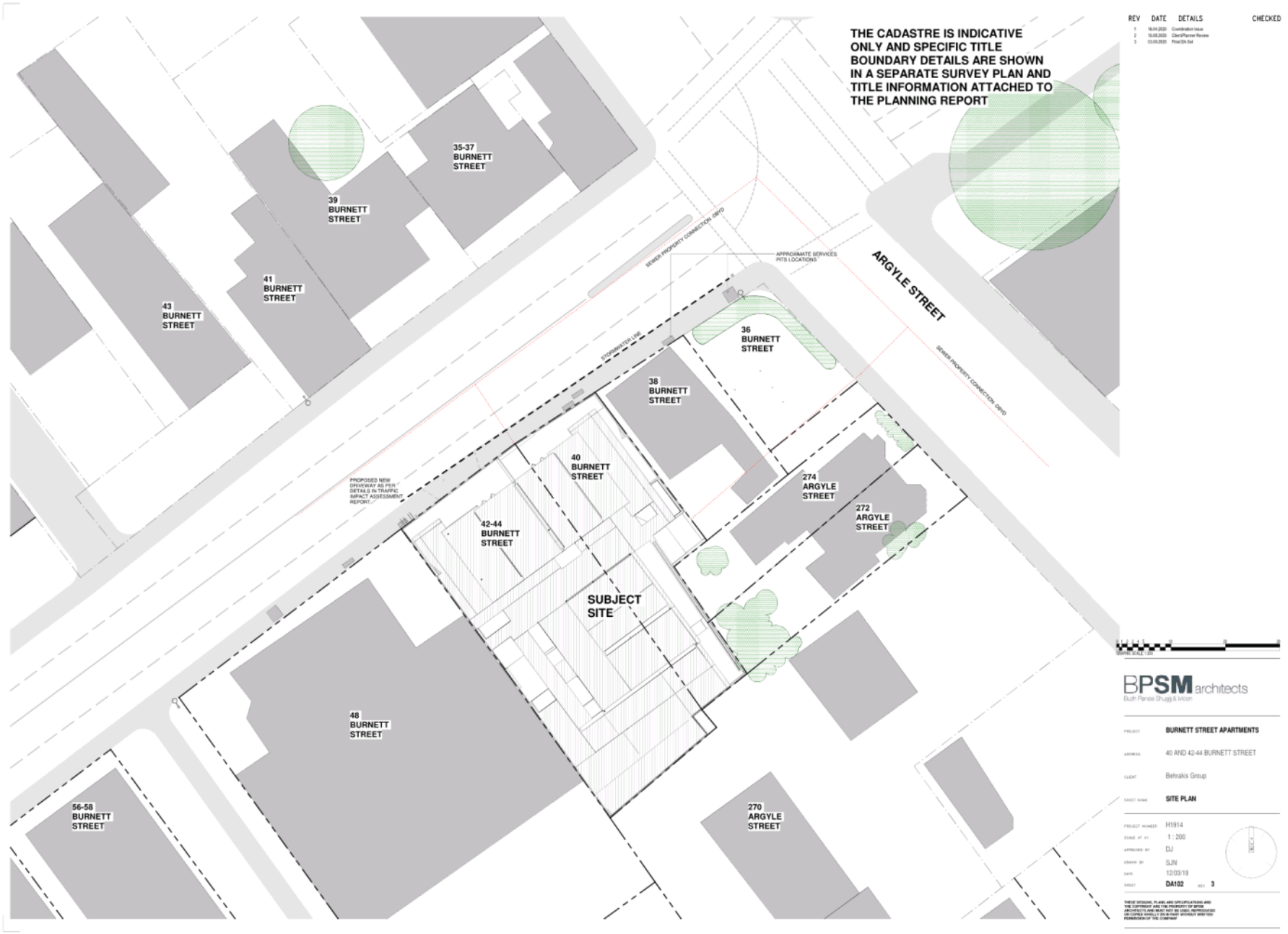
Sheet Number	Sheet Name
DA100	COVER PAGE
DA102	SITE PLAN
DA103	DEMOLITION PLAN
DA200	BASEMENT
DA201	LOWER GROUND
DA202	GROUND
DA203	LEVEL 01
DA204	LEVEL 02
DA205	LEVEL 03
DA206	LEVEL 04
DA207	ROOF
DA400	ELEVATION
DA401	ELEVATION
DA500	SECTIONS
DA800	3D VIEWS
DA801	3D VIEWS
DA810	SHADOW DIAGRAM 9AM (21 JUNE)



REV | DATE | DETAILS | CHECKED

BPSM architects
Bluth Parkes Shugg & Moon

PROJECT: BURNETT STREET APARTMENTS
ADDRESS: 40 AND 42-44 BURNETT STREET
CLIENT: Behrakis Group
SHEET NAME: COVER PAGE
PROJECT NUMBER: H1914
SCALE AT A1: 1 : 500
APPROVED BY: DJ
DRAWN BY: SJN
DATE: 03/05/19
SHEET: DA100 REV: 3


THE CADASTRE IS INDICATIVE ONLY AND SPECIFIC TITLE BOUNDARY DETAILS ARE SHOWN IN A SEPARATE SURVEY PLAN AND TITLE INFORMATION ATTACHED TO THE PLANNING REPORT
REV DATE DETAILS CHECKED
35-37 BURNETT STREET
39 BURNETT STREET
41 BURNETT STREET
43 BURNETT STREET
ARGYLE STREET
36 BURNETT STREET
38 BURNETT STREET
40 BURNETT STREET
42-44 BURNETT STREET
274 ARGYLE STREET
272 ARGYLE STREET
SUBJECT SITE
48 BURNETT STREET
56-58 BURNETT STREET
270 ARGYLE STREET
SEWER PROPERTY CONNECTION, DBYD
APPROXIMATE SERVICES PITS LOCATIONS
STORMWATER LINE
PROPOSED NEW DRIVEWAY AS PER DETAILS IN TRAFFIC IMPACT ASSESSMENT REPORT
BPSM architects
Bush Panas Shugg & Vroon
PROJECT BURNETT STREET APARTMENTS
ADDRESS 40 AND 42-44 BURNETT STREET
CLIENT Behrakis Group
SHEET NAME SITE PLAN
PROJECT NUMBER H1914
SCALE AT A1 1 : 200
APPROVED BY DJ
DRAWN BY SJN
DATE 12/03/19
SHEET DA102 REV 3

REV	DATE	DETAILS	CHECKED
1	16.04.2020	Coordination Issue	
2	10.08.2020	Client/Planner Review	
3	03.09.2020	Final DA Set	

BPSM architects
Bluett Parkes Shugg & Moon

PROJECT	BURNETT STREET APARTMENTS
ADDRESS	40 AND 42-44 BURNETT STREET
CLIENT	Behrakis Group
SHEET NAME	DEMOLITION PLAN
PROJECT NUMBER	H1914
SCALE AT A1	1 : 300
APPROVED BY	DJ
DRAWN BY	SJN
DATE	12/03/19
SHEET	DA103
REV	3

REV	DATE	DETAILS	CHECKED
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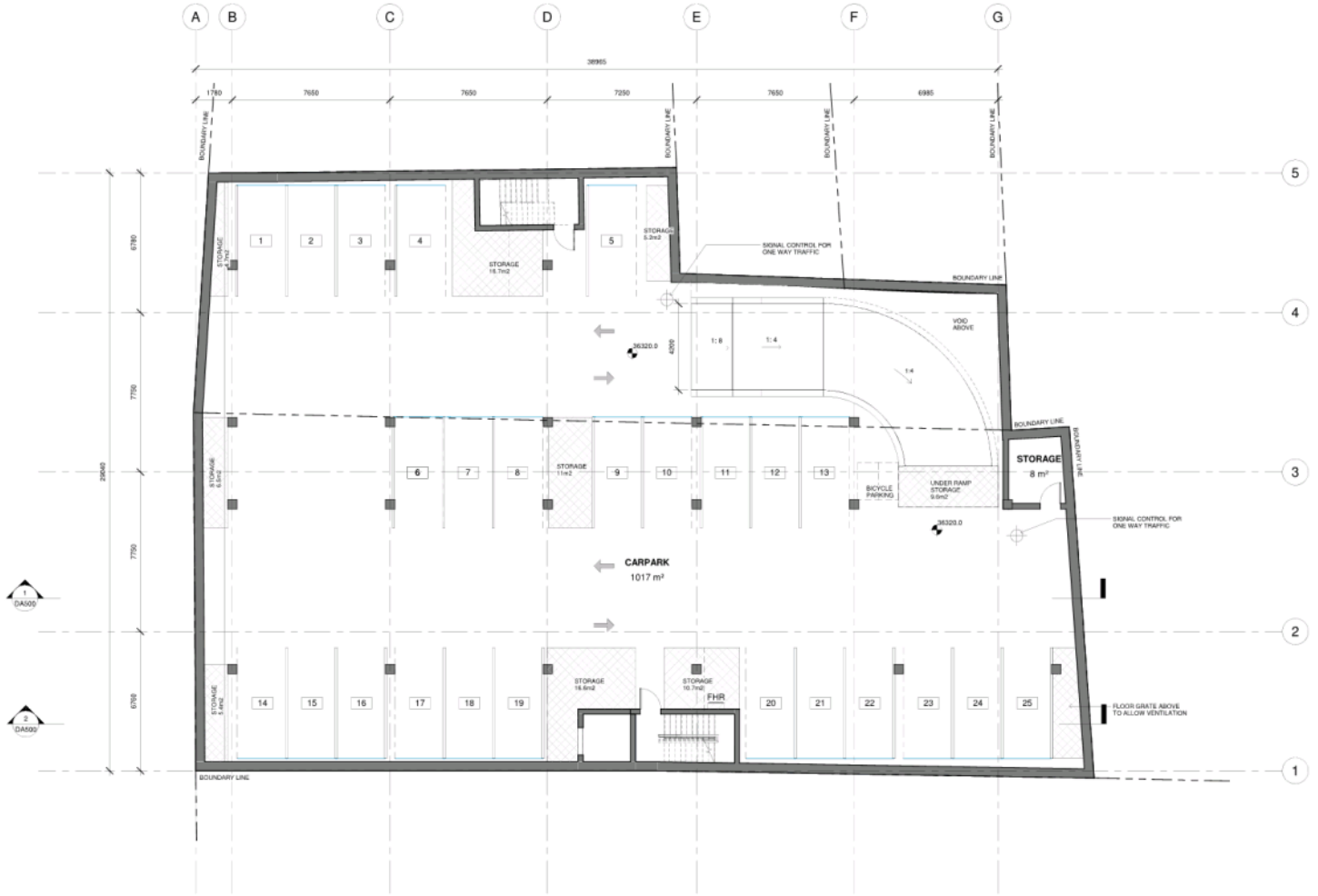
2	16.04.2020	Coordination Issue	
3	10.08.2020	Client/Planner Review	
4	03.09.2020	Final DA Set	



BPSM architects
Bluth Parkes Shugg & Moon

PROJECT	BURNETT STREET APARTMENTS
ADDRESS	40 AND 42-44 BURNETT STREET
CLIENT	Behrakis Group
SHEET NAME	BASEMENT
PROJECT NUMBER	H1914
SCALE AT A1	1 : 100
APPROVED BY	DJ
DRAWN BY	SJN
DATE	12/03/19
SHEET	DA200 REV 4

REV	DATE	DETAILS	CHECKED
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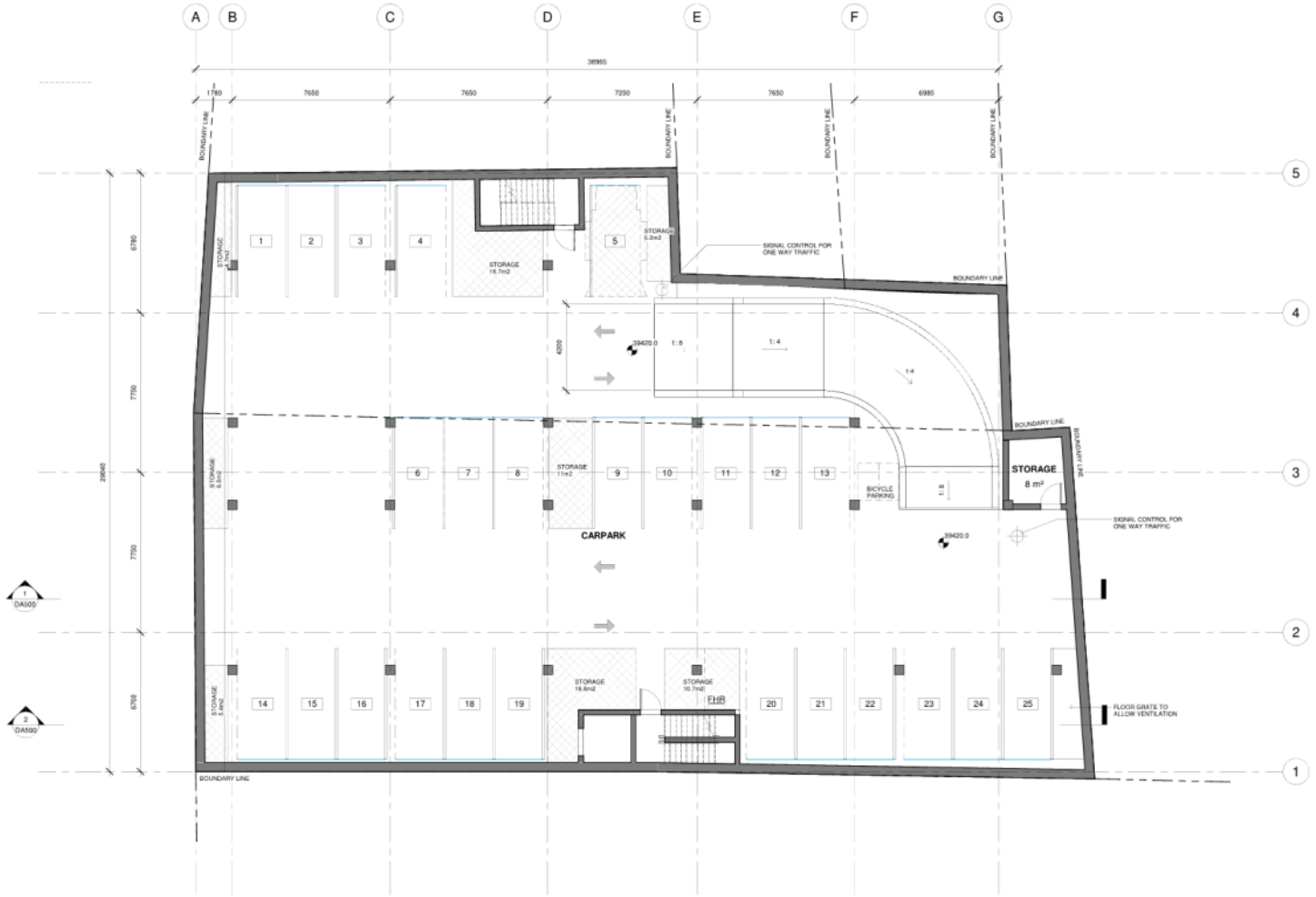
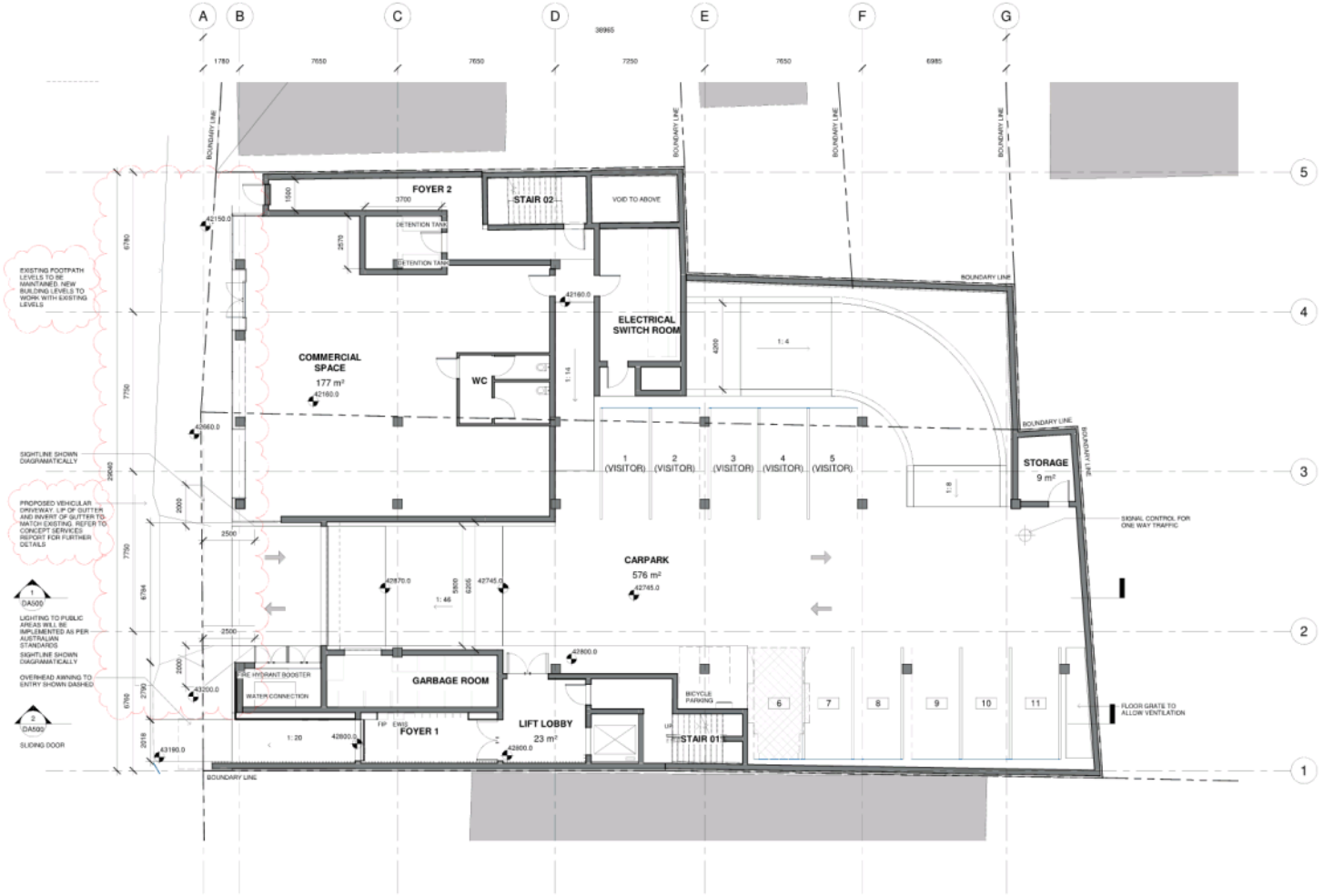
2	16.04.2020	Coordination Issue	
3	10.09.2020	Client/Planner Review	
4	03.09.2020	Final DA Set	



BPSM architects
Bluth Parkes Shugg & Moon

PROJECT	BURNETT STREET APARTMENTS
ADDRESS	40 AND 42-44 BURNETT STREET
CLIENT	Behrakis Group
SHEET NAME	LOWER GROUND
PROJECT NUMBER	H1914
SCALE AT A1	1 : 100
APPROVED BY	DJ
DRAWN BY	SJN
DATE	12/05/19
SHEET	DA201
REV	4



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2	16.04.2020	Coordination Issue	
3	10.08.2020	Client/Planner Review	
4	03.09.2020	Final DA Set	
5	07.09.2020	Council RFI	
6	20.10.2020	Council RFI	

BPSM architects
Bluett Parkes Shugg & Moon

PROJECT: BURNETT STREET APARTMENTS
ADDRESS: 40 AND 42-44 BURNETT STREET
CLIENT: Behrakis Group
SHEET NAME: GROUND
PROJECT NUMBER: H1914
SCALE AT A1: 1 : 100
APPROVED BY: DJ
DRAWN BY: SJN
DATE: 12/05/19
SHEET: DA202 REV: 6

REV	DATE	DETAILS	CHECKED
1	06.01.2020	Lightwell Review	
2	16.04.2020	Coordination Issue	
3	10.08.2020	Client/Planner Review	
4	03.09.2020	Final DA Set	

BPSM architects
Bluett Parkes Shugg & Moon

PROJECT	BURNETT STREET APARTMENTS
ADDRESS	40 AND 42-44 BURNETT STREET
CLIENT	Behrakis Group
SHEET NAME	LEVEL 01
PROJECT NUMBER	H1914
SCALE AT A1	1 : 100
APPROVED BY	DJ
DRAWN BY	SJN
DATE	12/05/19
SHEET	DA203 REV 4

REV	DATE	DETAILS	CHECKED
1	06.01.2020	Lightwell Review	
2	16.04.2020	Coordination Issue	
3	10.09.2020	Client/Planner Review	
4	03.09.2020	Final DA Set	

GRAPHIC SCALE 1:100

BPSM architects
Bluett Parkes Shugg & Moon

PROJECT	BURNETT STREET APARTMENTS
ADDRESS	40 AND 42-44 BURNETT STREET
CLIENT	Behrakis Group
SHEET NAME	LEVEL 01
PROJECT NUMBER	H1914
SCALE AT A1	1 : 100
APPROVED BY	DJ
DRAWN BY	SJN
DATE	12/05/19
SHEET	DA203 REV 4

REV	DATE	DETAILS	CHECKED
1	06.01.2020	Lightwell Review	
2	16.04.2020	Coordination Issue	
3	10.08.2020	Client/Planner Review	
4	03.09.2020	Final DA Set	

BPSM architects
Bluth Parkes Shugg & Moon

PROJECT	BURNETT STREET APARTMENTS
ADDRESS	40 AND 42-44 BURNETT STREET
CLIENT	Behrakis Group
SHEET NAME	LEVEL 02
PROJECT NUMBER	H1914
SCALE AT A1	1 : 100
APPROVED BY	DJ
DRAWN BY	SJN
DATE	12/05/19
SHEET	DA204 REV 4

REV	DATE	DETAILS	CHECKED
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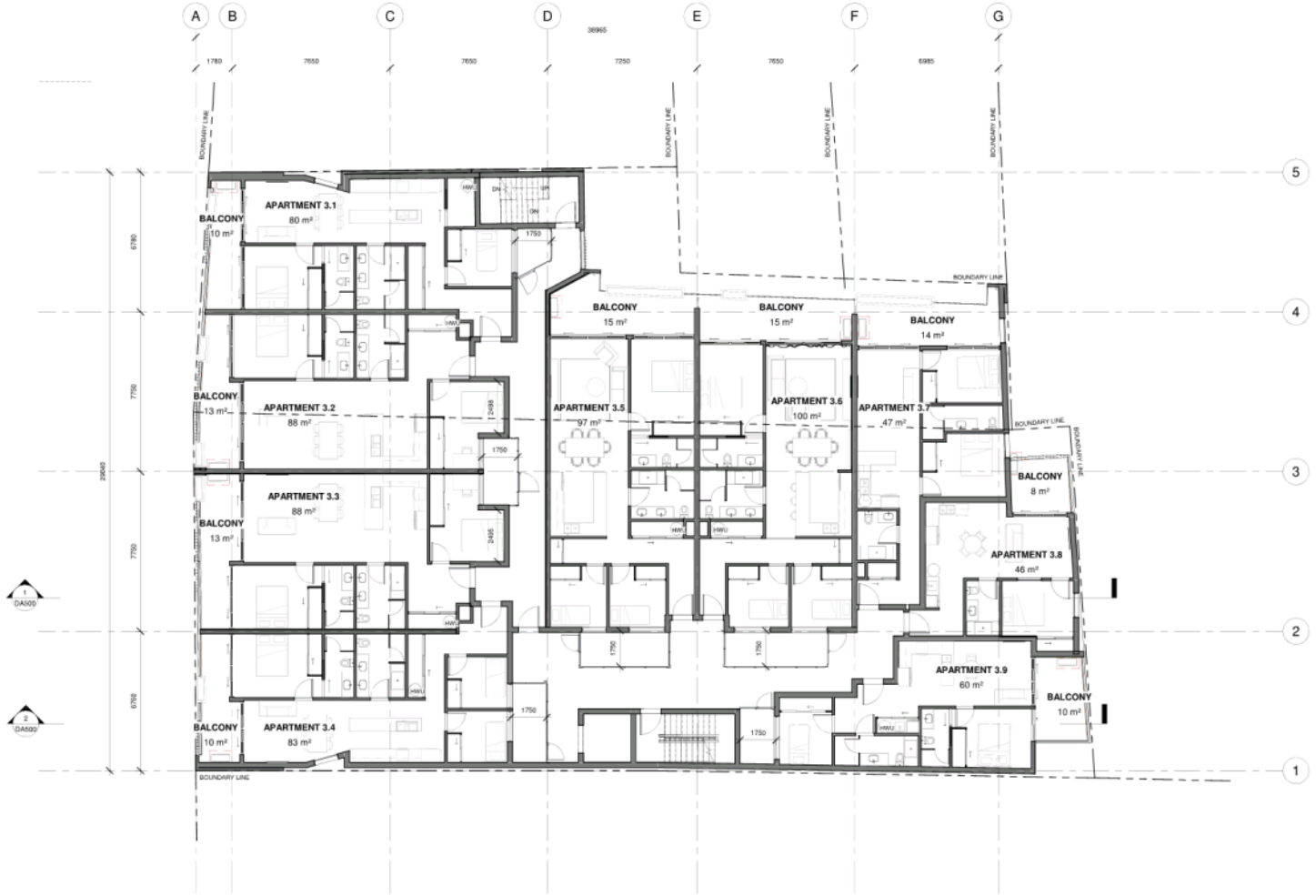
4	03.09.2020	Final DA Set	



BPSM architects
Bluett Parkes Shugg & Moon

PROJECT	BURNETT STREET APARTMENTS
ADDRESS	40 AND 42-44 BURNETT STREET
CLIENT	Behrakis Group
SHEET NAME	LEVEL 03
PROJECT NUMBER	H1914
SCALE AT A1	1 : 100
APPROVED BY	DJ
DRAWN BY	SJN
DATE	12/05/19
SHEET	DA205 REV 4

REV	DATE	DETAILS	CHECKED
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3	10.09.2020	Client/Planner Review	
4	03.09.2020	Final DA Set	

BPSM architects
Bluth Parkes Shugg & Moon

PROJECT	BURNETT STREET APARTMENTS
ADDRESS	40 AND 42-44 BURNETT STREET
CLIENT	Behrakis Group
SHEET NAME	LEVEL 04
PROJECT NUMBER	H1914
SCALE AT A1	1 : 100
APPROVED BY	DJ
DRAWN BY	SJN
DATE	12/05/19
SHEET	DA206 REV 4

REV	DATE	DETAILS	CHECKED
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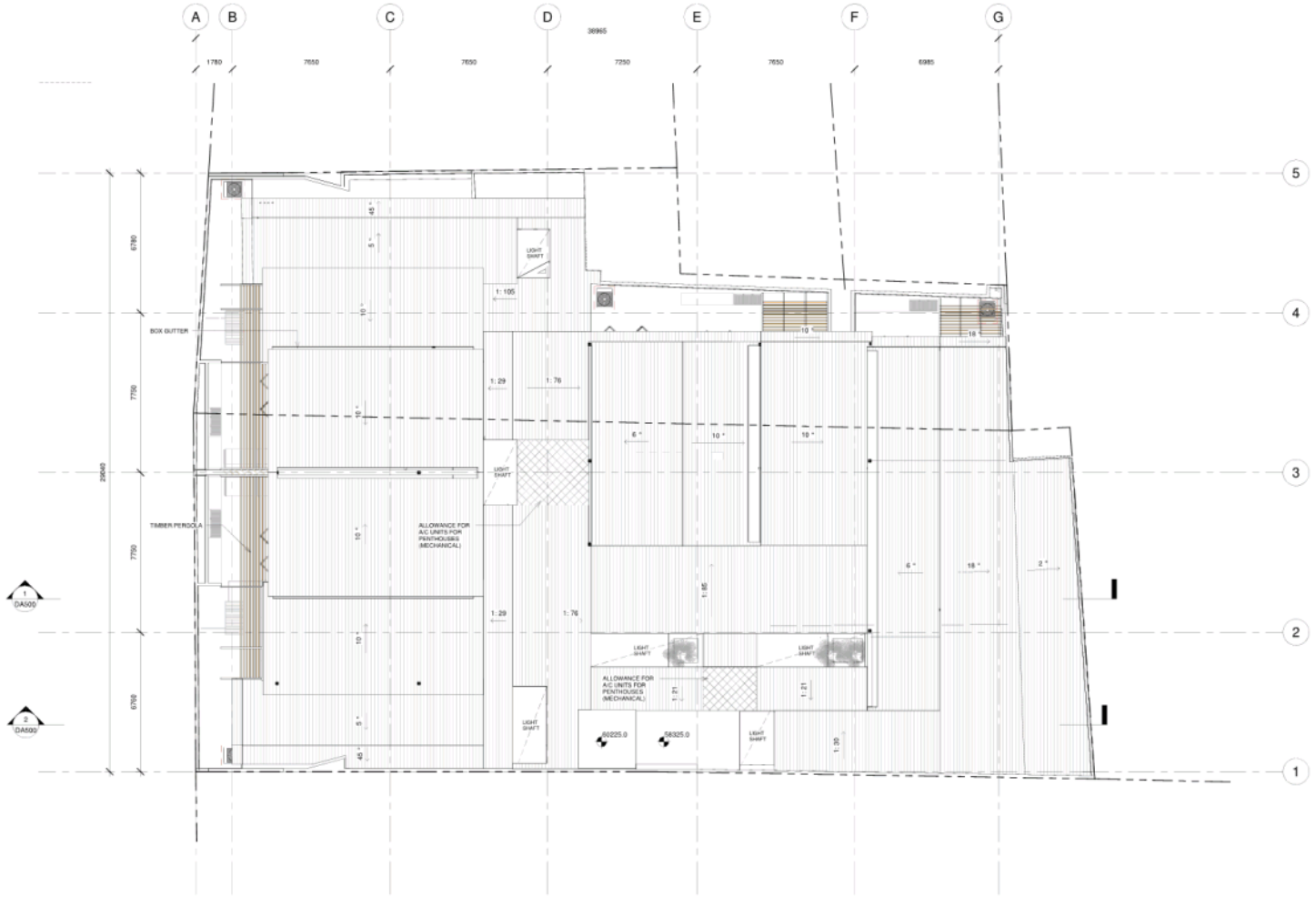

BPSM architects
Bluth Parkes Shugg & Moon

PROJECT	BURNETT STREET APARTMENTS
ADDRESS	40 AND 42-44 BURNETT STREET
CLIENT	Behrakis Group
SHEET NAME	ROOF
PROJECT NUMBER	H1914
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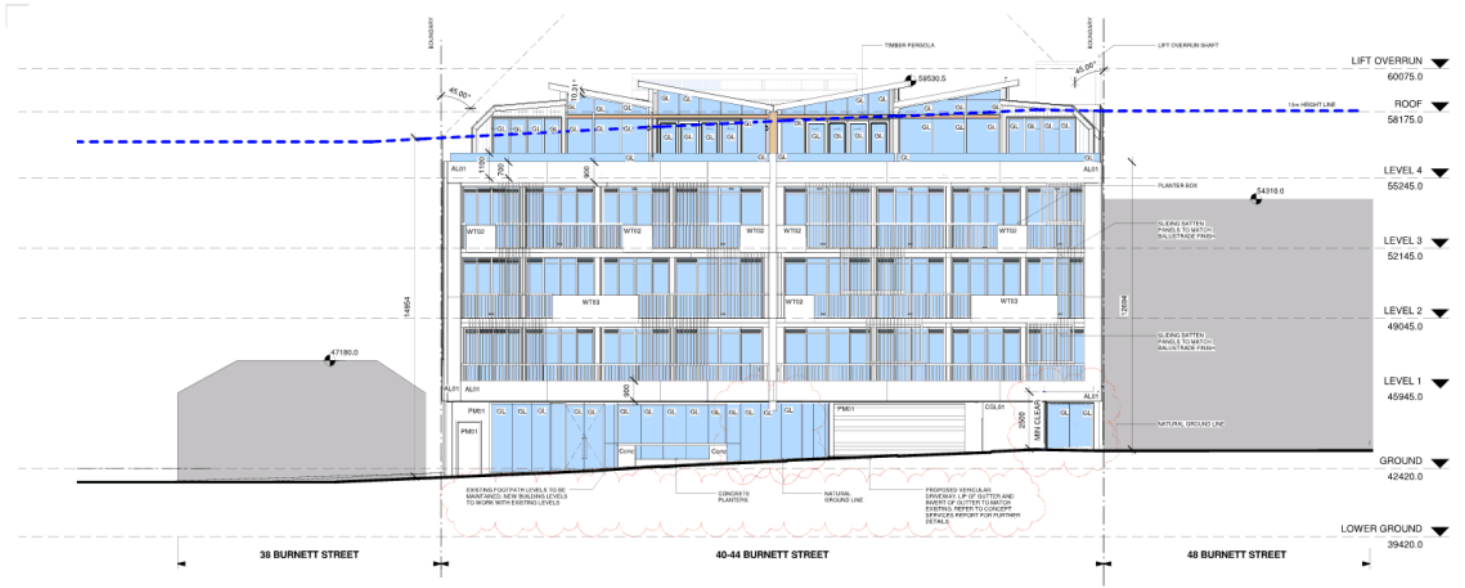
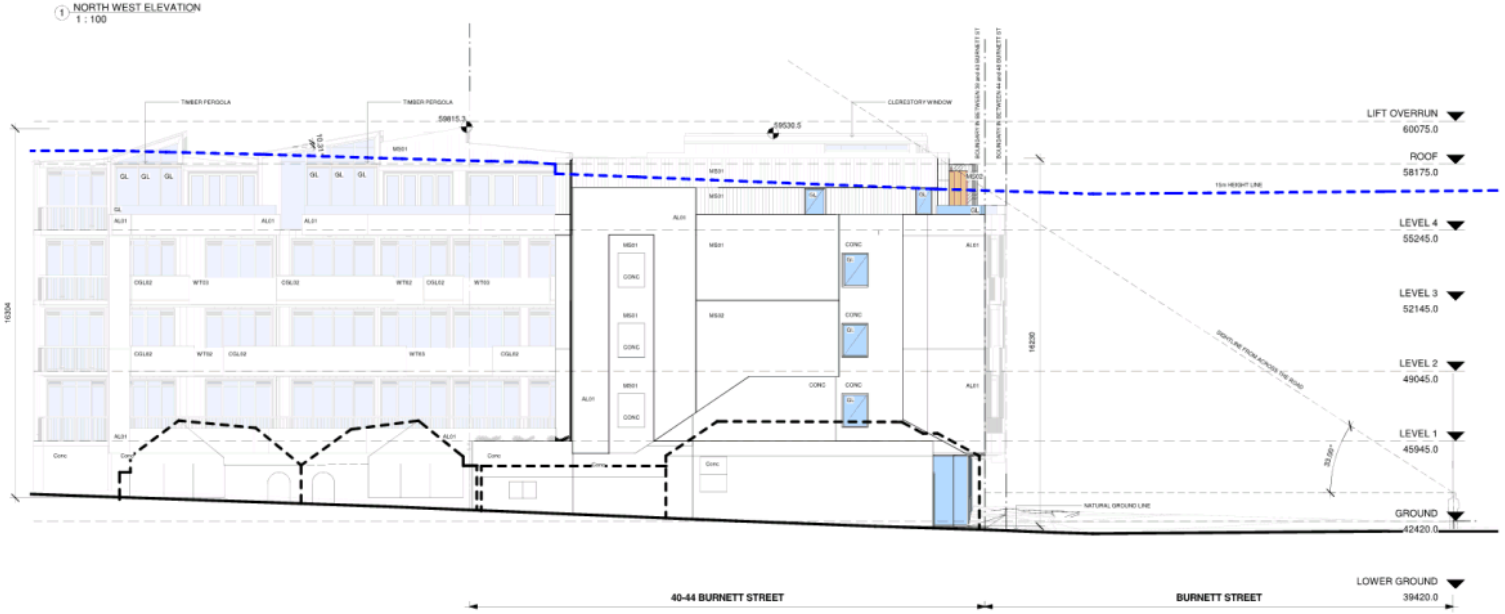
APPROVED BY	DJ
DRAWN BY	SJN
DATE	12/05/19
SHEET	DA207
REV	4



1 NORTH WEST ELEVATION
1 : 100



2 NORTH EAST ELEVATION
1 : 100

REV	DATE	DETAILS	CHECKED
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2	10.06.2020	Client/Planner Review	
3	03.09.2020	Final DA Set	
4	07.09.2020	Council RFI	
5	20.10.2020	Council RFI	

GENERAL LEGEND

ALLOWABLE DEVELOPMENT MASS HEIGHT

OUTLINE OF NEIGHBOURING BUILDING

15m HEIGHT LINE

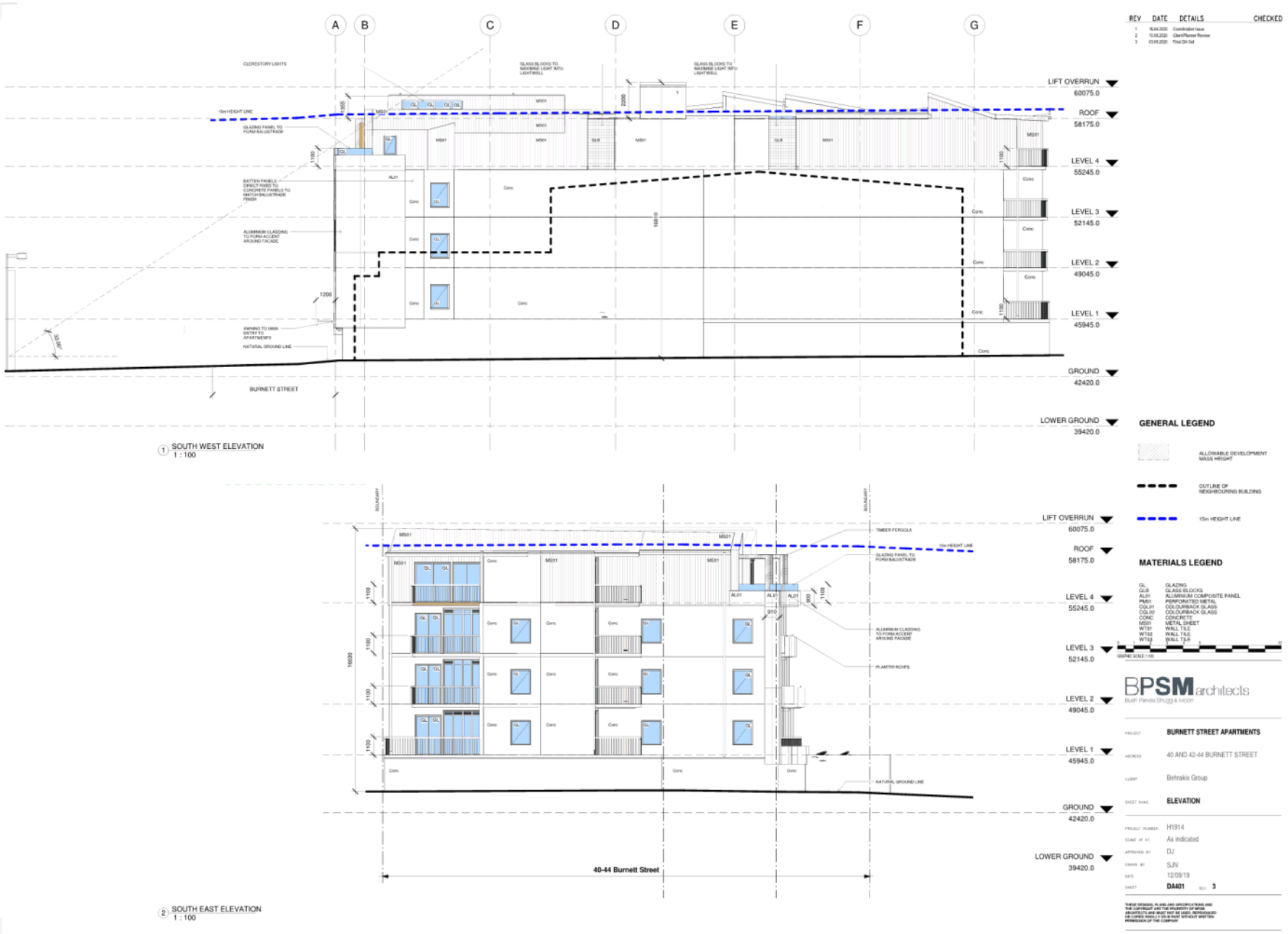
MATERIALS LEGEND

GL	GLAZING
GLB	GLASS BLOCKS
AL01	ALUMINIUM COMPOSITE PANEL
PM01	PERFORATED METAL
CGL01	COLOURBACK GLASS
CGL02	COLOURBACK GLASS
CONC	CONCRETE
MS01	METAL SHEET
WT01	WALL TILE
WT02	WALL TILE
WT03	WALL TILE

GRAPHIC SCALE 1:100

BPSM architects
Bush Parkes Shugg & Moon

PROJECT	BURNETT STREET APARTMENTS
ADDRESS	40 AND 42-44 BURNETT STREET
CLIENT	Behrakis Group
SHEET NAME	ELEVATION
PROJECT NUMBER	H1914
SCALE AT A1	As indicated
APPROVED BY	DJ
DRAWN BY	SJN
DATE	12/06/19
SHEET	DA400 REV 5


A
B
C
D
E
F
G
REV DATE DETAILS CHECKED
LIFT OVERRUN 60075.0
ROOF 58175.0
LEVEL 4 55245.0
LEVEL 3 52145.0
LEVEL 2 49045.0
LEVEL 1 45945.0
GROUND 42420.0
LOWER GROUND 39420.0
BURNETT STREET
1 SOUTH WEST ELEVATION 1 : 100
GENERAL LEGEND
ALLOWABLE DEVELOPMENT MASS HEIGHT
OUTLINE OF NEIGHBOURING BUILDING
15m HEIGHT LINE
MATERIALS LEGEND
BPSM architects
BURNETT STREET APARTMENTS
40 AND 42-44 BURNETT STREET
Behrakis Group
ELEVATION
H1914
As indicated
DJ
SJN
12/09/19
DA401
3
40-44 Burnett Street
2 SOUTH EAST ELEVATION 1 : 100


A
B
C
D
E
F
G
REV DATE DETAILS CHECKED
LIFT OVERRUN 60075.0
ROOF 58175.0
LEVEL 4 55245.0
LEVEL 3 52145.0
LEVEL 2 49045.0
LEVEL 1 45945.0
GROUND 42420.0
LOWER GROUND 39420.0
BASEMENT SSL 36320.0
PENTHOUSE 2
APARTMENT 3.3
APARTMENT 3.5
APARTMENT 3.6
APARTMENT 3.8
APARTMENT 2.3
APARTMENT 2.5
APARTMENT 2.6
APARTMENT 2.8
APARTMENT 1.3
APARTMENT 1.5
APARTMENT 1.6
APARTMENT 1.8
CARPARK
BURNETT STREET
1 SECTION A-A
1 : 100
PENTHOUSE 4
APARTMENT 3.4
APARTMENT 2.4
APARTMENT 1.4
APARTMENT 3.9
APARTMENT 2.9
APARTMENT 1.9
LIFT LOBBY
2 SECTION B-B
1 : 100
BPSM architects
BURNETT STREET APARTMENTS
40 AND 42-44 BURNETT STREET
Behrakis Group
SECTIONS
H1914
1 : 100
DJ
SJN
12/09/19
DA500
5

REV DATE DETAILS CHECKED

1 21.10.2020 Council RFI

BPSM architects

PROJECT BURNETT STREET APARTMENTS

ADDRESS 40 AND 42-44 BURNETT STREET

CLIENT Behrakis Group

SHEET NAME 3D VIEWS

PROJECT NUMBER H1914

APPROVED BY DJ

DRAWN BY SJN

DATE 09/25/20

SHEET DA803 REV 1

REV DATE DETAILS CHECKED

1 21.10.2020 Council RFI

BPSM architects

Bluth Planet Shugg & Moon

PROJECT BURNETT STREET APARTMENTS

ADDRESS 40 AND 42-44 BURNETT STREET

CLIENT Behrakis Group

SHEET NAME 3D VIEWS

PROJECT NUMBER H1914

SCALE AT A1

APPROVED BY DJ

DRAWN BY SJN

DATE 10/21/20

SHEET DA804 REV 1

REV	DATE	DETAILS	CHECKED
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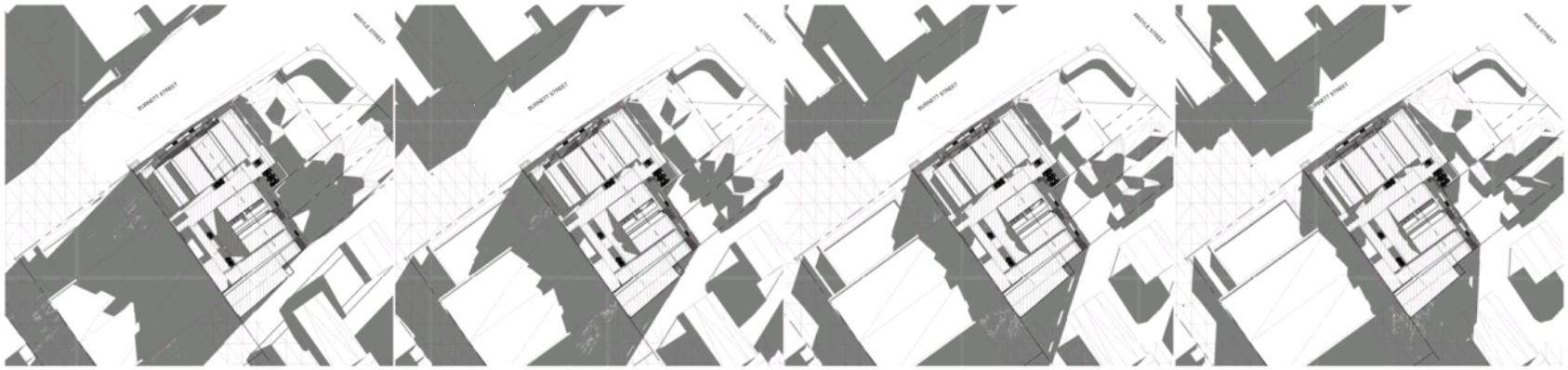
3	03.09.2020	Final DA Set	

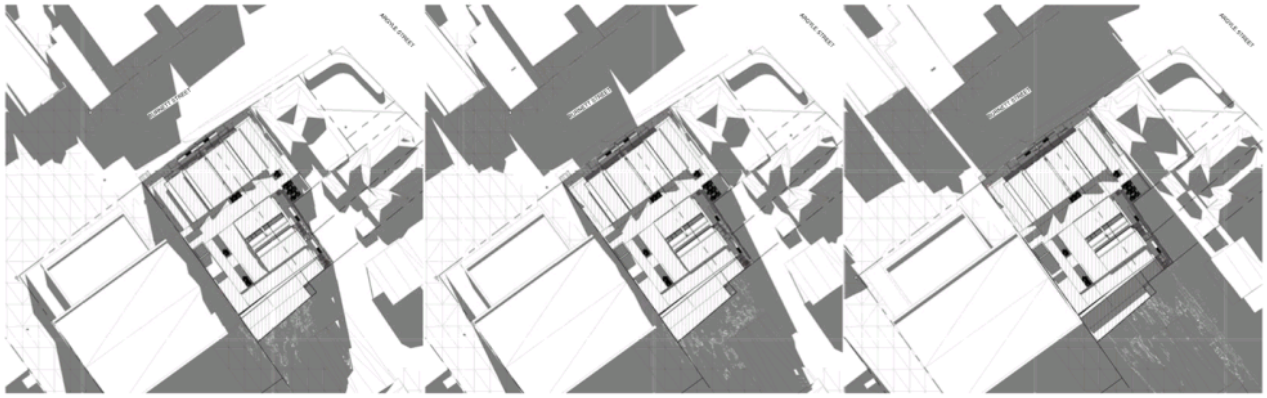


1 Shadow Diagram 9AM (21 JUNE)
1 : 500

2 Shadow Diagram 10AM (21 JUNE)
1 : 500

3 Shadow Diagram 11AM (21 JUNE)
1 : 500

4 Shadow Diagram 12PM (21 JUNE)
1 : 500



5 Shadow Diagram 1PM (21 JUNE)
1 : 500

6 Shadow Diagram 2PM (21 JUNE)
1 : 500

7 Shadow Diagram 3PM (21 JUNE)
1 : 500

BPSM architects
Bluett Parkes Shugg & Moon

PROJECT	BURNETT STREET APARTMENTS
ADDRESS	40 AND 42-44 BURNETT STREET
CLIENT	Behrakis Group
SHEET NAME	SHADOW DIAGRAM 9AM (21 JUNE)
PROJECT NUMBER	H1914
SCALE AT A1	1 : 500
APPROVED BY	DJ
DRAWN BY	SJN
DATE	09/19/19
SHEET	DA810 REV 3

APPENDIX D

Owner Advice Letters

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: J193078PH

18 September 2020

The Behrakis Group
10 Tasma Street
NORTH HOBART TAS 7000

To whom it may concern,

40 BURNETT STREET - DEVELOPMENT APPLICATION NOTIFICATION

We advise that JMG Engineers and Planners seeks to make a development application on behalf of Behrakis Holdings Pty Ltd for development of land at 40 Burnett Street North Hobart for an apartment building with a ground floor commercial tenancy.

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 the City of Hobart when the application is formally advertised.

Yours faithfully

JOHNSTONE McGEE & GANDY PTY LTD

Mat Clark

PARTNER/SENIOR 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: J193078PH

18 September 2020

Peter Behrakis et al.
GPO Box 67
HOBART TAS 7000

Dear Owner,

42-44 BURNETT STREET - DEVELOPMENT APPLICATION NOTIFICATION

We advise that JMG Engineers and Planners seeks to make a development application on behalf of Behrakis Holdings Pty Ltd for development of land at 42-44 Burnett Street for an apartment building with aground floor commercial tenancy.

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 the City of Hobart when the application is formally advertised.

Yours faithfully

JOHNSTONE McGEE & GANDY PTY LTD

Mat Clark

PARTNER/SENIOR TOWN PLANNER

City of HOBART

Enquiries to: City Planning
Phone: (03) 6238 2715
Email: coh@hobartcity.com.au

21 October 2020

(JMG Engineers and Planners)
117 Harrington Street
HOBART TAS 7000

mailto: planning@jmg.net.au

Dear Sir/Madam

**44 / 42 BURNETT STREET & 40 BURNETT STREET, NORTH HOBART
WORKS IN A ROAD RESERVE NOTICE OF LAND OWNER CONSENT TO LODGE A PLANNING APPLICATION - GMC-20-65**

Site Address:

40, 42-44 Burnett Street, North Hobart

Description of Proposal:

Demolition, New Building for 31 Multiple Dwellings and General Retail and Hire, Subdivision (Lot Consolidation), Alterations to Access, and Associated Works

Proposal involves works in the Road Reserve and Stormwater Infrastructure

Applicant Name:

Gabrielle Priest
JMG Engineers and Planners

PLN *(if applicable)*:

PLN-20-633

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

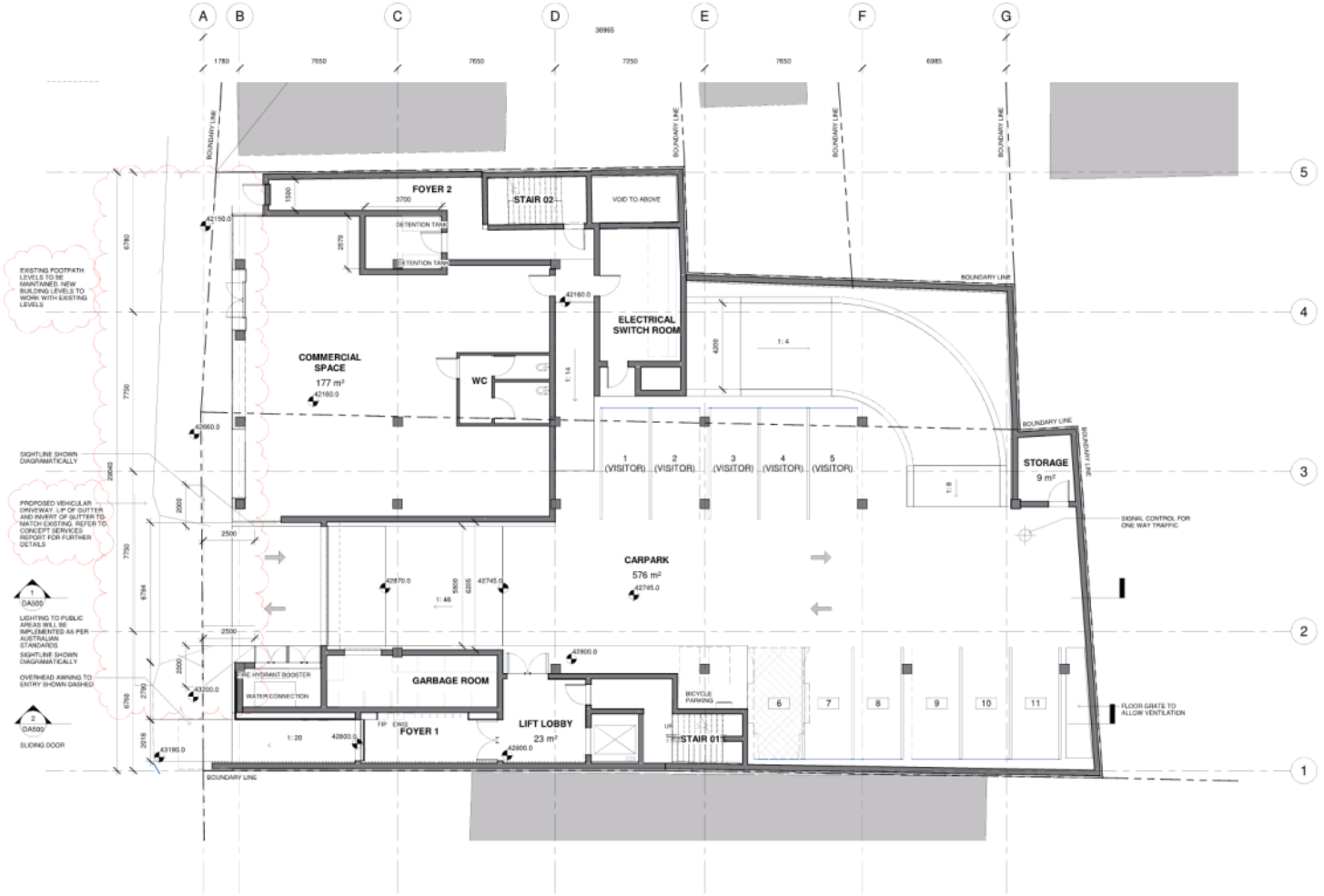
Relevant documents/plans:

Plans by BPSM Architects:
Sections - DA500 Rev 5
Ground - DA202 Rev 6
Elevation - DA400 Rev 5


Aporcved - General Manager Consent Only [GMC-20-65] 21/10/2020
A
B
C
D
E
F
G
REV DATE DETAILS CHECKED
LIFT OVERRUN 60075.0
ROOF 58175.0
LEVEL 4 55245.0
LEVEL 3 52145.0
LEVEL 2 49045.0
LEVEL 1 45945.0
GROUND 42420.0
LOWER GROUND 39420.0
BASEMENT SSL 36320.0
PENTHOUSE 2
APARTMENT 3.3
APARTMENT 3.5
APARTMENT 3.6
APARTMENT 3.8
APARTMENT 2.3
APARTMENT 2.5
APARTMENT 2.6
APARTMENT 2.8
APARTMENT 1.3
APARTMENT 1.5
APARTMENT 1.6
APARTMENT 1.8
CARPARK
BURNETT STREET
1 SECTION A-A 1 : 100
PENTHOUSE 4
APARTMENT 3.4
APARTMENT 3.9
APARTMENT 2.4
APARTMENT 2.9
APARTMENT 1.4
APARTMENT 1.9
LIFT LOBBY
2 SECTION B-B 1 : 100
BPSM architects
BURNETT STREET APARTMENTS
40 AND 42-44 BURNETT STREET
Behrakis Group
SECTIONS
H1914
1 : 100
DJ
SJN
12/09/19
DA500
5

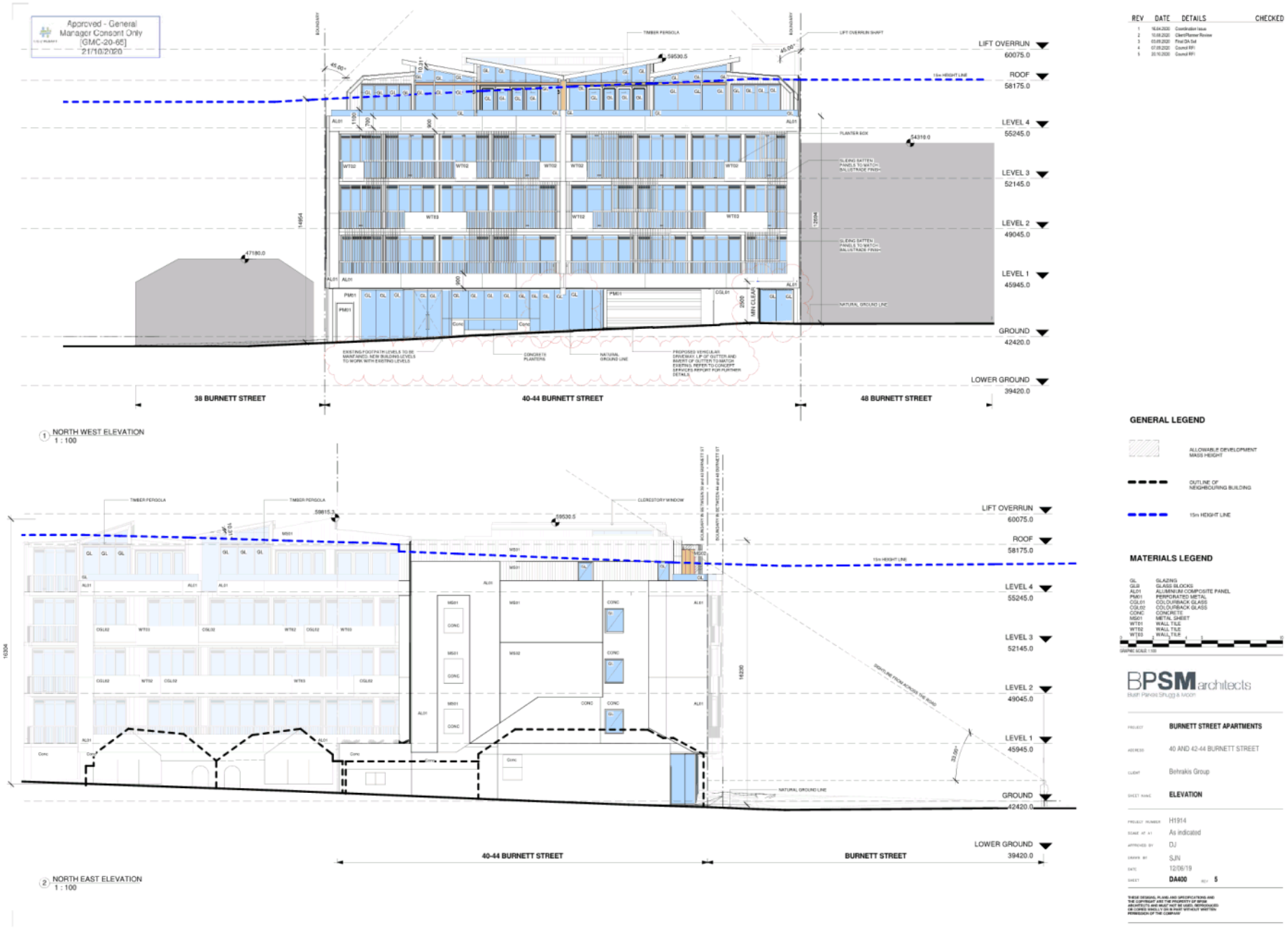
Aparcved - General Manager Consent Only [GMC-20-65] 21/10/2020

REV	DATE	DETAILS	CHECKED
1	06.01.2020	Lightwell Review	
2	16.04.2020	Coordination Issue	
3	10.08.2020	Client/Planner Review	
4	03.09.2020	Final DA Set	
5	07.09.2020	Council RFI	
6	20.10.2020	Council RFI	



BPSM architects
Bluth Parkes Shugg & Moon

PROJECT	BURNETT STREET APARTMENTS
ADDRESS	40 AND 42-44 BURNETT STREET
CLIENT	Behrakis Group
SHEET NAME	GROUND
PROJECT NUMBER	H1914
SCALE AT A1	1 : 100
APPROVED BY	DJ
DRAWN BY	SJN
DATE	12/05/19
SHEET	DA202 REV 6


Approved - General Manager Consent Only [GMC-20-65] 21/10/2020
LIFT OVERRUN 60075.0
ROOF 58175.0
LEVEL 4 55245.0
LEVEL 3 52145.0
LEVEL 2 49045.0
LEVEL 1 45945.0
GROUND 42420.0
LOWER GROUND 39420.0
38 BURNETT STREET
40-44 BURNETT STREET
48 BURNETT STREET
1 NORTH WEST ELEVATION 1 : 100
BURNETT STREET
2 NORTH EAST ELEVATION 1 : 100
REV DATE DETAILS CHECKED
GENERAL LEGEND
ALLOWABLE DEVELOPMENT MASS HEIGHT
OUTLINE OF NEIGHBOURING BUILDING
15m HEIGHT LINE
MATERIALS LEGEND
BPSM architects
BURNETT STREET APARTMENTS
40 AND 42-44 BURNETT STREET
Behrakis Group
ELEVATION
H1914
As indicated
DJ
SJN
12/06/19
DA400 5

APPENDIX E

Demolition Plan

REV	DATE	DETAILS	CHECKED
1	16.04.2020	Coordination Issue	
2	10.08.2020	Client/Planner Review	
3	03.09.2020	Final DA Set	

BPSM architects
Bluett Parkes Shugg & Moon

PROJECT	BURNETT STREET APARTMENTS
ADDRESS	40 AND 42-44 BURNETT STREET
CLIENT	Behrakis Group
SHEET NAME	DEMOLITION PLAN
PROJECT NUMBER	H1914
SCALE AT A1	1 : 300
APPROVED BY	DJ
DRAWN BY	SJN
DATE	12/03/19
SHEET	DA103 REV 3

APPENDIX F

Environmental Site Assessment

GES

GEO-ENVIRONMENTAL

SOLUTIONS

ENVIRONMENTAL SITE ASSESSMENT

40 & 42-44 Burnett Street, North Hobart, Tasmania

November 2019

Report for BPSM Architects

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. *40 & 42-44 Burnett Street, North Hobart, Tasmania*	Version 1	16 December 2019	K Taylor	JP Cumming

EXECUTIVE SUMMARY

This report presents the findings from Environmental Site Assessment (ESA) undertaken by Geo-Environmental Solutions Pty. Ltd. (GES) at 40 & 42-44 Burnett Street, North Hobart, Tasmania - hereby referred to as 'The Site'; for the proposed unit apartment complex site redevelopment. GES was engaged by BPSM Architects on behalf of their client to conduct this investigation. The requirement for the ESA was under the Interim Planning Schemes, Potentially Contaminated Land Code *E2.6.2 Excavation Works and E2.5 P1Change of Use* as the site is potentially contaminated from former site activities.

This report has been prepared by a suitably qualified and experience practitioner in accordance with procedures and practices detailed in NEPM (2013) guidelines and key regulations and policies.

The following conclusions were made from the desktop assessment:

- The site is inferred to be underlain with fill materials, sandy clay sediments (possibly residual), and residually weathered Triassic aged mudstone bedrock;
- Given the localised drainage divide to the west, the nearest upgradient influence of groundwater is inferred to be from within 50 m southwest, and west of the site;
- The desktop assessment has focused primarily on the site, as well as properties between 48 and 58 Burnett Street and 27 to 35 Tasma street;
- Workplace Standards dangerous goods records have confirmed field observations of a single 4.5 kL underground storage tank on the site;
- Council records have identified:
    - an upgradient fuel storage warehouse at 48 Burnett Street,
    - have confirmed the presence of Caltex operating the site during the period the underground storage tank was commissioned; and
    - Have identified potential contaminating activities on upgradient 27 to 35 Tasma Street site
- Historical aerial photos have identified a bulk equipment storage yard at 27 to 35 Tasma Street and unpaved surfaces for a significant timespan indicating a potential primary source of contamination;
- Areas of concern therefore include:
    - Groundwater downgradient of:
        - 27 to 35 Tasma Street historically unpaved storage yard;
        - 48 Burnett Street fuel storage warehouse; and
        - The onsite underground storage tank
    - Soil around:
        - Impacted groundwater;
        - The underground storage tank; and
        - Fill material onsite
- The following contaminants of potential concern (COPC) are associated with imported fill and upgradient service station: Total Petroleum/Recoverable Hydrocarbons (TPH/TRH); Mono Aromatic hydrocarbons: Benzene, Toluene, Ethylbenzene, Xylene (BTEX); Polycyclic Aromatic Hydrocarbons (PAH); Heavy Metals.

The following conclusions have been made from the soil investigation based on the sampling around AEC's and based on analysed COPC's and based on the nominated threshold limit criteria for assessing risks from proposed site development works and proposal:

- Environment: There were no hydrocarbon detections and no guideline exceedances for Ecological Screening Level guidelines. There was a single low-level detection of copper exceeding Ecological Investigation Level guidelines. No risk from contamination to ecological receptors was identified;
- Human Health: There were no Health Screening level exceedances for assessing petroleum vapour intrusion risk and dermal contact risk. There were no Health investigation level exceedances for assessing dust inhalation and soil ingestion risks; and
- Excavated Soil Management: The soil samples were compared against IB105 guidelines for soil disposal. Most of the soil was classified as Level 1 Material – Clean Fill. Five (5) of the eighteen (18) samples had slightly elevated levels of metals including barium, beryllium, copper, cobalt, manganese and nickel which classified the material as Level 2 material. GES recommends that all soil excavated for the site is stockpiled, sampled by a suitably qualified and experienced environmental consultant and results compared against *IB105* guideline limits for appropriate soil disposal. Where necessary, it is to be transported to a Level 2 waste facility (Copping). A permit to transport the waste (obtained through the EPA) will be required. However, these recommendations have been superseded by the need to manage ASS at the site.

GES recommends the following:

- Although an ecological risk has not been identified, a soil and water management plan should be put in place for general sediment control to reduce loadings into the waterways.

Statement of Suitability

The findings from the invasive soil investigation can confirm that there is no evidence that the land is contaminated in terms of evaluated risks to human health or the environment.

Therefore, providing the above recommendations are followed in relation to the environment, GES can confirm that the planned excavation works and change of use will not adversely impact human health or the environment.

No additional contamination remediation or management measures will be required during the site redevelopment works.

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Plates

Figures

Tables

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
BTEX	Benzene Toluene Ethylbenzene Xylene
CMP	Contamination Management Plan
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
LiDAR	Light Detection And Ranging
LOR	Limits of Reporting
MCRWBA	Minimum Construction Requirements for Water Bores in Australia
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
NRMMC	Natural Resource Management Ministerial Council
NL	Non Limiting
NRMMC	Natural Resource Management Ministerial Council
PAH	Polynuclear Aromatic Hydrocarbons
PCP	Physico-Chemical Parameters
PEV	Protected Environmental Values
PHC	Petroleum Hydrocarbons
PID	Photo-Ionisation Detector
PPA	Preferential (PVI) Pathways Assessment

PSH	Phase Separated Hydrocarbons
PVI	Petroleum Vapour Intrusion
Redox	Reduction / Oxidation Potential
SCA	Site Contamination Assessment
SCM	Site Contamination Model
TPH	Total Petroleum Hydrocarbons
TRH	Total Recoverable Hydrocarbons
USCS	Unified Soil Classification System
WRG	Water Resource Group

1 INTRODUCTION

1.1 General

This report presents the findings from Environmental Site Assessment (ESA) undertaken by Geo-Environmental Solutions Pty. Ltd. (GES) at 40 & 42-44 Burnett Street, North Hobart, Tasmania - hereby referred to as 'The Site'; for the proposed unit apartment complex site redevelopment. GES was engaged by BPSM Architects on behalf of their client to conduct this investigation.

The Site location is presented in Figure 1 and the current site aerial photograph is presented in Figure 2. The requirement for the ESA was under the Interim Planning Schemes, Potentially Contaminated Land Code *E2.6.2 Excavation Works and E2.5 P1Change of Use* as the site is potentially contaminated from former site activities.

This report has been prepared by a suitably qualified and experience practitioner in accordance with procedures and practices detailed in NEPM (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 1 along with their relevant qualifications and years of experience.

Figure 1 Site Location (image sourced from the LIST)

Subject site : 40 and 42-44 Burnett Street, Hobart (CT 211936/1 and 228032/1)

Figure 2 Aerial Phtograph of the Current Site Layout (c/o Google Earth) 12 April 2019

1.2 Site Details

Site details are presented in Table 1.

Table 1 Site Details

Site Address 40 to 44 Burnett Street, North Hobart, Tas, 7000.
Current Title identification details PID 5658661 Title Reference 211936/1 (40 Burnett St) PID 5658653 Title Reference 228032/1 (42-44 Burnett St)
Current land use Novus windscreen repairs & Tradelink plumbing supplies
Current Ownership (as per current certificates of title; the LIST) 5658661BEHRAKIS GROUP PROPERTY HOLDINGS PTY LTD 5658653 PETER BEHRAKIS, VICTORIA ANN BEHRAKIS, DENNIS BEHRAKIS, & MARIA BEHRAKIS
Zoning 23.0 Commercial under the Tasmanian Interim Planning Scheme, 2015.
Local Council Hobart City Council
Proposed Site Use Residential apartments & commercial street frontage
Requirement for current Investigation The site is listed as a potentially contaminated site under the Interim Planning Scheme. Proposed change of used and excavation works have triggered this assessment.

1.3 Investigation Objectives

The objective of the ESA was to address E2.6.2 P1 (excavation works) and E2.5 P1 (change of use) performance criteria under the Interim Planning scheme.

1.4 Scope of Works

The scope of works of this ESA was to:

- Conduct a desktop assessment, site history; plus undertake an invasive soil assessment
- A total of nine locations were sampled and 18 primary soil samples were collected for analysis of Total Recoverable Hydrocarbons (TRH), Benzene Toluene Ethylbenzene Xylene Naphthalene (BTEXN), Polynuclear Aromatic Hydrocarbons (PAHs) and a suite of 15 Metals.
- All soil samples were sent to a National Association of Testing Authorities (NATA) accredited laboratory to determine the presence/ absence of contamination and at what level;
- All samples were sent with quality assurance/quality control samples for analysis;
- All analytical results against were compared against NEPM ASC (2013) guidelines as well as other relevant guidelines for assessing hydrocarbon vapour and soil dermal contact risks; and
- Present the findings of the site investigation, conduct a risk assessment and develop a conceptual site model (CSM) plus present future contamination management recommendations in this ESA document.

1.5 Adopted Land Use Settings for the Investigation

The following investigation limits/guidelines were adopted for the site for the proposed development:

- Ecosystem – as the site is fully paved and proposed to be fully paved, there is a low risk to onsite ecological receptors, although the site needs to be addressed against ecological criteria relevant to the zoning with consideration for site erosion risks to waterways and the receiving environment; the following guidelines were adopted:
    - Soil – Urban residential / public open spaces land use EILs and ESLs
- The period during the development phase where excavation is proposed for the basement car park, criteria for assessing risks to onsite workers (and commercial workers on neighbouring sites potential exposed to activities during site development) are considered:
    - HSL D for vapour intrusion risk to commercial workers plus TRENCHWORK specific vapour assessment (allowance for HSL D given basement car park venting);
    - HSL D (CRC CARE) for assessing dermal contact risk to commercial workers; and
    - HIL D for assessing dust inhalation and soil ingestion risk to commercial workers;
- Future land users – the following land use settings have been applied for future site users;
    - HSL D for vapour intrusion risk to onsite commercial workers, future trench workers, and onside residence (allowance for HSL D given basement car park venting);
    - Given that the site is proposed to be fully paved, the following criteria are relevant to all future site users:
        - HSL D (CRC CARE) for assessing dermal contact risk; and
        - HIL D for assessing dust inhalation and soil ingestion risk.

2 PLANNING

2.1 Zoning

The site is zoned Commercial under the Tasmanian Interim Planning Scheme of 2015 (Figure 3) and is surrounded by Utilities and Light Industrial. There are no residential areas near the site.

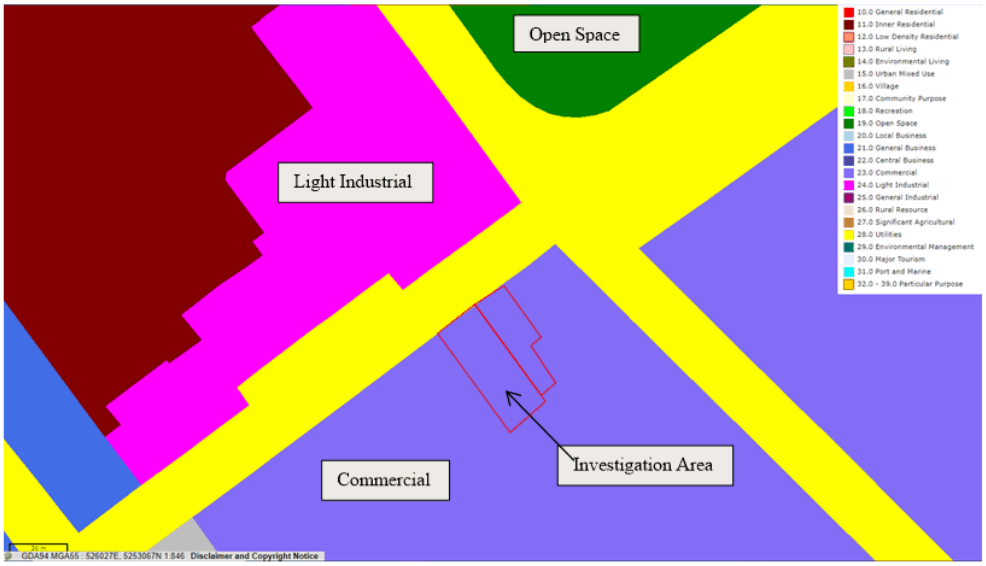

Figure 3 Council planning zones (2015) under the Tasmanian Interim Planning Scheme

2.2 Interim Planning Scheme

The development application is for the proposed construction of a building on a site where potentially contaminating activities may have taken place or may have been influenced by contaminating activities on a neighbouring site. The Council are therefore required to address the Potentially Contaminated Land Code E2.0 of the Interim Planning Scheme 2015 under section 54 of the Land Use Planning and Approvals Act 1993.

An environmental site assessment (ESA) is the principal requirement within the IPS E2.0 performance criteria. According to the IPS, the ESA report must be prepared by an suitably qualified person and define the nature, extent and levels of existing contamination and the actual or potential risk to human health or the environment, on or off the site, resulting from that contamination, prepared in accordance with the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended 16 May 2013.

There is a proposed change of use from commercial to mixed commercial/residential, and there is proposed excavation works at the site, and therefore both E2.5 P1 performance criteria for change of use and E2.6.2 P1 performance criteria for proposed excavation works are to be addressed.

2.2.1 Excavation Works (E2.6.2 P1)

As there is proposed excavation works at the site, there are no acceptable solutions to proposed works, E2.6.2 P1 performance criteria are to be addressed. The performance criteria identify that the 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.

2.2.2 Change of Use (E2.5 P1)

As there is proposed change of use of the site (from commercial to residential), and there are no acceptable solutions to change of use, E2.5 P1 performance criteria are to be addressed. The performance criteria identify that for there to be a change of use, the objective is that it must be suitable for the intended use, having regard to:

(a) an environmental site assessment that demonstrates there is no evidence the land is contaminated; or
(b) an environmental site assessment that demonstrates that the level of contamination does not present a risk to human health or the environment; or
(c) a plan to manage contamination and associated risk to human health or the environment that includes:
    i. an environmental site assessment;
    ii. (any specific remediation and protection measures required to be implemented before any use commences; and
    iii. a statement that the land is suitable for the intended use.

2.3 Proposed Site Redevelopment Works

The proposed development plans are included in Appendix 2 and includes:

- Demolition of the existing buildings on CT 211936/1 and CT 228032/1.
    - it is noted that aerial imagery (from LISTmap) indicates that the building on 42-44 Burnett Street (CT 228032/1) appears to occupy a portion of the Burnett Street road easement, requiring permission from the relevant Road Authority/Administrator for approval for the making of the application as per s52 (1B) of the *Land Use Planning and Approvals Act 1993* (LUPAA);
- Boundary adjustment between the two lots to create a single development site area of 1128 m^2;
- Removal of the existing vehicle access to 42-44 Burnett Street and provision of a new vehicle access to 40 Burnett Street;
    - it is noted that there is a strip of land identified as subdivision road (CT 86267/1) with Hobart City Council identified as the owner, between 40 Burnett Street and the Burnett Street road easement, requiring permission from Hobart City Council as the relevant Road Authority/Administrator for approval for the making of the application as per s52 (1B) of the *Land Use Planning and Approvals Act 1993* (LUPAA);
- Development of a 5 storey mixed use building including:
    - 2 basement levels, providing parking,
    - 1 ground floor, providing, commercial space, on-site parking, vehicle and pedestrian access to the residential dwellings;
    - 4 floors of residential development, comprising a total of 31 multiple dwellings arranged as follows:
        - Level 1, 4 x 3 bedrooms, 4 x 2 bedrooms and 1 x 1 bedroom (total 9 multiple dwellings);
        - Level 2, 4 x 3 bedrooms, 4 x 2 bedrooms and 1 x 1 bedroom (total 9 multiple dwellings);
        - Level 3. 4 x 3 bedrooms, 4 x 2 bedrooms and 1 x 1 bedroom (total 9 multiple dwellings); and
        - Level 4, 3 x 3 bedroom Penthouses and 1 x 2 bedroom Penthouse (total of 4 multiple dwellings).
- A total of 37 spaces of on-site parking is proposed with:
    - 12 spaces on the ground floor; and
    - 50 spaces in the lower ground and basement.
- Provision of associated sewer, water and stormwater services; and
- Provision of associated telecommunications, bicycle parking, rubbish and mail box provisions for occupants of the development.

3 PRELIMINARY INVESTIGATION - DESKTOP

3.1 Site Topography & Drainage

Based on Mt Wellington and Derwent River LIDAR (2013), the centre of the investigation area is approximately 40m above sea level. Natural surface water flow is inferred to be draining from properties from the southwest within 50 m of the site (Figure 4).

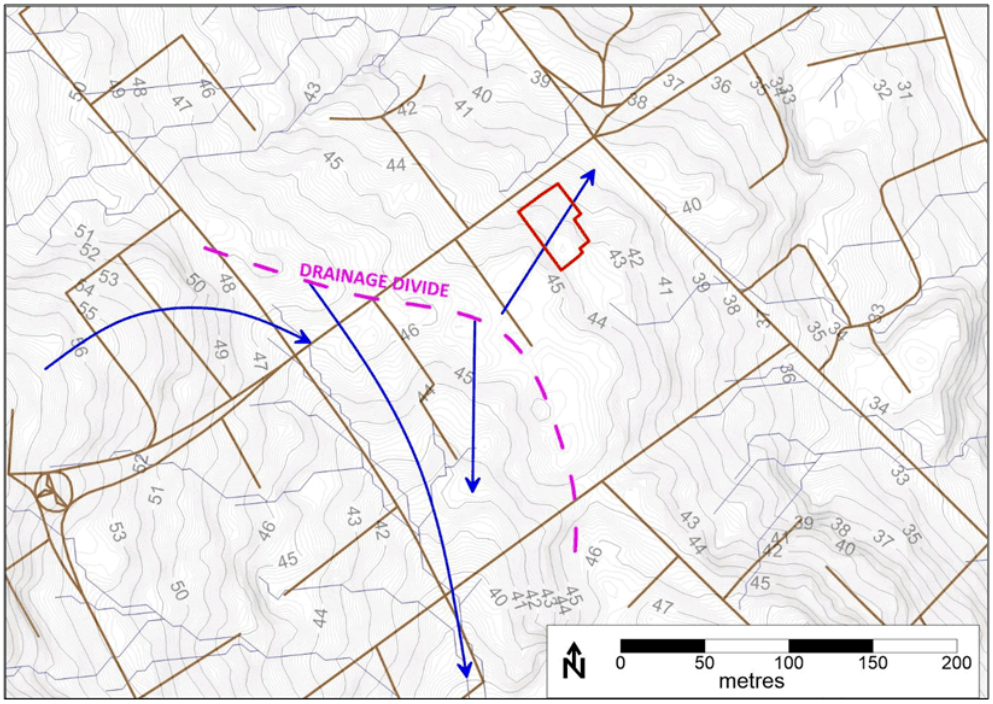

Figure 4 Surface Topography and Inferred Groundwater Flow

3.2 MRT Geology Mapping

The geology of the site has been mapped by Mineral Resources Tasmania (Figure 5). The site is inferred to be underlain with:

- Rqpc - Predominantly interbedded siltstone shale and mudstone and planar-bedded, ripple cross-laminated or cross-bedded sandstone, red-purple, green or carbonaceous siltstone at places (part of Knocklofty Formation where in Hobart area).

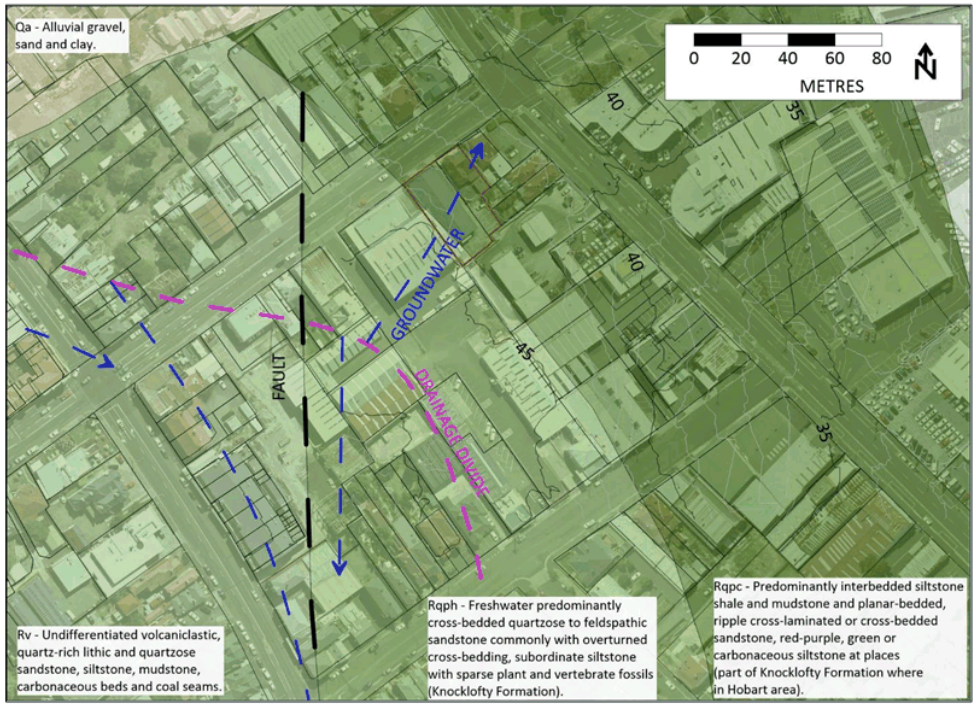

Figure 5 Mineral Resources Tasmania 1:25,000 Scale Mapping (The LIST).

3.3 Groundwater

The stratigraphy is tilted 16° to the west and groundwater may have preferential flow to the west rather than immediately downgradient to the northeast if there are permeable strata.

Given the site is fully paved, there is little opportunity from surface water ingress from the site.

3.3.1 Potential Up-Gradient Contamination Sources

Relevant properties draining towards the site include 48 through to 58 Burnett Street.

3.3.2 Downgradient Ecological Receptors

The closest ecological receptor directly leading from the site groundwater is the Derwent River estuary. Groundwater is likely to follow a similar path to the former drainage alignment alongside the broker highway (Campbell Street). Potential contamination originating from the site may enter the Derwent Estuary from surface water flow into the stormwater system. Considerations need to be given to assessing surface water quality is site dewatering it required during the basement excavation works.

3.3.3 Groundwater Bores

Mineral Resources Tasmania Registered water bores are presented in Appendix 3. The nearest registered groundwater bore to the site (bore ID 2864) is located approximately1.1km to the east of the site in a Jurassic dolerite rock aquifer. The bore has been abandoned. No groundwater receptor identified.

3.4 Dangerous Goods Records (WorkSafe Tasmania)

A single registered but abandoned 4.5 kL petroleum underground storage tank is present on the site (see appendix 4). The underground storage tank and associated infrastructure was originally commissioned in 1960. The bowser has been decommissioned (unknown date) possibly when the lease was transferred to Lifeline prior to 1988. The tank will need to be officially decommissioned in accordance with IB109.

3.5 EPA Tasmania Property Information request

A property information request was lodged with EPA Tasmania and the search failed to find any records relating to contamination on the site (see appendix 4). The request noted a number of nearby properties where there is potential contamination, however many are either down gradient, or separated by considerable distance.

3.6 Historical Aerial Photography Interpretation

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 Imagery. The individual aerial photos are presented in Plate 4 (2019) to Plate 14 (1946) in Appendix 5. Table 2 presents a summary of the date and corresponding historical aerial photograph for each photograph.

To summarise, the site was originally a residence up until circa 1965 when a large warehouse was constructed. A warehouse was constructed on the neighbouring site at 48 Burnett between 1973 and 1977, and prior to this, the site looks to have had a residential dwelling in place. Upgradient site 27-35 Tasma has had a long history of being used as a storage yard and was unpaved for a considerable period.

Table 2 Historical Aerial Photograph Review

Photo	Observations
2019	• Historical Aerial Image Plate 4
2017	• Historical Aerial Image Plate 5
2003	• Historical Aerial Image Plate 6 Neighbouring site to the South and Southeast is not paved.
1992	• Historical Aerial Photograph Plate 7 Upgradient site at 27-35 Tasma is used as a storage yard although it is paved.
1989	• Historical Aerial Photograph Plate 8
1984	• Historical Aerial Photograph Plate 9
1977	• Historical Aerial Photograph Plate 10 • A warehouse has been constructed at 48 Burnett
1973	• Historical Aerial Photograph Plate 11
1969	• Historical Aerial Photograph Plate 12
1965	• Historical Aerial Photograph Plate 13 • Warehouse constructed at 42 to 44 Burnett.
1957	• Historical Aerial Photograph Plate 14. • Large storage yard out the back of 42 to 44 Burnett. • 27-35 Tasma is not paved and used for storage.
1946	• Historical Aerial Photograph Plate 15. • Both sites have residential buildings on them

3.7 Council Environmental Records

The Hobart City Council was contacted on the 13th December 2019. An Environmental Health Officer with the Council confirmed the following information:

- 42 to 44 Burnett Street is classified as a contaminated site on the basis that Caltex historically owned the site. Other business occupying the site include Fruit and Vegetable Wholesalers Stokes & Hammond Pty Ltd and Lifeline neither of which are of environmental concern.

- There is no record available for 40 Burnett Street, nor for upgradient properties 50 or 52 Burnett Street.
- Downgradient property 274 Argyle Street was occupied by Sims Brickworks. Given the site has a building on it which has been present before 1946, this may have either been a business office or the brickworks occurred before 1946.
- Upgradient 48 Burnett Street had residential buildings up until 1973, when a large storage shed was constructed. The site was occupied by COR/BP, HCS Leigh, Golden Fleece, as well as Hanson & Younkin. It is likely that the site was used for fuel transport services (storage of tankers); and
- Upgradient 27-35 Tasma Street was occupied by Jonathan Hemming and is currently owned by Design Makers Tasmania and owned by State Growth.

In summary potential contaminating activities are most likely to originate from underground storage tanks onsite as the highest priority.

3.8 Historical Site Investigations

GES is not aware of any previous investigations for the site.

3.9 Potential Contamination Issues

3.9.1 Areas of Potential Concern

As determined in this desktop assessment, the following areas of concern have been identified:

- Potential fill material beneath the existing pavement;
- Soil around the existing UST and groundwater below and downgradient of the UST;
- Groundwater and potentially soil on the site which may have been impacted by fuel stored on the neighbouring site at 48 Burnett Street;
- Groundwater and potentially soil on the site which may have been impacted by fuel stored on the neighbouring site at 27 to 35 Tasma Street.

3.9.2 Contaminants of Potential Concern

The following contaminants of potential concern (COPC) could be associated with imported fill and the up-gradient Gagebrook service station:

- Total Petroleum/Recoverable Hydrocarbons (TPH/TRH);
- Mono Aromatic hydrocarbons: Benzene, Toluene, Ethylbenzene, Xylene (BTEX);
- Polycyclic Aromatic Hydrocarbons (PAH) and
- Heavy Metals.

4 FIELD INVESTIGATION PROCEDURES

4.1 Works Summary

A single site visit was conducted to complete the environmental site assessment, see details in Table 3; borehole locations are presented in Figure 6. Photographs of site are presented in Appendix 6.

Table 3 Summary of Site Investigation Work Dates

Scope	Data	Lab Report	Details
Drilling/ Sample collection	21st October 2019	EM1917734 Primary Lab	18 Primary Samples were collected from 9 soil bore locations. Secondary lab ES1935030

Figure 6 Borehole Plan

4.2 Site Walkover

A site walkover was completed by GES staff on the 21st October 2019. Images of the underground storage tank location and drilling are presented in Plate 1 to Plate 3 and additional general site photographs are presented in Appendix 6.

4.2.1 Surface Coverings

The surface of the site is fully paved with concrete.

4.2.2 Signs of Contamination

A visual assessment of the fill is not enough to rule out site contamination; however there were signs of more recent oil spills.

Plate 1 Underground Storage Tank Identified Location

Plate 2 Fill Point for the Single 4.5 kL Underground Storage Tank

Plate 3 One of the Investigation Holes Drilled Near the Underground Storage Tank

4.3 Soil Investigation

4.3.1 Soil Sampling

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; and
- Archers Underground Service were engaged;

A Geoprobe drilling rig was used to collect soil samples and sampling was conducted per the National Environmental Protection (Assessment of Site Contamination) Measure (NEPM ASC 2013) and AS4482 sampling guidelines. Table 4 presents a summary of the soil assessment methodology adopted at the site.

Table 4 Summary of Soil Sampling Methods

Activity	Details / Comments
Underground Service Clearance	At each testing location, the following precautions were put in place to avoid disrupting underground service assets: • Dial Before You Dig plans were obtained; and • Where practical, the first meter of the bore was cleared with a hand auger.
Sampling Method	Soil samples were collected directly from excavator bucket.
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	Decon 90 was used to decontaminate reusable sampling equipment (hand auger and core trays) which was triple rinsed, the final rinse with deionised water.
Soil Sample Collection	In accordance with AS4482.2. Individual soil samples were collected using disposable nitrile gloves from approximately at 1.0m intervals below ground surface (bgs) and/or change in geology.
Soil Screening	In accordance with AS4482.2. Collected samples were screened for volatile fractions using a Photoionisation Detector (PID). This was done by placing the samples within

Activity	Details / Comments
	snap lock bags and analysing the headspace with a PID probe. A service record for GES's PID is included in Appendix 6 for the second round of sampling.
Sample Selection	A minimum number of samples were carefully selected which would provide enough 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.

4.3.2 Soil Analysis

Primary and QC samples were submitted to Analytical Laboratory Services (ALS) Environmental, Springvale Avenue in Melbourne for analysis. The Inter lab duplicate split sample was sent to ALS Environmental, located in Smithfield, NSW. The samples were analysed for TPH/TRH, BTEX, PAHs and 15 Metals. One duplicate and Inter lab duplicate split sample was collected. Chain of Custody (COC) documentation was completed and is provided in Appendix 8 plus the Sample Receipt Notification (SRN) in Appendix 9. Table 5 presents a summary of the laboratory analyses undertaken for the soil samples.

Table 5 Overview of Soil Analysis and Quality Control

Analytes	Primary Soil Samples	Duplicates[a]	IIS[b]
TPH/TRH	18	1	1
BTEX	18	1	1
PAH	18	1	1
15 Metals	18	1	1

Sampling Quality Control Standards (AS4482):
a – One (1) in twenty (20) inter laboratory duplicate samples
b - One (1) in twenty (20) intra laboratory split (ILS) samples

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 the greater Hobart.

5 QUALITY CONTROL

All Field and laboratory Quality Assurance and Quality Control (QA/QC) details, outputs and reports are presented in Appendix 10.

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 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 (Method Detection Limit)

Field QA/QC procedures and compliance are summarised in Table 6.

Table 6 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 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	Yes	A total of 18 Primary samples were selected for analysis; 1 duplicate sample and 1 inter-lab splits: was required.
QA/QC samples reported method detection limits within indicated guidelines.	Acceptable	For Duplicate and BH01 1.5-1.6 pairs, 98% of analytes complied. For ILS and BH07 0.5-0.6 pairs, 91% of analytes complied.
Trip blanks collected with no laboratory detections?	NA	According to AS4482.2-1999. Not required.
Required numbers of rinse blank samples collected with no laboratory detections?	No	One rinse blank should have been collected as per AS4482.1-2005 but was not.
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 7.

Table 7 Soil Laboratory QA/QC Procedures and Compliance

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.
Method Blanks: zero to <Practical Quantitation Limit (PQL)	Yes	There were no method blank value outliers in any of the QC1 reports including Primary: EM1917734; Secondary: ES1935030
Laboratory Control Samples: 70% to 130% recovery for soil.	Yes	There were no laboratory control outliers in any of the QC1 reports including Primary: EM1917734; Secondary: ES1935030
Matrix spikes: 70% to 130% recovery for organics or 80%-120% recovery for inorganics	No	There were matrix spike outliers in the Primary: (EM1917734) sample BH01 0.5-0.6 for Manganese and vanadium. High concentrations of manganese detected in primary samples may be attributed to laboratory error; No matrix spike outliers exist for the Secondary sample: ES1935030
Duplicate Samples: 0% to <20% RPD.	Yes	There were no duplicate sample outliers.
Surrogates: 70% to 130% recovery	Yes	There were no surrogate recovery outliers in any of the QC1 reports including Primary: EM1917734; Secondary: ES1935030
Analysis holding time outliers	Yes	No hold-time outliners exist for any of the QC1 reports including Primary: EM1917734; Secondary: ES1935030
Quality Control Sample Frequency Outliers	No	There were quality control sample frequency outliers in the QC1 report for the Primary batch (EM1907730) attributed to PHH's and TRH's; No frequency outliers exist for the Secondary sample: ES1935030

6 FIELD INVESTIGATION FINDINGS

6.1 Geological Interpretation

In general, the Mineral Resources Tasmania (MRT) geological mapping was consistent with the ground conditions encountered during the investigation. All boreholes were drilled through concrete of variable thickness into underlying dark brown to dark grey Sandy CLAY fill material to depths of up to 1.0 m. The only variation was Silty SAND fill present in BH04 overlying the Sandy CLAY material. Natural soils overlying the mudstone bedrock comprised of yellow/grey Sandy CLAY. The mudstone varied in depth from 0.4 m depth (BH06) through to 2.6 m depth (BH04). As a rule, typically only 100 mm of mudstone could be drilled at the site although a couple of the holes were drilled up to 1.0 m into the mudstone. For full borehole logs see Appendix 10.

6.1.1 Grain Class Interpretation

Grain size classifications are applied to all soils at the site to determine threshold screening level concentrations for hydrocarbons 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. The corresponding depth class from which the sample is collected is also shallowed based on the renewed basement depth.

Table 8 provides a summary of the grain class averages for material overlying the sample.

Table 8 Summary of Grain Class Based on USCS Classification – in TP1 and TP2

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	
BH01 0.5-0.6	3.9	<																		NA	0.1	1.0	1.0	CLAY	CI
BH01 1.5-1.6	3.9	<																		NA	0.1	1.0	1.0	CLAY	CL
BH01 2.5-2.6	3.9	<																		NA	0.1	1.0	1.0	CLAY	Rock
BH02 0.5-0.6	4.0	<																		NA	0.1	1.0	1.0	CLAY	CI
BH02 1.5-1.6	4.0	<																		NA	0.1	1.0	1.0	CLAY	CL
BH02 2.3-2.4	4.0	<																		NA	0.1	1.0	1.0	CLAY	Rock
BH03 0.5-0.6	3.9	<																		NA	0.1	1.0	1.0	CLAY	CI
BH03 1.5-1.6	3.9	<																		NA	0.1	1.0	1.0	CLAY	CL
BH04 0.5-0.6	4.0	<																		NA	0.1	1.0	1.0	CLAY	SM
BH04 1.5-1.6	4.0	<																		NA	0.1	1.0	1.0	CLAY	CL
BH04 2.5-2.6	4.0	<																		NA	0.1	1.0	1.0	CLAY	CL
BH05 0.5-0.6	3.9	<																		NA	0.1	1.0	1.0	CLAY	SM
BH05 1.2-1.3	3.9	<																		NA	0.1	1.0	1.0	CLAY	CI
BH06 0.4-0.5	2.9	<																		NA	0.1	1.0	1.0	CLAY	Rock
BH07 0.5-0.6	3.8	<																		NA	0.1	1.0	1.0	CLAY	Rock
BH07 1.3-1.4	3.8	<																		NA	0.1	1.0	1.0	CLAY	Rock
BH08 0.5-0.6	4.2	<																		NA	0.1	1.0	1.0	CLAY	CL
BH09 0.5-0.6	4.2	<																		NA	0.1	1.0	1.0	CLAY	CL

* 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"

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 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 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 Ecological Investigation Levels (EIL's) limits presented in Table 9.

Table 9 Summary of Soil Investigation Limits Considered at the Site based in NEPM ASC (2013)

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
- 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 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 scenario applied was commercial/ industrial land use guidelines because it was the best fit for current and future land use of the site.

7.4 Findings

7.4.1 Ecological Screening Levels

Laboratory analytical results for soil are presented in Appendix 11. Table 10 summaries all soil analytical results against relevant ESLs guideline limits for urban residential / public open spaces land use. Concentrations which exceed laboratory limits of reporting (LOR) would be highlighted in bold. ESL exceedances would be highlighted with a coloured cell. Samples within the proposed excavation zone are marked with an X. There were no hydrocarbon detections and no risk to ecological receptors identified.

Table 10 Summary of Soil Analytical Results Compared with Ecological Screening Level's for urban residential 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												
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
BH01 0.5-0.6 X	21/10/19	F	URBAN	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100
BH01 1.5-1.6 X	21/10/19	F	URBAN	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100
BH01 2.5-2.6 X	21/10/19	C	URBAN	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100
BH02 0.5-0.6 X	21/10/19	F	URBAN	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100
BH02 1.5-1.6 X	21/10/19	F	URBAN	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100
BH02 2.3-2.4 X	21/10/19	C	URBAN	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100
BH03 0.5-0.6 X	21/10/19	F	URBAN	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100
BH03 1.5-1.6 X	21/10/19	F	URBAN	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100
BH04 0.5-0.6 X	21/10/19	C	URBAN	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100
BH04 1.5-1.6 X	21/10/19	F	URBAN	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100
BH04 2.5-2.6 X	21/10/19	F	URBAN	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100
BH05 0.5-0.6 X	21/10/19	C	URBAN	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100
BH05 1.2-1.3 X	21/10/19	F	URBAN	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100
BH06 0.4-0.5 X	21/10/19	C	URBAN	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100
BH07 0.5-0.6 X	21/10/19	C	URBAN	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100
BH07 1.3-1.4 X	21/10/19	C	URBAN	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100
BH08 0.5-0.6 X	21/10/19	F	URBAN	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100
BH09 0.5-0.6 X	21/10/19	F	URBAN	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100

7.4.2 Ecological Investigation Levels

Laboratory analytical results are presented in Appendix 11. Table 11 compares all soil analytical results against relevant ecological investigation limits (EIL's) for urban residential / public open spaces land use. Concentrations which exceeded laboratory LOR are detailed in the table. EIL exceedances would be highlighted with a coloured cell and samples within the proposed excavation zone are marked with an X. There was a single EIL guideline exceedances for copper in BH07 0.5-0.6 assessed on the basis of an inferred soil pH of 4.5, based on the cation exchange capacity approach, an exceedance was not identified.

Table 11 Soil Analytical Results Compared Against Ecological Investigation Levels for urban residential land use

NEPM Ecological Investigation Levels for Soil						Copper (CEC)	Copper (pH)	Nickel	Zinc	Chromium III	Lead	Arsenic	Naphthalene
Bold - Indicates LOR Exceedances X - Indicates Sample Withiin Inferred Excavation													
Colour Shading - Indicates ESL 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)	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
BH01 0.5-0.6 X	21/10/19	URBAN	35	4.5 (3)	F	15	15	7	9	7	<5	<5	<1
BH01 1.5-1.6 X	21/10/19	URBAN	35	4.5 (3)	F	7	7	7	27	3	5	<5	<1
BH01 2.5-2.6 X	21/10/19	URBAN	10	4.5 (3)	C	<5	<5	8	36	5	6	<5	<1
BH02 0.5-0.6 X	21/10/19	URBAN	35	4.5 (3)	F	28	28	20	19	13	<5	<5	<1
BH02 1.5-1.6 X	21/10/19	URBAN	35	4.5 (3)	F	6	6	13	30	3	7	<5	<1
BH02 2.3-2.4 X	21/10/19	URBAN	10	4.5 (3)	C	<5	<5	10	39	5	<5	<5	<1
BH03 0.5-0.6 X	21/10/19	URBAN	35	4.5 (3)	F	45	45	33	37	22	<5	<5	<1
BH03 1.5-1.6 X	21/10/19	URBAN	35	4.5 (3)	F	15	15	23	25	8	11	<5	<1
BH04 0.5-0.6 X	21/10/19	URBAN	15	4.5 (3)	C	<5	<5	<2	<5	<2	<5	<5	<1
BH04 1.5-1.6 X	21/10/19	URBAN	35	4.5 (3)	F	<5	<5	10	43	4	8	<5	<1
BH04 2.5-2.6 X	21/10/19	URBAN	35	4.5 (3)	F	<5	<5	6	28	4	9	<5	<1
BH05 0.5-0.6 X	21/10/19	URBAN	15	4.5 (3)	C	<5	<5	<2	14	2	<5	<5	<1
BH05 1.2-1.3 X	21/10/19	URBAN	35	4.5 (3)	F	18	18	16	64	10	65	<5	<1
BH06 0.4-0.5 X	21/10/19	URBAN	10	4.5 (3)	C	<5	<5	32	56	3	17	<5	<1
BH07 0.5-0.6 X	21/10/19	URBAN	10	4.5 (3)	C	106	106	62	26	4	<5	<5	<1
BH07 1.3-1.4 X	21/10/19	URBAN	10	4.5 (3)	C	13	13	35	48	<2	8	<5	<1
BH08 0.5-0.6 X	21/10/19	URBAN	35	4.5 (3)	F	9	9	23	29	8	6	<5	<1
BH09 0.5-0.6 X	21/10/19	URBAN	35	4.5 (3)	F	11	11	5	10	10	<5	<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

Note: where rock materil is identified, the soil texture class by default is defined as 'coarse'"

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:

- Onsite excavation works which may include basement carpark and deep foundations. Receptors include onsite commercial contractors, offsite residential receptors as well as sensitive land use and recreational receptors;
- Proposed future onsite residential land users which may be exposed to potential shallow soil impact in non-paved areas of the site – not likely given the entire site will be sealed by a concrete carpark;
- Trench workers repairing or building services (typically to 1 m bgs) as assessed against commercial worker guidelines for dermal contact and HIL's.

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 centre, preschool, primary school or aged care facility in which case land use Class A is applicable;
- The proportion 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 12.

Table 12 Summary of Land Use Spatial and Temporal Setting for Determining Exposure Risk

Soil Bores	Construction Phase	Location	Land Use	Pathway*	Land Use Class
All	During	Site	Commercial contractors	ALL	D
			Trench workers	ALL	D & Standard
	Post	Site	Restricted assess – Commercial workers	ALL	D

* Pathways:
DC – Dermal Contact – HSL Trench Worker Guidelines (CRC CARE 2013)
DI – Dust Inhalation - HIL Guidelines (NEPM ASC 2013)
SI – Soil Ingestion - HIL Guidelines (NEPM ASC 2013)
ALL – All of above

8.2 Findings

8.2.1 Dermal Contact - Petroleum Hydrocarbons

Laboratory analytical results are presented in Appendix 11.

Table 13 presents soil hydrocarbon analytical results compared against CRC CARE (Friebel & Nadebaum, 2011) Health Screening Levels (HSL) guidelines for assessing dermal contact risk HSL D commercial workers, Trench workers. Concentrations which exceeded laboratory LOR would be highlighted in bold. HSL exceedances would be highlighted with a coloured cell indicating the highest HSL land used class which is exceeded. Samples within the proposed excavation zone are marked with an X.

There were no hydrocarbon detections in any of the samples and therefore no guideline exceedances and no dermal contact risk to workers during the site redevelopment.

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
HIDE ROW		120	18000	5300	15000	1900	5100	3800	5300	7400
HIDE ROW		430	99000	27000	81000	11000	26000	20000	27000	38000
HSL C Recreational		120	18000	5300	15000	1900	5100	3800	5300	7400
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									
21/10/2019	BH01 0.5-0.6 X	<0.2	<0.5	<0.5	<0.5	<1	<10	<50	<100	<100
21/10/2019	BH01 1.5-1.6 X	<0.2	<0.5	<0.5	<0.5	<1	<10	<50	<100	<100
21/10/2019	BH01 2.5-2.6 X	<0.2	<0.5	<0.5	<0.5	<1	<10	<50	<100	<100
21/10/2019	BH02 0.5-0.6 X	<0.2	<0.5	<0.5	<0.5	<1	<10	<50	<100	<100
21/10/2019	BH02 1.5-1.6 X	<0.2	<0.5	<0.5	<0.5	<1	<10	<50	<100	<100
21/10/2019	BH02 2.3-2.4 X	<0.2	<0.5	<0.5	<0.5	<1	<10	<50	<100	<100
21/10/2019	BH03 0.5-0.6 X	<0.2	<0.5	<0.5	<0.5	<1	<10	<50	<100	<100
21/10/2019	BH03 1.5-1.6 X	<0.2	<0.5	<0.5	<0.5	<1	<10	<50	<100	<100
21/10/2019	BH04 0.5-0.6 X	<0.2	<0.5	<0.5	<0.5	<1	<10	<50	<100	<100
21/10/2019	BH04 1.5-1.6 X	<0.2	<0.5	<0.5	<0.5	<1	<10	<50	<100	<100
21/10/2019	BH04 2.5-2.6 X	<0.2	<0.5	<0.5	<0.5	<1	<10	<50	<100	<100
21/10/2019	BH05 0.5-0.6 X	<0.2	<0.5	<0.5	<0.5	<1	<10	<50	<100	<100
21/10/2019	BH05 1.2-1.3 X	<0.2	<0.5	<0.5	<0.5	<1	<10	<50	<100	<100
21/10/2019	BH06 0.4-0.5 X	<0.2	<0.5	<0.5	<0.5	<1	<10	<50	<100	<100
21/10/2019	BH07 0.5-0.6 X	<0.2	<0.5	<0.5	<0.5	<1	<10	<50	<100	<100
21/10/2019	BH07 1.3-1.4 X	<0.2	<0.5	<0.5	<0.5	<1	<10	<50	<100	<100
21/10/2019	BH08 0.5-0.6 X	<0.2	<0.5	<0.5	<0.5	<1	<10	<50	<100	<100
21/10/2019	BH09 0.5-0.6 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 11. Table 14 presents the soil analytical results 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. Concentrations which exceeded laboratory LOR would be presented in bold, metals are simply reported. HIL exceedances would be highlighted with a coloured cell indicating the highest HIL land used class which is exceeded. Samples within the proposed excavation zone are marked with an X.

There were no HIL D *commercial land use*, exceedances at the site. A dust inhalation and soil ingestion risk has not been identified based on the following receptors investigated:

- Commercial contractors developing the site;
- Future site users (residential or commercial) on the basis there is limited opportunity for access to the soil; or
- Future onsite commercial workers.

Table 14 Soil Analytical Results Compared Against NEPM (2013) Health Investigation Limit Guidelines

Bold - Indicates LOR Exceedance in Non Metalic Compounds		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		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	☐ HIL B ☐ HIL A ☐ HIL C ☑ HIL D	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	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
HIL D Commerial/Industrial		3000		500	300000	900		4000	240000	1500	60000	6000	10000		400000	730																	4000	40
Sample date:	Sample ID																																	
21/10/2019	BH01 0.5-0.6 X	<5	40	<1	<50	<1	7	7	15	<5	38	7	<5	42	9	<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
21/10/2019	BH01 1.5-1.6 X	<5	160	<1	<50	<1	3	4	7	5	397	7	<5	10	27	<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
21/10/2019	BH01 2.5-2.6 X	<5	30	<1	<50	<1	5	4	<5	6	306	8	<5	12	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
21/10/2019	BH02 0.5-0.6 X	<5	70	<1	<50	<1	13	25	28	<5	342	20	<5	75	19	<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
21/10/2019	BH02 1.5-1.6 X	<5	940	<1	<50	<1	3	7	6	7	900	13	<5	21	30	<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
21/10/2019	BH02 2.3-2.4 X	<5	20	<1	<50	<1	5	11	<5	<5	232	10	<5	11	39	<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
21/10/2019	BH03 0.5-0.6 X	<5	120	<1	<50	<1	22	103	45	<5	754	33	<5	73	37	<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
21/10/2019	BH03 1.5-1.6 X	<5	70	<1	<50	<1	8	12	15	11	1340	23	<5	31	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
21/10/2019	BH04 0.5-0.6 X	<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
21/10/2019	BH04 1.5-1.6 X	<5	60	<1	<50	<1	4	8	<5	8	366	10	<5	15	43	<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
21/10/2019	BH04 2.5-2.6 X	<5	40	<1	<50	<1	4	4	<5	9	337	6	<5	9	28	<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
21/10/2019	BH05 0.5-0.6 X	<5	20	<1	<50	<1	2	<2	<5	<5	12	<2	<5	<5	14	<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
21/10/2019	BH05 1.2-1.3 X	<5	270	<1	<50	<1	10	12	18	65	146	16	<5	21	64	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
21/10/2019	BH06 0.4-0.5 X	<5	730	2	<50	<1	3	35	<5	17	110	32	<5	8	56	<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
21/10/2019	BH07 0.5-0.6 X	<5	170	2	<50	1	4	188	106	<5	712	62	<5	141	26	<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
21/10/2019	BH07 1.3-1.4 X	<5	1960	<1	<50	2	<2	50	13	8	10200	35	<5	27	48	<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
21/10/2019	BH08 0.5-0.6 X	<5	250	<1	<50	<1	8	33	9	6	50	23	<5	16	29	<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
21/10/2019	BH09 0.5-0.6 X	<5	10	<1	<50	<1	10	7	11	<5	12	5	<5	40	10	<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

9 PVI ASSESSMENT – HSL's (TRENCH & INDOOR VAPOUR)

Given that all soil tested at the site is proposed to be excavated, an assessment of vapour intrusion risk needs to be conducted based on what soils have been tested at the site. As there was no detection of hydrocarbons in any soil samples (including around the underground storage tank), it can be concluded that there is a low risk that vapours may be present from onsite activities.

As groundwater was not intercepted in any of the deeply drilled diamond holes at the site (11 m maximum depth), screening depths are inferred to be greater than 7 m below the proposed basement level and outside of the potential vapour intrusion screening depth criteria.

It may therefore be concluded that the petroleum vapour intrusion risk to development workers and future site users is low.

10 SOIL DISPOSAL ASSESSSMENT

10.1 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 15:

- (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 15 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*.

10.2 Findings

The soil samples were compared against IB105 guidelines for soil disposal, see Table 16. Most of the soil was classified as Level 1 Material – Clean Fill.

The following samples exceeded Level 1 guidelines:

- Barium in natural soil and rock in soil collected from BH02, BH06 & BH07, are typical occurrences for residual soil derived from Triassic sediments throughout greater Hobart;
- Beryllium is borderline Level 1/Level 2 within borehole BH06 and BH07;
- Detections of Copper marginally exceeding Level 1 were detected in BH07;
- Cobalt detections in BH03 and BH07;
- Moderately high concentrations of Manganese in all natural and fill samples may be attributed to naturally occurring marine elements within the Triassic sediments;
- Nickel in BH07;
- The unusual signature of nickel, cobalt and copper in BH07 may be naturally occurring as these elements typically occur together in serpentinite soil which is derived from ultramafic rocks such as a basalt. The basalt may have been locally derived. There is no evidence to suggest BH07 0.5 to 0.6 comprises fill material. The origins are inconclusive without further assessment.
- If the natural background barium and manganese are excluded from the assessment, on average, the bulk material is considered Level 1.

Table 16 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
21/10/2019	BH01 0.5-0.6 X	<5	40	<1	<1	7	15	7	<5	38	<0.1	7	<5	9	<0.5	<10	<50	<0.5	<0.2	<0.5	<0.5	<0.5
21/10/2019	BH01 1.5-1.6 X	<5	160	<1	<1	3	7	4	5	397	<0.1	7	<5	27	<0.5	<10	<50	<0.5	<0.2	<0.5	<0.5	<0.5
21/10/2019	BH01 2.5-2.6 X	<5	30	<1	<1	5	<5	4	6	306	<0.1	8	<5	36	<0.5	<10	<50	<0.5	<0.2	<0.5	<0.5	<0.5
21/10/2019	BH02 0.5-0.6 X	<5	70	<1	<1	13	28	25	<5	342	<0.1	20	<5	19	<0.5	<10	<50	<0.5	<0.2	<0.5	<0.5	<0.5
21/10/2019	BH02 1.5-1.6 X	<5	940	<1	<1	3	6	7	7	900	<0.1	13	<5	30	<0.5	<10	<50	<0.5	<0.2	<0.5	<0.5	<0.5
21/10/2019	BH02 2.3-2.4 X	<5	20	<1	<1	5	<5	11	<5	232	<0.1	10	<5	39	<0.5	<10	<50	<0.5	<0.2	<0.5	<0.5	<0.5
21/10/2019	BH03 0.5-0.6 X	<5	120	<1	<1	22	45	103	<5	754	<0.1	33	<5	37	<0.5	<10	<50	<0.5	<0.2	<0.5	<0.5	<0.5
21/10/2019	BH03 1.5-1.6 X	<5	70	<1	<1	8	15	12	11	1340	<0.1	23	<5	25	<0.5	<10	<50	<0.5	<0.2	<0.5	<0.5	<0.5
21/10/2019	BH04 0.5-0.6 X	<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
21/10/2019	BH04 1.5-1.6 X	<5	60	<1	<1	4	<5	8	8	366	<0.1	10	<5	43	<0.5	<10	<50	<0.5	<0.2	<0.5	<0.5	<0.5
21/10/2019	BH04 2.5-2.6 X	<5	40	<1	<1	4	<5	4	9	337	<0.1	6	<5	28	<0.5	<10	<50	<0.5	<0.2	<0.5	<0.5	<0.5
21/10/2019	BH05 0.5-0.6 X	<5	20	<1	<1	2	<5	<2	<5	12	<0.1	<2	<5	14	<0.5	<10	<50	<0.5	<0.2	<0.5	<0.5	<0.5
21/10/2019	BH05 1.2-1.3 X	<5	270	<1	<1	10	18	12	65	146	0.5	16	<5	64	<0.5	<10	<50	<0.5	<0.2	<0.5	<0.5	<0.5
21/10/2019	BH06 0.4-0.5 X	<5	730	2	<1	3	<5	35	17	110	<0.1	32	<5	56	<0.5	<10	<50	<0.5	<0.2	<0.5	<0.5	<0.5
21/10/2019	BH07 0.5-0.6 X	<5	170	2	1	4	106	188	<5	712	<0.1	62	<5	26	<0.5	<10	<50	<0.5	<0.2	<0.5	<0.5	<0.5
21/10/2019	BH07 1.3-1.4 X	<5	1960	<1	2	<2	13	50	8	10200	<0.1	35	<5	48	<0.5	<10	<50	<0.5	<0.2	<0.5	<0.5	<0.5
21/10/2019	BH08 0.5-0.6 X	<5	250	<1	<1	8	9	33	6	50	<0.1	23	<5	29	<0.5	<10	<50	<0.5	<0.2	<0.5	<0.5	<0.5
21/10/2019	BH09 0.5-0.6 X	<5	10	<1	<1	10	11	7	<5	12	<0.1	5	<5	10	<0.5	<10	<50	<0.5	<0.2	<0.5	<0.5	<0.5
Averaging		<5	300	<1	<1	6	25	32	10	875	<0.1	20	<5	30	<0.5	<10	<50	<0.5	<0.2	<0.5	<0.5	<0.5

11 CONCEPTUAL SITE MODEL

It should be noted that the area onsite investigated was limited to the areas tested, which reflects the footprint of the proposed new sewer pump station. If these locations change additional soil testing may be required.

11.1 Potential & Identified Sources of Contamination

11.1.1 Potential Onsite Contamination

The primary potential sources of contamination includes the following:

- Fill material beneath the existing pavement; and
- Existing 4.5 kL UST & associated fuel lines

GES is not aware of any other potentially contaminating activities at the site.

11.1.2 Potential Primary Offsite Contamination

Potential primary offsite contaminating activities may have occurred at the following location:

- Potential oil/fuel leaks on upgradient site at 27 to 35 Tasma Street (which appeared to be unpaved for a significant timespan; and
- Upgradient fuel storage warehouse at 48 Burnett Street;

11.1.3 Potential Secondary Onsite Contamination

- Soil and groundwater which may have been impacted by upgradient sources including:
  - fuel stored on the neighbouring site at 48 Burnett Street; and
  - fuel spills from 27 to 35 Tasma Street.
- Soil and groundwater which may have been impacted by onsite sources including:
  - Fill material beneath the existing pavement; and
  - Existing 4.5 kL UST & associated fuel lines

11.1.4 Identified Primary Sources

Although fill has been confirmed on site no confirmed contamination source has been identified. A single 4.5 kL UST has been identified onsite. The tank, former bowser and fuel lines may have been a primary source of contamination.

11.1.5 Identified Secondary Sources

Slightly elevated levels of metals have been identified but they do not exceed guideline limits for human health risk at the site. No ESL exceedances have been identified for assessing risk from hydrocarbon impact although a single EIL exceedance has been identified when assessing copper in BH07 0.5-0.6 m against screening criteria for pH 4.5 soils. Cation exchange capacity criteria were not exceeded for the same soil sample indicating a minor exceedance.

11.2 Potential Receptors

Although potential receptors may exist onsite and offsite, given that the threshold criteria for identified potential receptors are not exceeded, a risk to potential receptors has not been identified and transport pathways to not need to be considered in this assessment.

12 CONCLUSIONS

12.1 Desktop Assessment

The following conclusions were made from the desktop assessment:

- The site is inferred to be underlain with fill materials, sandy clay sediments (possibly residual), and residually weathered Triassic aged mudstone bedrock;
- Given the localised drainage divide to the west, the nearest upgradient influence of groundwater is inferred to be from within 50 m southwest, and west of the site;
- The desktop assessment has focused primarily on the site, as well as properties between 48 and 58 Burnett Street and 27 to 35 Tasma street;
- Workplace Standards dangerous goods records have confirmed field observations of a single 4.5 kL underground storage tank on the site;
- Council records have identified:
    - an upgradient fuel storage warehouse at 48 Burnett Street,
    - have confirmed the presence of Caltex operating the site during the period the UST was commissioned; and
    - Have identified potential contaminating activities on upgradient 27 to 35 Tasma Street site
- Historical aerial photos have identified a bulk equipment storage yard at 27 to 35 Tasma Street and unpaved surfaces for a significant timespan indicating a potential primary source of contamination;
- Areas of concern therefore include:
    - Groundwater downgradient of:
        - 27 to 35 Tasma Street historical unpaved storage yard;
        - 48 Burnett Street fuel storage warehouse; and
        - The onsite UST tank.
    - Soil around:
        - impacted groundwater;
        - The UST; and
        - Fill material onsite
- The following contaminants of potential concern (COPC) are associated with imported fill and upgradient service station: Total Petroleum/Recoverable Hydrocarbons (TPH/TRH); Mono Aromatic hydrocarbons: Benzene, Toluene, Ethylbenzene, Xylene (BTEX); Polycyclic Aromatic Hydrocarbons (PAH); Heavy Metals and Asbestos.

12.2 Soil Assessment Findings

The following conclusions have been made from the soil investigation based on the sampling around AEC's and based on analysed COPC's and based on the nominated threshold limit criteria for assessing risks from proposed site development works and proposal:

- Environment: There were no hydrocarbons detections and no guideline exceedances for Ecological Screening Level guidelines. There was a single low-level detection of copper exceeding Ecological Investigation Level guidelines. No risk from contamination to ecological receptors was identified;
- Human Health: There were no Health Screening level exceedances for assessing petroleum vapour intrusion risk and dermal contact risk. There were no Health investigation level exceedances for assessing dust inhalation and soil ingestion risks; and
- Excavated Soil Management: The soil samples were compared against IB105 guidelines for soil disposal. Most of the soil was classified as Level 1 Material – Clean Fill. Five (5) of the eighteen (18) samples had slightly elevated levels of metals including barium, beryllium, copper, cobalt, manganese and nickel which classified the material as Level 2 material. GES recommends that all soil excavated for the site is stockpiled, sampled by a suitably qualified and experienced environmental consultant and results compared against *IB105* guideline limits for appropriate soil disposal. Where necessary, it is to be transported to a Level 2 waste facility (Copping). A permit to transport the waste (obtained through the EPA) will be required.

13 RECOMMENDATIONS

GES recommends the following:

- Although an ecological risk has not been identified, a soil and water management plan (SWMP) should be put in place for general sediment control to reduce loadings into the waterways.

13.1 Statement of Suitability

The findings from the invasive soil investigation can confirm that there is no evidence that the land is contaminated in terms of evaluated risks to human health or the environment.

Therefore, providing the above recommendations are followed in relation to the environment, GES can confirm that the planned excavation works and change of use will not adversely impact on human health or the environment.

No additional contamination remediation or management measures will be required during the site redevelopment works.

Yours faithfully,

Kris Taylor BSc (Hons)

Environmental & Engineering Geologist

14 REFERENCES

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AS/NZS 1726:1993. Geotechnical Site Investigations. Standards Australia, 1993.

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15 LIMITATIONS STATEMENT

This ESA Report has been prepared in accordance with the scope of services between Geo-Environmental Solutions Pty. Ltd. (GES) and Report for BPSM Architects ('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.

Note If the design of the proposed sewer pump station is altered than there may be a requirement to assess the soil results against alternative guidelines or conduct further site investigations.

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.

Mr Kris Taylor Bsc (Hons)

- Senior Environmental & Engineering Geologist
- Honours in Environmental Geology at the University of Tasmania in 1998

20 years' experience in environmental contamination assessments and hydrogeology (including honours in mine site tailing pollution assessment). Including 15 years' experience in asbestos assessment.

Ms Sarah Joyce BSc (Hons)

- Environmental Geologist
- 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

Mr Aaron Plummer (Cert. IV)

- Soil Technician
- 5 years' experience in hydrocarbon and heavy metal contamination sampling of soils and groundwater.

GES STAFF – WITH CONTAMINATED SITES EXPERIENCE

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 Year experience in contamination assessment and reporting of soils and groundwater.

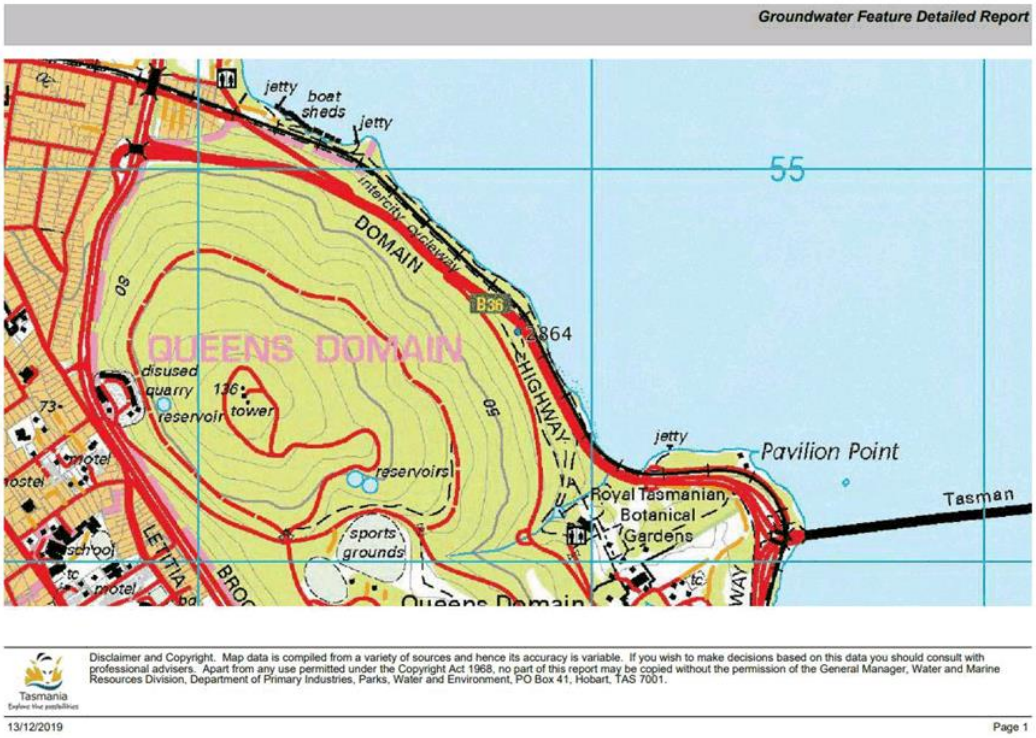
Ms Peri Lucas B.Agr.Sc (Hons)

- Soil Scientist
- 2 Year experience in contamination assessment and reporting of soils and groundwater.

Appendix 2 Proposed Site Development Plans

Proposed basement car park excavation to 40.17 m AHD

Appendix 3 Surrounding Bore Data



Groundwater Feature Detailed Report

Identification

Feature id: 2864 **Feature type:** Bore

Location

Locality: Hobart
Easting: 526814 **Datum:** GDA94
Northing: 5254583 **Accuracy:** 200
Ground level (m ASL):

Construction

Date drilled: 21/02/1983
Drilling company: Mines Department (=Tasmania Department of Mines)
Depth (metres): 54.00
Initial yield (L/sec): 0.23
Initial EC (µS/cm):

Bore diameters

From (m)	To (m)	Diameter (mm)	Drilling technique
0.0	54.0	54.00	Air Percussion (Rotary air - R)

Casings

From (m)	To (m)	Inside diameter (mm)	Outside diameter (mm)	Material
NA				

Screens

From (m)	To (m)	Inlet type
NA		

Seals

From (m)	To (m)	Material type
NA		

Geological / Hydrogeological Information

Lithological Log

From (m)	To (m)	Lithological description
0.0	3.0	soil and boulders
3.0	54.0	dolerite

Depth to water struck

Date	From (m)	To (m)	Cumulative yield
21/02/1983	40.0		0.23

Main aquifer geology: Jurassic Dolerite
Final TDS (mg/L): 1800

Standing Water Levels

Standing water levels

Date	SWL (metres)
NA	

13/12/2019 Page 2

Groundwater Feature Detailed Report

Current status

Last recorded statuses

Type	Value	Date recorded
function	Unknown	21/02/1983

Appendix 4 EPA Search & Dangerous Goods Records

Level 7, 134 Macquarie Street, Hobart TAS
GPO Box 1550, Hobart, TAS 7001 Australia

Enquiries: Contaminated Sites Unit
Phone: (03) 6165 4599
Email: contaminatedsites@epa.tas.gov.au
Web: www.epa.tas.gov.au
Our Ref: (EN-EM-AV-100706_39:M560226) sma

EPA TASMANIA
ENVIRONMENT PROTECTION AUTHORITY

29 November 2019

Ms Sarah Joyce
Geo Environmental Solutions
sjoyce@geosolutions.net.au

Dear Ms Joyce

PROPERTY INFORMATION REQUEST
40 Burnett Street, North Hobart Certificate of Title: 211936/1
42-44 Burnett Street, North Hobart Certificate of Title: 228032/1

On 21 October 2019, the Contaminated Sites Unit received your Property Information Request relating to the land referred to above ('the Sites'). A search of relevant databases and records has been undertaken.

No records relating to contamination or potentially contaminating activities at **40 Burnett Street** were found.
Historical WorkSafe Tasmania [WST] file S291 (1960-1988) refers to dangerous goods being stored at **42-44 Burnett Street** in underground storage tanks [UST]. Business names associated with this record are "Stokes and Hammond Pty Ltd", Caltex and "Lifeline" as a leasee.

No further records regarding the Sites were found, however records relating to properties within 150m of the Sites were identified.

- Jan 2018 - EPA received notification of a workplace incident which resulted in the loss of coolant oil from a transmission cable near the corner of Argyle and Burnett Streets.
- **16-18 Lefroy St** and **45a Burnett St** (former plant nursery): EPA has several archive records regarding the decontamination works around 1992-1994: The land is now residential units.
    - WST record regarding UST at 16-18 Lefroy Street: file reference is A241 (1971):
- **32 Burnett Street** 7 April 2011, EPA acknowledged receipt of a underground petroleum storage systems (UPSS) decommissioning form for this property.
    - WST record IS67155-14 (1990-1991) refers to dangerous goods storage in UST.
- **267 Argyle St** (including 214-220 Campbell Street): hosts one active under UPSS total capacity of 20000L. No record of contamination was found during the search; however the ongoing storage of fuel is considered a potentially contaminating activity. There are several historic WST files relating to UST at this property
    - 267 Argyle St WST File C90 1949-1976
    - 214-220 Campbell & 267 Argyle St WST File R237 & R21A 1936-1973
- **285 Elizabeth St** previously hosted a BP Service Station, which ceased operating in 2010. All UPSS were removed and site remediation works commenced in 2011. In a letter dated 5 Nov 2012, The Director EPA accepted the consultant's report conclusions

- *Former BP Service Station, 285 Elizabeth St, North Hobart, Environmental Status Assessment Report Issued 23 August 2012.* Prepared by Environmental Management and Consulting.

- **66 Burnett St and 281a Elizabeth Street** are currently being redeveloped
  - EPA has recently received several environmental reports relating to abandoned UST and requests to dispose of 50m³ of contaminated soil to the Copping Waste Disposal site
  - WST File G327 (1954-1972) relates to dangerous goods storage in UST at 66 Burnett St.

WorkSafe Tasmania records also indicate that dangerous goods were stored in UST at the following properties

• 48 Burnett Street	WST File 1066	1960-1989
• 56-58 Burnett Street	WST File L266	1963-1985
• 25 Tasma Street	WST File T246	1970
• 248-250 Argyle Street	WST File S53	1936-1965

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.

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.

2

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 has been 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: miran@geosolutions.net.au

Attachment: Invoice

3

Search Results (Environmentally Relevant Activity)

Site ID: 1692
Address: 42-44 Burnett St
North Hobart 7000
File Number: S291
Held By: Workplace Standards Tasmania
File From: 1960 ***To:*** 1988
Location Status: Confirmed
PID: 5658653
Comments:
Activity:
Underground Storage Tank/s

Monday, 4 November 2019 ***Page 1 of 1***

Search Results (Names Associated With Site)

Site ID: 1692
Address: 42-44 Burnett St
North Hobart 7000
File Number: S291
Held By: Workplace Standards Tasmania
File From: 1960 ***To:*** 1988
Location Status: Confirmed
PID: 5658653
Comments:
Names Associated With Site:
Lifeline (leasee)
Caltex
Stokes & Hammond Pty. Ltd.

Monday, 4 November 2019 ***Page 1 of 1***

43580

File No. S 291

DEPARTMENT OF MINES, TASMANIA

NAME OR SUBJECT: Stokes & Hammond Pty Ltd.

ADDRESS: 42-44 Burnett ST.

North Hobart.

Cancelled 2/11/58

INSPECTION REPORT - 001
KEEPING DANGEROUS GOODS

MINES
File Ref. 5291
25 AUG 1988
Doc. Ref. 2110
Action Officer: Rcip CB
Initials

FILE NO: 5291 AREA CODE ______ DATE 25-8-88

BUSINESS TRADING NAME: STOKES & HAMMOND PTY LTD

OWNER/OCCUPIER:

POSTAL ADDRESS:

LOCATION OF STORAGE: 42-44 BURNETT ST. NORTH HOBART.

Licence No. | Debtors No. A53850

APPROVAL DATE: ______ APPROVAL NO: ______ INSPECTION DATE: 25. 8. 88

TYPE OF INSPECTION : ~~APPROVAL/FOLLOW-UP~~/ROUTINE/~~NEW/ADDITIONAL~~ SUPPLIER: CALTEX

RECOMMENDED FOR LICENSING: YES/NO INSPECTOR: E. J. GARNOR

REMARKS:

EQUIPMENT ABANDONED Close File

Name of dangerous goods	Class	No. of tanks	Size of tanks	O/G O/H U/G	No. of and type of pumps	No. of cylinders drums packages	Size of cylinders drums packages
							2100 $10.00

RESUBMIT DATE: ______ TO: ______

A53850 2100

DEPARTMENT OF MINES — TASMANIA

APPLICATION FOR RENEWAL OF LICENCE

Bligh Street, Rosny Park 7018
OR
P.O. Box 56
Rosny Park 7018

DANGEROUS GOODS ACT 1976

Licence Period

LICENCE TO KEEP DANGEROUS GOODS — from 01/07/88 to 30/06/89

STOKES & HAMMOND PTY. LTD.
G.P.O. BOX 67A,
HOBART. 7001

Location of Licensed Premises
42-44 BURNETT STREET
NORTH HOBART

If a renewal is required please return this form with the prescribed fee to the above address within 30 days. If the storage has been removed please advise this department. Penalties are provided for breaches of the Act.

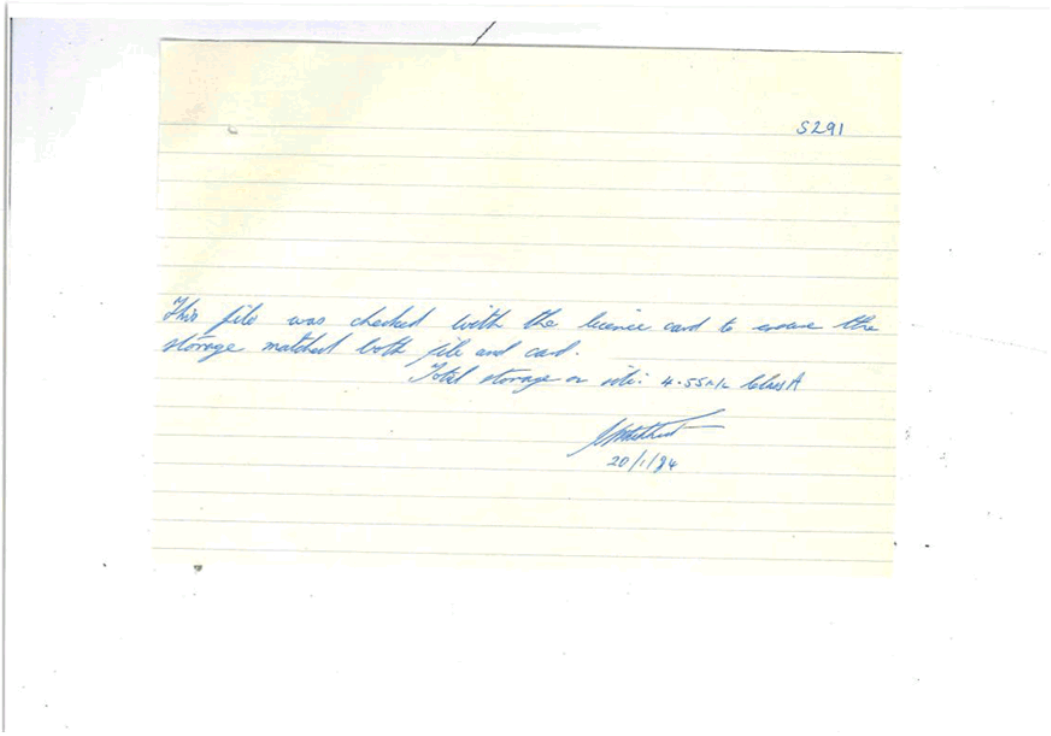
LICENCE TO KEEP DANGEROUS GOODS

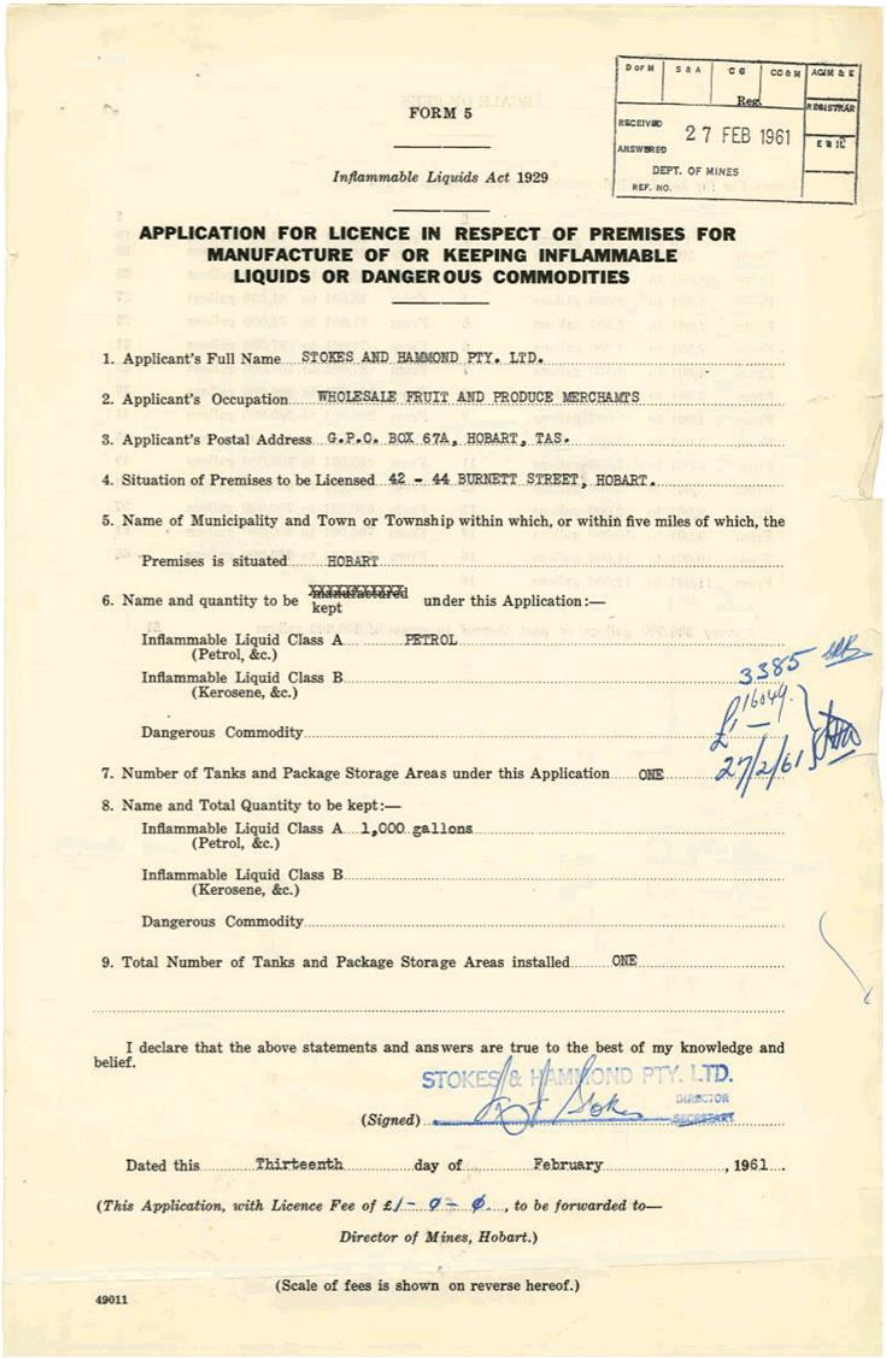
DANGEROUS GOODS	STORAGE AMOUNT (K/LTRS)	FEE	TOTAL FEE
PETROL	4.550		
	4.550	10.00	$10.00

This Premises is Leased to Lifeline & it is Not Known Whether They Need A Liscence

Any alterations see reverse side.

R. C. Thomas
CHIEF INSPECTOR OF EXPLOSIVES


S291
This file was checked with the licence card to ensure the storage matched both file and card.
Total storage on site: 4.55m³ class A
20/1/94



D of M | S & A | C G | CO & M | AGM & E
Regr.
REGISTRAR
RECEIVED 27 FEB 1961
ANSWERED
DEPT. OF MINES
REF. NO.
E & IE

FORM 5

Inflammable Liquids Act 1929

APPLICATION FOR LICENCE IN RESPECT OF PREMISES FOR MANUFACTURE OF OR KEEPING INFLAMMABLE LIQUIDS OR DANGEROUS COMMODITIES

1. Applicant's Full Name STOKES AND HAMMOND PTY. LTD.
2. Applicant's Occupation WHOLESALE FRUIT AND PRODUCE MERCHANTS
3. Applicant's Postal Address G.P.O. BOX 67A, HOBART, TAS.
4. Situation of Premises to be Licensed 42 - 44 BURNETT STREET, HOBART.
5. Name of Municipality and Town or Township within which, or within five miles of which, the Premises is situated HOBART
6. Name and quantity to be ~~manufactured~~ kept under this Application:—
   Inflammable Liquid Class A (Petrol, &c.) PETROL
   Inflammable Liquid Class B (Kerosene, &c.)
   Dangerous Commodity
   3385 1604 £1-- 27/2/61
7. Number of Tanks and Package Storage Areas under this Application ONE
8. Name and Total Quantity to be kept:—
   Inflammable Liquid Class A (Petrol, &c.) 1,000 gallons
   Inflammable Liquid Class B (Kerosene, &c.)
   Dangerous Commodity
9. Total Number of Tanks and Package Storage Areas installed ONE

I declare that the above statements and answers are true to the best of my knowledge and belief.

STOKES & HAMMOND PTY. LTD. DIRECTOR SECRETARY

(*Signed*)

Dated this Thirteenth day of February, 1961.

(*This Application, with Licence Fee of £1-0-0, to be forwarded to—*

Director of Mines, Hobart.)

(Scale of fees is shown on reverse hereof.)

49011

Department of Mines
Tasmania
Date 22 / 2 /19 61

MEMORANDUM

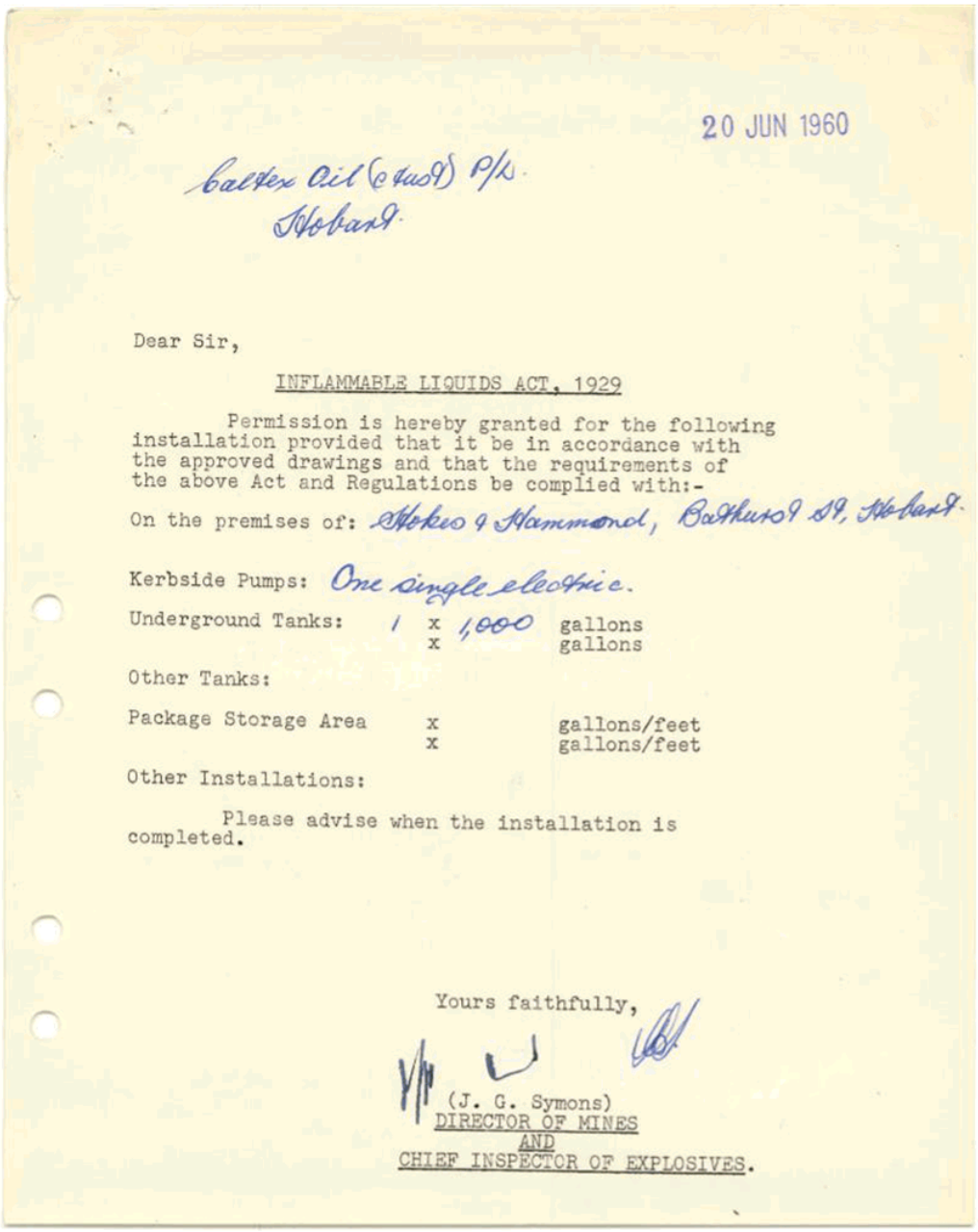
For the Director of Mines, Hobart.
From the Inspector of Explosives, Hobart.

Record of Inspection of Installation

Premises of: Stokes & Hammond,
Known as: 42-44 Burnett St
Premises at: ~~Bathurst St~~, Nth Hobart
Oil Company: Caltex.
Date of Approval: 20/6/60.
Date of Inspection: 21/2/61.
Finding: ~~Unsuitable~~)
Suitable) for Licensing
Pump Outfit ~~Package Storage Area~~:
Variation from Approval:

Application Form: Left with occupier/ ~~Forwarded herewith~~.
Amount of Fee advised: Yes/~~No~~

.....
INSPECTOR OF EXPLOSIVES



20 JUN 1960

Caltex Oil (Aust) P/L.
Hobart.

Dear Sir,

INFLAMMABLE LIQUIDS ACT, 1929

Permission is hereby granted for the following installation provided that it be in accordance with the approved drawings and that the requirements of the above Act and Regulations be complied with:-

On the premises of: Hokes & Hammond, Bathurst St, Hobart.

Kerbside Pumps: One single electric.

Underground Tanks: 1 x 1,000 gallons
x gallons

Other Tanks:

Package Storage Area x gallons/feet
x gallons/feet

Other Installations:

Please advise when the installation is completed.

Yours faithfully,

(J. G. Symons)
DIRECTOR OF MINES
AND
CHIEF INSPECTOR OF EXPLOSIVES.

RECEIVED 20 JUN 1960
ANSWERED
DEPT. OF
REF. NO.

Stencil No.142

x Insert name of owner or proprietor of premises — I x Stokes & Hammond Pty Ltd of

x Postal Address — x Burnett St North Hobart

hereby agree to CALTEX OIL (AUST.) PTY. LTD.

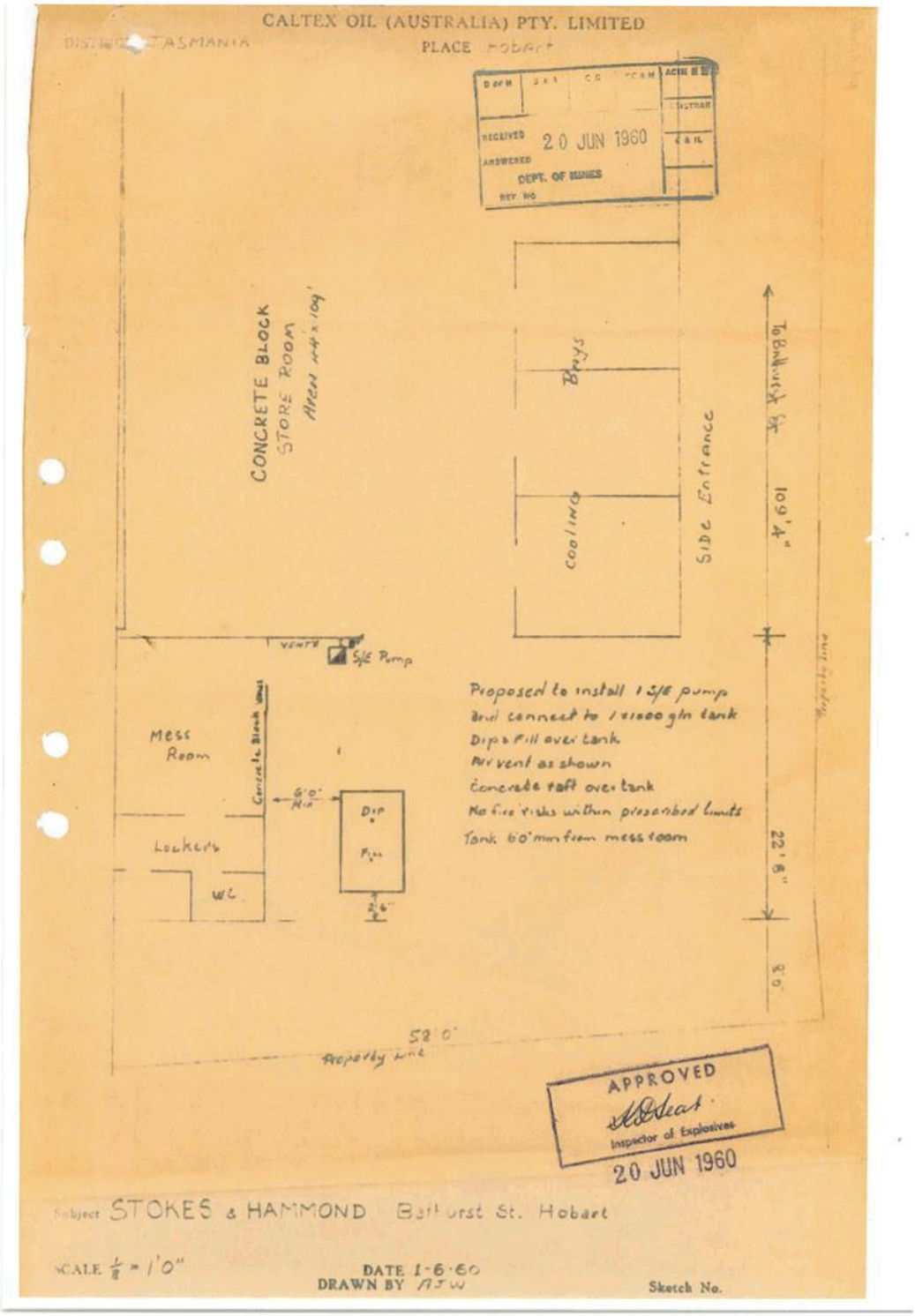
x Number and type of pump/s — installating x Single Electric Pump/s

x Number and Capacity of tanks — and x 1 x 1000 Underground tank/s

x Address of premises — at my premises situated at x Burnett Street North Hobart.

Stokes & Hammond Pty. Ltd.
Signed [signature] Director
Date

To the Chief Inspector of Explosives,
P.O. Box 177E,
HOBART.
Tasmania.


CALTEX OIL (AUSTRALIA) PTY. LIMITED
PLACE Hobart
RECEIVED 20 JUN 1960
DEPT. OF MINES
CONCRETE BLOCK STORE ROOM
Bays
Cooling
Side Entrance
To Burnett St
109'4"
S/E Pump
Proposed to install 1 S/E pump and connect to 1 x 1000 gln tank
Dips & Fill over tank
Air vent as shown
Concrete raft over tank
No fire risks within prescribed limits
Tank 60' min from mess room
Mess Room
Lockers
W.C.
Dip
Fill
22'6"
8'0"
58'0"
Property line
APPROVED
Inspector of Explosives
20 JUN 1960
Subject STOKES & HAMMOND Bathurst St. Hobart
SCALE 1/8 = 1'0"
DATE 1-6-60
DRAWN BY AJW
Sketch No.

Appendix 5 Historical Site Photographs

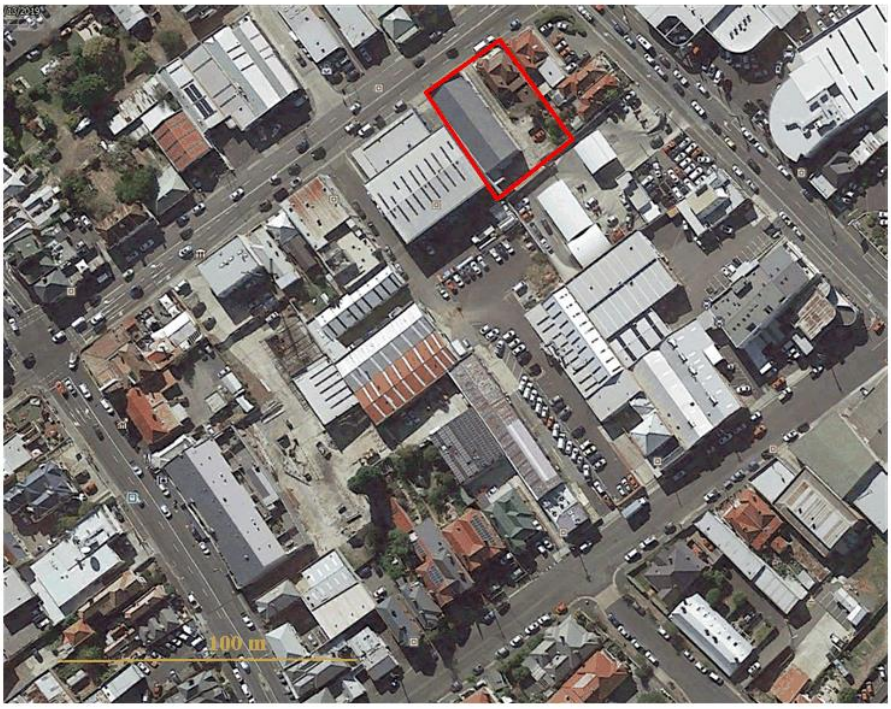


Plate 4 2019 Historical Aerial Image the Site (12th April 2019)

Plate 5 2017 Historical Aerial Image the Site (13th November 2017)

Plate 6 2003 Historical Aerial Image the Site (14th October 2003)

Plate 7 1992 Historical Aerial Photograph the Site

Plate 8 1989 Historical Aerial Photograph – investigation area

Plate 9 1984 Historical Aerial Photograph – Greater Area

Plate 10 1977 Historical Aerial Photograph – Greater Area

Plate 11 1973 Historical Aerial Photograph – Greater Area

Plate 12 1969 Historical Aerial Photograph – Greater Area

Plate 13 1965 Historical Aerial Photograph

Plate 14 1957 Historical Aerial Photograph with approximate investigation area

Plate 15 1946 Historical Aerial Photograph with approximate investigation area

Appendix 6 Site Photographs

Appendix 7 PID Calibration Record

imbros
Imbros Pty Ltd
ABN 29 009 525 053
1059 Cambridge Road, Cambridge
Tasmania Australia 7170
Phone (03) 6216 1500
Fax (03) 6216 1555
info@imbros.com.au

Calibration Test Certificate
24/07/2019

Device					
Serial Number:	590-902123		Device Type:		MiniRAE Lite
Manufacturer:	RAE Systems		Next Cal Due:		24/01/2020
Test Result	Pass				
Sensors					
Type:	Isobutelyne				
Result:	Pass				
Final Reading:	100.0 ppm				
Next Calibration Due:	24/07/2020				
Set Points					
Type:	Isobutelyne				
High Alarm:	100ppm				
Low Alarm:	50ppm				
TWA Alarm:					
STEL Alarm:					
Options					
Datalog Interval:	N/A		Unit Programmed:		N/A
H2S STEL Period:	N/A				
Test Station					
Dock Serial Number:	Z309-002181		Dock Location:		Imbros Cal Lab

	Inlet 1:	Inlet 2:	Inlet 3:	Inlet 4:	Inlet 5:
Used:	Yes	Yes	No	No	No
Concentration:	20.9 %	100ppm			
Type:	Purge	Isobutelyne			
Notes:					

Technology for Laboratory and Marine Science

imbros

Imbros Pty Ltd
1059 Cambridge Road
Cambridge TAS 7170 Australia

info@imbros.com.au
www.imbros.com.au

ABN 29 009 525 053
Ph: (03) 6216 1500
Fax: (03) 6216 1555

SERVICE / REPAIR REPORT

Customer:

Cash Sales
Aaron Plummer
0400 821 977
aplummer@geosolutions.net.au

Job No:	4161
Cust ABN:	
Date:	24/07/2019
Service Engineer:	Hills, Adrian

Reported Fault / Required Service:

RAE SYSTEMS PGM7300 MiniRAE Lite
Serial Number: 590-902123

Service and calibration

Work Performed / Recommendation (if any):

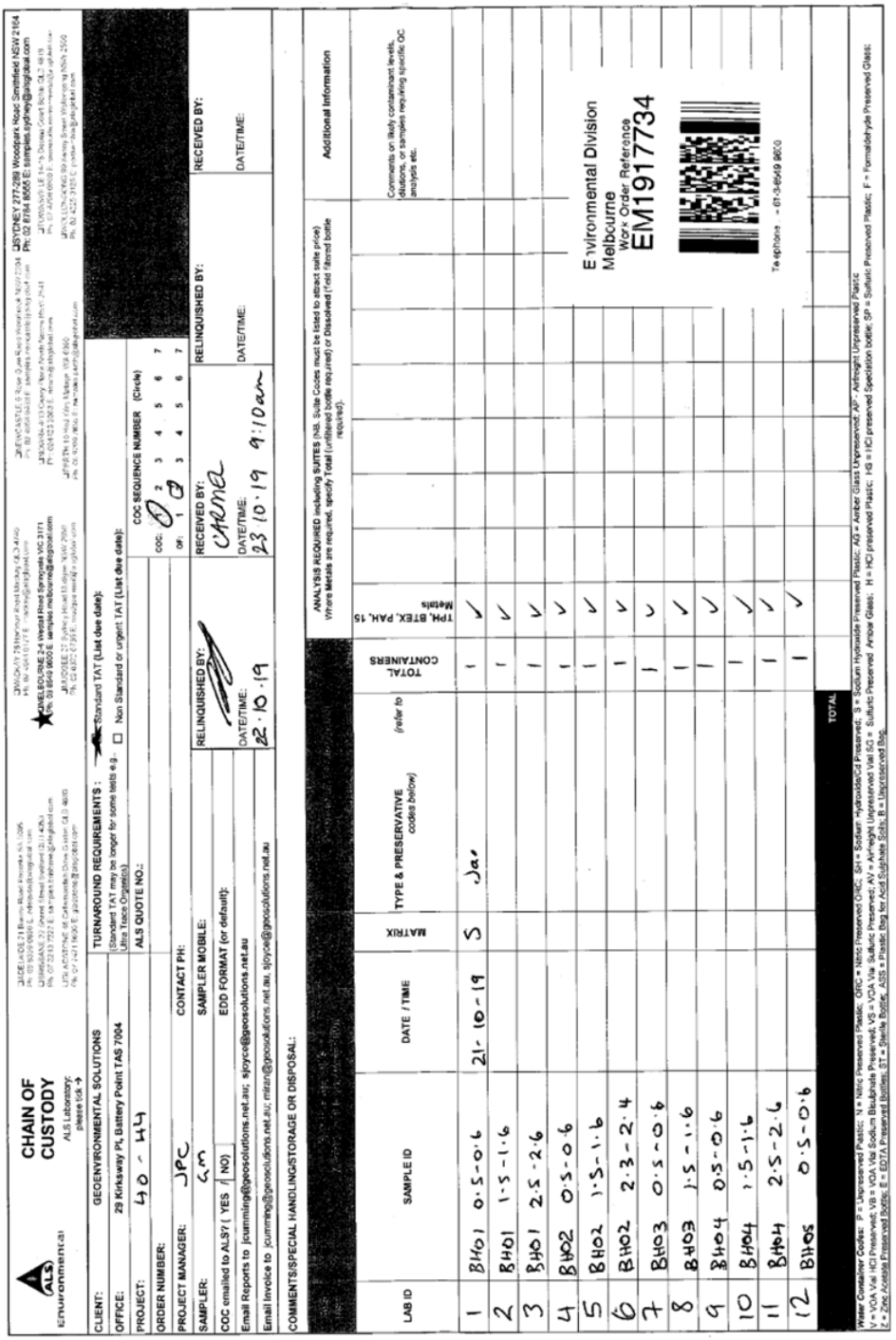
Incoming evaluation - no faults found.

Calibration carried out successfully.
Functionality test - passed.

See calibration sheet for full details.

Technology for Laboratory and Marine Science

Appendix 8 Laboratory Chain of Custody



CHAIN OF CUSTODY
ALS Laboratory: please tick →

SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com
MELBOURNE 2-4 Westall Road Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsglobal.com

CLIENT: GEOENVIRONMENTAL SOLUTIONS
OFFICE: 29 Kirksway PL Battery Point TAS 7004
PROJECT: 40 - 44
ORDER NUMBER:
PROJECT MANAGER: JPC
SAMPLER: CM
COC emailed to ALS? (YES / NO)
Email Reports to jcumming@geosolutions.net.au; sjoyce@geosolutions.net.au
Email Invoice to jcumming@geosolutions.net.au; mitan@geosolutions.net.au; sjoyce@geosolutions.net.au
CONTACT PH:
SAMPLER MOBILE:
EDD FORMAT (or default):

TURNAROUND REQUIREMENTS: Standard TAT (List due date):
(Standard TAT may be longer for some tests e.g. Ultra Trace Organics) ☐ Non Standard or urgent TAT (List due date):
ALS QUOTE NO.:
COC SEQUENCE NUMBER (Circle): COC: 01 02 03 04 05 06 07 OF: 1 2 3 4 5 6 7

RELINQUISHED BY: DATE/TIME: 22.10.19
RECEIVED BY: DATE/TIME: 23.10.19 9:10am
RELINQUISHED BY: DATE/TIME:
RECEIVED BY: DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS	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). TPH, BTEX, PAH, 15 Metals	Additional Information: Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
1	BH01 0.5-0.6	21-10-19	S	Jar	1	✓	
2	BH01 1.5-1.6				1	✓	
3	BH01 2.5-2.6				1	✓	
4	BH02 0.5-0.6				1	✓	
5	BH02 1.5-1.6				1	✓	
6	BH02 2.3-2.4				1	✓	
7	BH03 0.5-0.6				1	✓	
8	BH03 1.5-1.6				1	✓	
9	BH04 0.5-0.6				1	✓	
10	BH04 1.5-1.6				1	✓	
11	BH04 2.5-2.6				1	✓	
12	BH05 0.5-0.6				1	✓	
				TOTAL			

Environmental Division Melbourne
Work Order Reference EM1917734
Telephone : +61-3-8549 9600

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic; V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

ALS Environmental

CHAIN OF CUSTODY

ALS Laboratory: please tick →

ADELAIDE 21 Burma Road Pooraka SA 5095
BRISBANE 32 Shand Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com
GLADSTONE 46 Callemondah Drive Clinton QLD 4680
MACKAY 78 Harbour Road Mackay QLD 4740
★ MELBOURNE 2-4 Westall Road Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsglobal.com
MUDGEE 27 Sydney Road Mudgee NSW 2850
NEWCASTLE 5 Rose Gum Road Warabrook NSW 2304
NOWRA 4/13 Geary Place North Nowra NSW 2541
PERTH 10 Hod Way Malaga WA 6090
SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com
TOWNSVILLE 14-15 Desma Court Bohle QLD 4818
WOLLONGONG 99 Kenny Street Wollongong NSW 2500

CLIENT:	GEOENVIRONMENTAL SOLUTIONS	TURNAROUND REQUIREMENTS: (Standard TAT may be longer for some tests e.g., Ultra Trace Organics)	☒ Standard TAT (List due date): ☐ Non Standard or urgent TAT (List due date):
OFFICE:	29 Kirksway Pl, Battery Point TAS 7004	ALS QUOTE NO.:	COC SEQUENCE NUMBER (Circle) COC: 1 (2) 3 4 5 6 7 OF: 1 (2) 3 4 5 6 7
PROJECT:	40 - 44		
ORDER NUMBER:			
PROJECT MANAGER:	JPC	CONTACT PH:	
SAMPLER:	GM	SAMPLER MOBILE:	
COC emailed to ALS? (YES / NO)		EDD FORMAT (or default):	
Email Reports to jcumming@geosolutions.net.au; sjoyce@geosolutions.net.au			
Email Invoice to jcumming@geosolutions.net.au; miran@geosolutions.net.au, sjoyce@geosolutions.net.au			
COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:			

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
[signature]	CARMEL		
DATE/TIME: 22·10·19	DATE/TIME: 23·10·19 9:10am	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).

LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS	TPH, BTEX, PAH, 15 Metals								Additional Information: Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
13	BH05 1·2 - 1·3	21 - 10 - 19	S	Jar	1	✓								
14	BH06 0·4 - 0·5					✓								
15	BH07 0·5 - 0·6					✓								
16	BH07 1·3 - 1·4					✓								
17	BH08 0·5 - 0·6					✓								
18	BH09 0·5 - 0·6					✓								
19	Duplicate					✓								
20	Rinsate 1x voc vial received broken 23/10 cs		W	2L 1P 1A		✓								
	ILS		S	Jar		✓	Please send to Secondary ALS lab.							
					TOTAL									

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass;
Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

Batch 9 ES.

EM1917734

ALS Environmental

CHAIN OF CUSTODY

ALS Laboratory: please tick →

☐ADELAIDE 21 Burma Road Pooraka SA 5095 ☐BRISBANE 32 Shand Street Stafford QLD 4053 ☐GLADSTONE 46 Callemondah Drive Clinton QLD 4680 ☐MACKAY 78 Harbour Road Mackay QLD 4740 ★MELBOURNE 2-4 Westall Road Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsglobal.com ☐MUDGEE 27 Sydney Road Mudgee NSW 2850 ☐NEWCASTLE 5 Rose Gum Road Warabrook NSW 2304 ☐NOWRA 4/13 Geary Place North Nowra NSW 2541 ☐PERTH 10 Hod Way Malaga WA 6090 ☐SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com ☐TOWNSVILLE 14-15 Desma Court Bohle QLD 4818 ☐WOLLONGONG 99 Kenny Street Wollongong NSW 2500

CLIENT: GEOENVIRONMENTAL SOLUTIONS
OFFICE: 29 Kirksway Pl, Battery Point TAS 7004
PROJECT: 40 - 44
ORDER NUMBER:
PROJECT MANAGER: JPC
SAMPLER: GM
COC emailed to ALS? (YES / NO)
Email Reports to jcumming@geosolutions.net.au; sjoyce@geosolutions.net.au
Email Invoice to jcumming@geosolutions.net.au; miran@geosolutions.net.au, sjoyce@geosolutions.net.au

TURNAROUND REQUIREMENTS : (Standard TAT may be longer for some tests e.g.. Ultra Trace Organics) ☒ Standard TAT (List due date): ☐ Non Standard or urgent TAT (List due date):
ALS QUOTE NO.:
COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6 7 OF: 1 (2) 3 4 5 6 7
CONTACT PH:
SAMPLER MOBILE:
EDD FORMAT (or default):

RELINQUISHED BY: [signature] DATE/TIME: 22·10·19
RECEIVED BY: CARMEL DATE/TIME: 23·10·19 9:10am
RELINQUISHED BY: DATE/TIME:
RECEIVED BY: Shabi [?] DATE/TIME: 24/10/19 12:45PM

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

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: Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.

LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS	TPH, BTEX, PAH, 15 Metals	Additional Information
13	BH05 1·2-1·3	21-10-19	S	Jar	1	✓	
14	BH06 0·4-0·5					✓	
15	BH07 0·5-0·6					✓	
16	BH07 1·3-1·4					✓	
17	BH08 0·5-0·6					✓	
18	BH09 0·5-0·6					✓	
19	Duplicate					✓	
20	Rinsate 1x voc vial received broken	23/10 AS	W	2L 1P 1A		✓	
1	TLS		S	Jar		✓	Please send to Secondary ALS lab.
					TOTAL		

Environmental Division Sydney Work Order Reference ES1935030 Telephone : + 61-2-8784 8555

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

Batch 2 ES. EM1917734

ALS Environmental

CHAIN OF CUSTODY

ALS Laboratory: please tick →

ADELAIDE 21 Burma Road Pooraka SA 5095 Ph: 08 8359 0890 E: adelaide@alsglobal.com
BRISBANE 32 Shand Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com
GLADSTONE 46 Callemondah Drive Clinton QLD 4680 Ph: 07 7471 5600 E: gladstone@alsglobal.com
MACKAY 78 Harbour Road Mackay QLD 4740 Ph: 07 4944 0177 E: mackay@alsglobal.com
★ MELBOURNE 2-4 Westall Road Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsglobal.com
MUDGEE 27 Sydney Road Mudgee NSW 2850 Ph: 02 6372 6735 E: mudgee.mail@alsglobal.com
NEWCASTLE 5 Rose Gum Road Warabrook NSW 2304 Ph: 02 4968 9433 E: samples.newcastle@alsglobal.com
NOWRA 4/13 Geary Place North Nowra NSW 2541 Ph: 024423 2063 E: nowra@alsglobal.com
PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com
SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com
TOWNSVILLE 14-15 Desma Court Bohle QLD 4818 Ph: 07 4796 0600 E: townsville.environmental@alsglobal.com
WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: portkembla@alsglobal.com

CLIENT:	GEOENVIRONMENTAL SOLUTIONS	TURNAROUND REQUIREMENTS : (Standard TAT may be longer for some tests e.g.. Ultra Trace Organics)	✓ Standard TAT (List due date): ☐ Non Standard or urgent TAT (List due date):
OFFICE:	29 Kirksway Pl, Battery Point TAS 7004		
PROJECT:	40 - 44	ALS QUOTE NO.:	COC SEQUENCE NUMBER (Circle) COC: 1 (2) 3 4 5 6 7 OF: 1 (2) 3 4 5 6 7
ORDER NUMBER:			
PROJECT MANAGER:	JPC	CONTACT PH:	
SAMPLER:	GM	SAMPLER MOBILE:	
COC emailed to ALS? (YES / NO)		EDD FORMAT (or default):	

Email Reports to jcumming@geosolutions.net.au; sjoyce@geosolutions.net.au

Email Invoice to jcumming@geosolutions.net.au; miran@geosolutions.net.au, sjoyce@geosolutions.net.au

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
[signature]	Carmel		Shabi LQ
DATE/TIME: 22·10·19	DATE/TIME: 23·10·19 9:10am	DATE/TIME:	DATE/TIME: 24/10/19 12:45PM

[redacted]

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS	TPH, BTEX, PAH, 15 Metals								Additional Information: Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
13	BH05 1.2 - 1.3	21-10-19	S	Jar	1	✓								
14	BH06 0.4 - 0.5					✓								
15	BH07 0.5 - 0.6					✓								
16	BH07 1.3 - 1.4					✓								
17	BH08 0.5 - 0.6					✓								
18	BH09 0.5 - 0.6					✓								
19	Duplicate					✓								
20	Rinsate 1x voc vial received broken	23/10 CS	W	2L 1P 1A		✓								
(1)	1LS		S	Jar		✓	Please send to Secondary ALS lab.							
					TOTAL									

Environmental Division
Sydney
Work Order Reference
ES1935030
Telephone : +61-2-8784 8555

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass;
Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

Appendix 9 Laboratory Sample Receipt Notification

ALS Environmental

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EM1917734**		
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	: 40-44	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	: GM		

Dates

Date Samples Received	: 23-Oct-2019 09:10	Issue Date	: 23-Oct-2019
Client Requested Due Date	: 30-Oct-2019	Scheduled Reporting Date	: **30-Oct-2019**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 1	Temperature	: 5.1°C - Ice Bricks present
Receipt Detail	: HARD ESKY	No. of samples received / analysed	: 20 / 20

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	:	23-Oct-2019
Page	:	2 of 3
Work Order	:	EM1917734 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	Client sampling date / time	Client sample ID	SOIL - EA055-103 Moisture Content	SOIL - S-03 15 Metals (NEPM 2013 Suite - Incl. Digestion)	SOIL - S-07 TRH/BTEXN/PAH (SIM)
EM1917734-001	21-Oct-2019 00:00	BH01 0.5-0.6	✓	✓	✓
EM1917734-002	21-Oct-2019 00:00	BH01 1.5-1.6	✓	✓	✓
EM1917734-003	21-Oct-2019 00:00	BH01 2.5-2.6	✓	✓	✓
EM1917734-004	21-Oct-2019 00:00	BH02 0.5-0.6	✓	✓	✓
EM1917734-005	21-Oct-2019 00:00	BH02 1.5-1.6	✓	✓	✓
EM1917734-006	21-Oct-2019 00:00	BH02 2.3-2.4	✓	✓	✓
EM1917734-007	21-Oct-2019 00:00	BH03 0.5-0.6	✓	✓	✓
EM1917734-008	21-Oct-2019 00:00	BH03 1.5-1.6	✓	✓	✓
EM1917734-009	21-Oct-2019 00:00	BH04 0.5-0.6	✓	✓	✓
EM1917734-010	21-Oct-2019 00:00	BH04 1.5-1.6	✓	✓	✓
EM1917734-011	21-Oct-2019 00:00	BH04 2.5-2.6	✓	✓	✓
EM1917734-012	21-Oct-2019 00:00	BH05 0.5-0.6	✓	✓	✓
EM1917734-013	21-Oct-2019 00:00	BH05 1.2-1.3	✓	✓	✓
EM1917734-014	21-Oct-2019 00:00	BH06 0.4-0.5	✓	✓	✓
EM1917734-015	21-Oct-2019 00:00	BH07 0.5-0.6	✓	✓	✓
EM1917734-016	21-Oct-2019 00:00	BH07 1.3-1.4	✓	✓	✓
EM1917734-017	21-Oct-2019 00:00	BH08 0.5-0.6	✓	✓	✓
EM1917734-018	21-Oct-2019 00:00	BH09 0.5-0.6	✓	✓	✓
EM1917734-019	21-Oct-2019 00:00	Duplicate	✓	✓	✓

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - W-03T 15 Metals (Total) (NEPM)	WATER - W-07 TRH/BTEXN/PAH
EM1917734-020	21-Oct-2019 00:00	Rinsate	✓	✓

Issue Date	: 23-Oct-2019
Page	: 3 of 3
Work Order	: EM1917734 Amendment 0
Client	: GEO-ENVIRONMENTAL SOLUTIONS

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

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 - XTab (XTAB)	Email	jcumming@geosolutions.net.au
M IRAN		
- A4 - AU Tax Invoice (INV)	Email	miran@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
- Attachment - Report (SUBCO)	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 - XTab (XTAB)	Email	sjoyce@geosolutions.net.au

ALS Environmental

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **ES1935030**		
Client	: GEO-ENVIRONMENTAL SOLUTIONS	Laboratory	: Environmental Division Sydney
Contact	: DR JOHN PAUL CUMMING	Contact	: Shirley LeCornu
Address	: 29 KIRKSWAY PLACE BATTERY POINT TASMANIA, AUSTRALIA 7004	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
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	: +61-2-8784 8500
Project	: 40-44	Page	: 1 of 2
Order number	: ----	Quote number	: EB2017GEOENVSOL0001 (EN/222)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: GM		

Dates

Date Samples Received	: 24-Oct-2019 12:45	Issue Date	: 25-Oct-2019
Client Requested Due Date	: 31-Oct-2019	Scheduled Reporting Date	: **31-Oct-2019**

Delivery Details

Mode of Delivery	: Undefined	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: 14.0'C - Ice present
Receipt Detail	: ESKY	No. of samples received / analysed	: 1 / 1

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please 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 direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- 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.

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Issue Date	: 25-Oct-2019
Page	: 2 of 2
Work Order	: ES1935030 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	Client sampling date / time	Client sample ID	SOIL - EA055-103 Moisture Content	SOIL - S-03 15 Metals (NEPM 2013 Suite - Incl. Digestion)	SOIL - S-07 TRH/BTEXN/PAH (SIM)
ES1935030-001	21-Oct-2019 00:00	ILS	✓	✓	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

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 - XTab (XTAB)	Email	jcumming@geosolutions.net.au
M IRAN		
- A4 - AU Tax Invoice (INV)	Email	miran@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
- Attachment - Report (SUBCO)	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 - XTab (XTAB)	Email	sjoyce@geosolutions.net.au

Appendix 10 Quality Assurance and Quality Control Documentation

Soil Duplicate & Inter Lab Split

Duplicate Comparison	Sample	Arsenic	Barium	Beryllium	Cadmium	Chromium Total	Cobalt	Copper	Lead	Manganese	Nickel	Vanadium	Zinc
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
LOR		5	10	1	1	2	2	5	5	5	2	5	5
21/10/2019	Duplicate	<5	320	<1	<1	3	5	9	8	499	9	12	34
21/10/2019	BH01 1.5-1.6	<5	160	<1	<1	3	4	7	5	397	7	10	27
Relative Percentage Difference (RPD) %		NA	66.7	NA	NA	0.0	22.2	25.0	46.2	22.8	25.0	18.2	23.0
RPD Compliance Limit %		NA	30	NA	NA	NA	50	NA	NA	30	50	50	50
Method Detection Limit (MDL)		NA	1000	NA	NA	NA	40	NA	NA	500	40	100	100
MDL Class		NONE	MED	NONE	NONE	NONE	LOW	NONE	NONE	MED	LOW	LOW	LOW
RPD Compliance With MDL?	55/56 (98%)	YES	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
21/10/2019	ILS	<5	640	2	<1	3	113	152	<5	715	90	233	40
21/10/2019	BH07 0.5-0.6	<5	170	2	1	4	188	106	<5	712	62	141	26
Relative Percentage Difference (RPD) %		NA	116.0	0.0	NA	28.6	49.8	35.7	NA	0.4	36.8	49.2	42.4
RPD Compliance Limit %		NA	30	50	NA	NA	30	30	NA	15	30	30	50
Method Detection Limit (MDL)		NA	1000	20	NA	NA	200	500	NA	>500	200	500	100
MDL Class		NONE	MED	LOW	NONE	NONE	MED	MED	NONE	HIGH	MED	MED	LOW
RPD Compliance With MDL?	51/56 (91%)	YES	NO	YES	YES	YES	NO	NO	YES	YES	NO	NO	YES

Duplicate Comparison	Sample	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
LOR		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
21/10/2019	Duplicate	<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
21/10/2019	BH01 1.5-1.6	<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
Relative Percentage Difference (RPD) %		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RPD Compliance Limit %		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Method Detection Limit (MDL)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MDL Class		NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
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
21/10/2019	ILS	<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
21/10/2019	BH07 0.5-0.6	<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
Relative Percentage Difference (RPD) %		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RPD Compliance Limit %		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Method Detection Limit (MDL)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MDL Class		NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
RPD Compliance With MDL?	51/56 (91%)	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Duplicate Comparison	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
21/10/2019	Duplicate	<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	0.6	1.2
21/10/2019	BH01 1.5-1.6	<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	0.6	1.2
Relative Percentage Difference (RPD) %		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0	0.0
RPD Compliance Limit %		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	50
Method Detection Limit (MDL)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10
MDL Class		NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	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
21/10/2019	ILS	<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	0.6	1.2
21/10/2019	BH07 0.5-0.6	<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	0.6	1.2
Relative Percentage Difference (RPD) %		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0	0.0
RPD Compliance Limit %		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	50
Method Detection Limit (MDL)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10
MDL Class		NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	LOW
RPD Compliance With MDL?	51/56 (91%)	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

*Footnote: For Duplicate and BH01 1.5-1.6 pairs, 98% of analytes complied. Non compliances include: an RPD of 67% for Barium where <30% was expected; For ILS and BH07 0.5-0.6 pairs, 91% of analytes complied. Non compliances include: an RPD of 116% for Barium where <30% was expected; an RPD of 50% for Cobalt where <30% was expected; an RPD of 36% for Copper where <30% was expected; an RPD of 37% for Nickel where <30% was expected; an RPD of 49% for Vanadium where <30% was expected;

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: EM1917734	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	: 40-44	Date Samples Received	: 23-Oct-2019
Order number	: ----	Date Analysis Commenced	: 23-Oct-2019
C-O-C number	: ----	Issue Date	: 29-Oct-2019
Sampler	: GM		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 20		
No. of samples analysed	: 20		

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. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC

Page	: 2 of 11
Work Order	: EM1917734
Client	: GEO-ENVIRONMENTAL SOLUTIONS
Project	: 40-44

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by 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 Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 2660854)									
EM1917611-003	Anonymous	EG005T: Barium	7440-39-3	10	mg/kg	40	50	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	26	21	22.4	0% - 50%
		EG005T: Lead	7439-92-1	5	mg/kg	26	16	44.1	No Limit
EM1917611-003	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: Cobalt	7440-48-4	2	mg/kg	7	5	34.5	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	30	18	48.7	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	12	12	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	18	11	46.9	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	148	124	17.4	0% - 20%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	32	26	18.9	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	51	42	18.8	0% - 50%
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.00	No Limit
EM1917734-009	BH04 0.5-0.6	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	<10	<10	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Cobalt	7440-48-4	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	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	<5	<5	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	<5	<5	0.00	No Limit
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.00	No Limit

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Work Order : EM1917734
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : 40-44

Sub-Matrix: SOIL

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 2660854) - continued									
EM1917734-009	BH04 0.5-0.6	EG005T: Vanadium	7440-62-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.00	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2660921)									
EM1917734-001	BH01 0.5-0.6	EA055: Moisture Content	----	0.1	%	20.2	20.3	0.520	0% - 20%
EM1917734-009	BH04 0.5-0.6	EA055: Moisture Content	----	0.1	%	3.0	3.1	4.09	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2660922)									
EM1917734-019	Duplicate	EA055: Moisture Content	----	0.1	%	14.5	17.3	17.8	0% - 50%
EM1917758-010	Anonymous	EA055: Moisture Content	----	0.1	%	19.7	19.8	0.725	0% - 50%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2660855)									
EM1917611-003	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EM1917734-009	BH04 0.5-0.6	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2659108)									
EM1917734-001	BH01 0.5-0.6	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EM1917734-011	BH04 2.5-2.6	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

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Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : 40-44

Sub-Matrix: SOIL

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2659108) - continued									
EM1917734-011	BH04 2.5-2.6	EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2659081)									
EM1917734-001	BH01 0.5-0.6	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EM1917734-011	BH04 2.5-2.6	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2659109)									
EM1917734-001	BH01 0.5-0.6	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
EM1917734-011	BH04 2.5-2.6	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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2659081)									
EM1917734-001	BH01 0.5-0.6	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EM1917734-011	BH04 2.5-2.6	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: 2659109)									
EM1917734-001	BH01 0.5-0.6	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
		EP071: >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	0.00	No Limit
EM1917734-011	BH04 2.5-2.6	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
		EP071: >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	0.00	No Limit
EP080: BTEXN (QC Lot: 2659081)									
EM1917734-001	BH01 0.5-0.6	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

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Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080: BTEXN (QC Lot: 2659081) - continued									
EM1917734-001	BH01 0.5-0.6	EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EM1917734-011	BH04 2.5-2.6	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 Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG020T: Total Metals by ICP-MS (QC Lot: 2660808)									
EM1917714-015	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-T: Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Barium	7440-39-3	0.001	mg/L	0.073	0.073	0.00	0% - 20%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.019	0.019	0.00	0% - 50%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Boron	7440-42-8	0.05	mg/L	0.06	0.06	0.00	No Limit
EM1917743-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Barium	7440-39-3	0.001	mg/L	0.057	0.057	0.00	0% - 20%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.070	0.071	2.11	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Boron	7440-42-8	0.05	mg/L	0.14	0.15	10.1	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2660865)									

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Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2660865) - continued									
EM1917415-012	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1917703-073	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2659178)									
EM1917633-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EM1917692-003	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2659178)									
EM1917633-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EM1917692-003	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EP080: BTEXN (QC Lot: 2659178)									
EM1917633-001	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
EM1917692-003	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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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 Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 2660854)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	83.3	78.5	107
EG005T: Barium	7440-39-3	10	mg/kg	<10	143 mg/kg	81.0	76.4	110
EG005T: Beryllium	7440-41-7	1	mg/kg	<1	5.63 mg/kg	88.7	85.4	114
EG005T: Boron	7440-42-8	50	mg/kg	<50	33.2 mg/kg	86.6	84.4	126
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	84.8	76.2	108
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	78.4	77.7	110
EG005T: Cobalt	7440-48-4	2	mg/kg	<2	16 mg/kg	82.7	78.1	112
EG005T: Copper	7440-50-8	5	mg/kg	<5	32 mg/kg	82.7	78.1	108
EG005T: Lead	7439-92-1	5	mg/kg	<5	40 mg/kg	85.8	78.4	106
EG005T: Manganese	7439-96-5	5	mg/kg	<5	130 mg/kg	91.9	80.6	110
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55 mg/kg	88.8	79.9	109
EG005T: Selenium	7782-49-2	5	mg/kg	<5	5.37 mg/kg	94.1	92.0	110
EG005T: Vanadium	7440-62-2	5	mg/kg	<5	29.6 mg/kg	93.8	78.5	106
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	82.2	79.1	110
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2660855)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	83.1	76.9	110
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2659108)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	3 mg/kg	96.8	84.6	128
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	3 mg/kg	95.0	76.9	127
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	3 mg/kg	88.5	85.3	128
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	3 mg/kg	86.6	82.1	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	3 mg/kg	90.0	85.4	133
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	3 mg/kg	88.9	88.7	136
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	3 mg/kg	92.7	83.4	136
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	3 mg/kg	90.9	85.1	140
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	3 mg/kg	82.4	80.7	130
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	3 mg/kg	87.9	85.2	141
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	3 mg/kg	101	68.5	120
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	3 mg/kg	106	80.1	132
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	3 mg/kg	96.9	67.4	120
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	3 mg/kg	73.3	66.0	126
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	3 mg/kg	72.0	65.4	127
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	3 mg/kg	73.9	67.8	127

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Work Order : EM1917734
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : 40-44

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 Petroleum Hydrocarbons (QCLot: 2659081)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	36 mg/kg	79.2	61.2	127
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2659109)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	688 mg/kg	103	71.8	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	3100 mg/kg	98.0	83.9	125
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	1490 mg/kg	97.8	77.9	119
EP071: C10 - C36 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2659081)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	45 mg/kg	78.5	59.5	125
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2659109)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	1050 mg/kg	102	72.2	128
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	3960 mg/kg	98.8	82.1	122
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	280 mg/kg	118	55.1	131
EP071: >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----
EP080: BTEXN (QCLot: 2659081)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	2 mg/kg	81.9	62.7	119
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	2 mg/kg	82.4	66.6	126
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	2 mg/kg	83.0	66.3	124
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	4 mg/kg	82.8	67.5	128
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	2 mg/kg	87.2	73.0	128
EP080: Naphthalene	91-20-3	1	mg/kg	<1	0.5 mg/kg	83.8	61.2	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
EG020T: Total Metals by ICP-MS (QCLot: 2660808)								
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	107	89.2	113
EG020A-T: Beryllium	7440-41-7	0.001	mg/L	<0.001	0.1 mg/L	97.4	86.0	114
EG020A-T: Barium	7440-39-3	0.001	mg/L	<0.001	0.1 mg/L	105	87.2	113
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	109	86.4	112
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	102	86.9	110
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	103	87.7	112
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	100	86.9	109
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	101	88.3	110
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	102	88.7	112
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	102	87.9	111
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	101	84.8	112
EG020A-T: Vanadium	7440-62-2	0.01	mg/L	<0.01	0.1 mg/L	102	87.1	112
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	104	86.7	114

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Work Order : EM1917734
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : 40-44

Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Laboratory Control Spike (LCS) Report: Spike Recovery (%): LCS	Laboratory Control Spike (LCS) Report: Recovery Limits (%): Low	Laboratory Control Spike (LCS) Report: Recovery Limits (%): High
EG020T: Total Metals by ICP-MS (QCLot: 2660808) - continued								
EG020A-T: Boron	7440-42-8	0.05	mg/L	<0.05	0.5 mg/L	106	90.4	118
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2660865)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	92.1	72.6	115
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2659228)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	94.1	41.1	116
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	86.3	47.2	121
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	90.2	47.3	118
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	87.6	49.4	121
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	95.0	52.5	124
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	88.2	52.3	125
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	89.3	52.4	127
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	106	51.3	130
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	85.0	50.0	130
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	83.2	49.6	131
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	93.3	51.5	132
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	117	54.0	131
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	101	52.3	133
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	92.5	50.4	127
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	89.9	50.0	127
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	87.0	50.8	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2659178)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	87.9	65.5	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2659229)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	3330 µg/L	101	44.8	125
EP071: C15 - C28 Fraction	----	100	µg/L	<100	16500 µg/L	81.8	51.3	135
EP071: C29 - C36 Fraction	----	50	µg/L	<50	7800 µg/L	83.1	49.4	134
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2659178)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	86.1	64.3	126
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2659229)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	5690 µg/L	89.2	47.3	129
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	20700 µg/L	82.7	50.4	133
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	1510 µg/L	89.2	45.2	136
EP080: BTEXN (QCLot: 2659178)								
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	93.3	69.8	124
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	87.1	73.6	126
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	88.5	72.0	126

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Work Order : EM1917734
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : 40-44

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
EP080: BTEXN (QCLot: 2659178) - continued								
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	40 µg/L	91.3	71.5	132
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	90.9	76.5	132
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	77.0	70.5	127

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	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 2660854)							
EM1917734-001	BH01 0.5-0.6	EG005T: Arsenic	7440-38-2	50 mg/kg	82.7	78.0	124
		EG005T: Barium	7440-39-3	50 mg/kg	121	71.0	135
		EG005T: Beryllium	7440-41-7	50 mg/kg	89.2	85.0	125
		EG005T: Cadmium	7440-43-9	50 mg/kg	98.3	84.0	116
		EG005T: Chromium	7440-47-3	50 mg/kg	101	79.0	121
		EG005T: Copper	7440-50-8	50 mg/kg	101	82.0	124
		EG005T: Lead	7439-92-1	50 mg/kg	84.8	76.0	124
		EG005T: Manganese	7439-96-5	50 mg/kg	# 190	68.0	136
		EG005T: Nickel	7440-02-0	50 mg/kg	93.6	78.0	120
		EG005T: Selenium	7782-49-2	50 mg/kg	73.6	71.0	125
		EG005T: Vanadium	7440-62-2	50 mg/kg	# 149	76.0	124
		EG005T: Zinc	7440-66-6	50 mg/kg	90.0	74.0	128
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2660855)							
EM1917734-001	BH01 0.5-0.6	EG035T: Mercury	7439-97-6	0.5 mg/kg	100	76.0	116
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2659108)							
EM1917734-003	BH01 2.5-2.6	EP075(SIM): Acenaphthene	83-32-9	3 mg/kg	84.9	67.0	117
		EP075(SIM): Pyrene	129-00-0	3 mg/kg	79.1	52.0	148
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2659081)							
EM1917734-002	BH01 1.5-1.6	EP080: C6 - C9 Fraction	----	28 mg/kg	65.8	42.0	131
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2659109)							
EM1917734-002	BH01 1.5-1.6	EP071: C10 - C14 Fraction	----	688 mg/kg	104	53.0	123
		EP071: C15 - C28 Fraction	----	3100 mg/kg	98.5	70.0	124
		EP071: C29 - C36 Fraction	----	1490 mg/kg	98.9	64.0	118
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2659081)							

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Work Order : EM1917734
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : 40-44

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2659081) - continued							
EM1917734-002	BH01 1.5-1.6	EP080: C6 - C10 Fraction	C6_C10	33 mg/kg	63.9	39.0	129
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2659109)							
EM1917734-002	BH01 1.5-1.6	EP071: >C10 - C16 Fraction	----	1050 mg/kg	102	65.0	123
		EP071: >C16 - C34 Fraction	----	3960 mg/kg	99.6	67.0	121
		EP071: >C34 - C40 Fraction	----	280 mg/kg	120	44.0	126
EP080: BTEXN (QCLot: 2659081)							
EM1917734-002	BH01 1.5-1.6	EP080: Benzene	71-43-2	2 mg/kg	82.7	50.0	138
		EP080: Toluene	108-88-3	2 mg/kg	83.6	56.0	139

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 2660808)							
EM1917714-015	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	99.4	82.0	118
		EG020A-T: Beryllium	7440-41-7	1 mg/L	97.2	79.0	121
		EG020A-T: Barium	7440-39-3	1 mg/L	99.4	80.0	114
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	101	75.0	129
		EG020A-T: Chromium	7440-47-3	1 mg/L	91.1	80.0	118
		EG020A-T: Cobalt	7440-48-4	1 mg/L	95.5	82.0	120
		EG020A-T: Copper	7440-50-8	1 mg/L	92.4	81.0	115
		EG020A-T: Lead	7439-92-1	1 mg/L	93.3	83.0	121
		EG020A-T: Manganese	7439-96-5	1 mg/L	93.4	73.0	123
		EG020A-T: Nickel	7440-02-0	1 mg/L	96.7	80.0	118
		EG020A-T: Vanadium	7440-62-2	1 mg/L	91.0	81.0	119
		EG020A-T: Zinc	7440-66-6	1 mg/L	96.8	74.0	116
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2660865)							
EM1917514-014	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	87.1	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2659178)							
EM1917633-002	Anonymous	EP080: C6 - C9 Fraction	----	280 µg/L	63.4	43.0	125
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2659178)							
EM1917633-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	66.9	44.0	122
EP080: BTEXN (QCLot: 2659178)							
EM1917633-002	Anonymous	EP080: Benzene	71-43-2	20 µg/L	78.0	68.0	130
		EP080: Toluene	108-88-3	20 µg/L	74.0	72.0	132

Environmental Site Assessment: 40 & 42-44 Burnett Street, North Hobart. November 2019.

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EM1917734**	Page	: 1 of 9
Client	: GEO-ENVIRONMENTAL SOLUTIONS	Laboratory	: Environmental Division Melbourne
Contact	: DR JOHN PAUL CUMMING	Telephone	: +6138549 9630
Project	: 40-44	Date Samples Received	: 23-Oct-2019
Site	: ----	Issue Date	: 29-Oct-2019
Sampler	: GM	No. of samples received	: 20
Order number	: ----	No. of samples analysed	: 20

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Page : 2 of 9
Work Order : EM1917734
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : 40-44

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EG005(ED093)T: Total Metals by ICP-AES	EM1917734--001	BH01 0.5-0.6	**Manganese**	7439-96-5	190 %	68.0-136%	**Recovery greater than upper data quality objective**
EG005(ED093)T: Total Metals by ICP-AES	EM1917734--001	BH01 0.5-0.6	**Vanadium**	7440-62-2	149 %	76.0-124%	**Recovery greater than upper data quality objective**

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	2	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	20	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	2	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	20	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: × = 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*
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055)							
BH01 0.5-0.6, BH01 2.5-2.6, BH02 1.5-1.6, BH03 0.5-0.6, BH04 0.5-0.6, BH04 2.5-2.6, BH05 1.2-1.3, BH07 0.5-0.6, BH08 0.5-0.6, Duplicate	21-Oct-2019	----	----	----	24-Oct-2019	04-Nov-2019	✓
BH01 1.5-1.6, BH02 0.5-0.6, BH02 2.3-2.4, BH03 1.5-1.6, BH04 1.5-1.6, BH05 0.5-0.6, BH06 0.4-0.5, BH07 1.3-1.4, BH09 0.5-0.6,							

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Work Order : EM1917734
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : 40-44

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
EG005(ED093)T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved (EG005T)								
BH01 0.5-0.6,	BH01 1.5-1.6,	21-Oct-2019	24-Oct-2019	18-Apr-2020	✓	24-Oct-2019	18-Apr-2020	✓
BH01 2.5-2.6,	BH02 0.5-0.6,							
BH02 1.5-1.6,	BH02 2.3-2.4,							
BH03 0.5-0.6,	BH03 1.5-1.6,							
BH04 0.5-0.6,	BH04 1.5-1.6,							
BH04 2.5-2.6,	BH05 0.5-0.6,							
BH05 1.2-1.3,	BH06 0.4-0.5,							
BH07 0.5-0.6,	BH07 1.3-1.4,							
BH08 0.5-0.6,	BH09 0.5-0.6,							
Duplicate								
EG035T: Total Recoverable Mercury by FIMS								
Soil Glass Jar - Unpreserved (EG035T)								
BH01 0.5-0.6,	BH01 1.5-1.6,	21-Oct-2019	24-Oct-2019	18-Nov-2019	✓	25-Oct-2019	18-Nov-2019	✓
BH01 2.5-2.6,	BH02 0.5-0.6,							
BH02 1.5-1.6,	BH02 2.3-2.4,							
BH03 0.5-0.6,	BH03 1.5-1.6,							
BH04 0.5-0.6,	BH04 1.5-1.6,							
BH04 2.5-2.6,	BH05 0.5-0.6,							
BH05 1.2-1.3,	BH06 0.4-0.5,							
BH07 0.5-0.6,	BH07 1.3-1.4,							
BH08 0.5-0.6,	BH09 0.5-0.6,							
Duplicate								
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP075(SIM))								
BH01 0.5-0.6,	BH01 1.5-1.6,	21-Oct-2019	23-Oct-2019	04-Nov-2019	✓	24-Oct-2019	02-Dec-2019	✓
BH01 2.5-2.6,	BH02 0.5-0.6,							
BH02 1.5-1.6,	BH02 2.3-2.4,							
BH03 0.5-0.6,	BH03 1.5-1.6,							
BH04 0.5-0.6,	BH04 1.5-1.6,							
BH04 2.5-2.6,	BH05 0.5-0.6,							
BH05 1.2-1.3,	BH06 0.4-0.5,							
BH07 0.5-0.6,	BH07 1.3-1.4,							
BH08 0.5-0.6,	BH09 0.5-0.6,							
Duplicate								

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Matrix: **SOIL** Evaluation: x = 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)							
BH01 0.5-0.6, BH01 1.5-1.6, BH01 2.5-2.6, BH02 0.5-0.6, BH02 1.5-1.6, BH02 2.3-2.4, BH03 0.5-0.6, BH03 1.5-1.6, BH04 0.5-0.6, BH04 1.5-1.6, BH04 2.5-2.6, BH05 0.5-0.6, BH05 1.2-1.3, BH06 0.4-0.5, BH07 0.5-0.6, BH07 1.3-1.4, BH08 0.5-0.6, BH09 0.5-0.6, Duplicate	21-Oct-2019	23-Oct-2019	04-Nov-2019	✓	24-Oct-2019	04-Nov-2019	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP080)							
BH01 0.5-0.6, BH01 1.5-1.6, BH01 2.5-2.6, BH02 0.5-0.6, BH02 1.5-1.6, BH02 2.3-2.4, BH03 0.5-0.6, BH03 1.5-1.6, BH04 0.5-0.6, BH04 1.5-1.6, BH04 2.5-2.6, BH05 0.5-0.6, BH05 1.2-1.3, BH06 0.4-0.5, BH07 0.5-0.6, BH07 1.3-1.4, BH08 0.5-0.6, BH09 0.5-0.6, Duplicate	21-Oct-2019	23-Oct-2019	04-Nov-2019	✓	24-Oct-2019	04-Nov-2019	✓
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080)							
BH01 0.5-0.6, BH01 1.5-1.6, BH01 2.5-2.6, BH02 0.5-0.6, BH02 1.5-1.6, BH02 2.3-2.4, BH03 0.5-0.6, BH03 1.5-1.6, BH04 0.5-0.6, BH04 1.5-1.6, BH04 2.5-2.6, BH05 0.5-0.6, BH05 1.2-1.3, BH06 0.4-0.5, BH07 0.5-0.6, BH07 1.3-1.4, BH08 0.5-0.6, BH09 0.5-0.6, Duplicate	21-Oct-2019	23-Oct-2019	04-Nov-2019	✓	24-Oct-2019	04-Nov-2019	✓

Matrix: **WATER** Evaluation: x = 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
EG020T: Total Metals by ICP-MS							
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG020A-T)							
Rinsate	21-Oct-2019	24-Oct-2019	18-Apr-2020	✓	24-Oct-2019	18-Apr-2020	✓

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Client : GEO-ENVIRONMENTAL SOLUTIONS
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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
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG035T)							
Rinsate	21-Oct-2019	----	----	----	24-Oct-2019	18-Nov-2019	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM))							
Rinsate	21-Oct-2019	23-Oct-2019	28-Oct-2019	✓	25-Oct-2019	02-Dec-2019	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071)							
Rinsate	21-Oct-2019	23-Oct-2019	28-Oct-2019	✓	25-Oct-2019	02-Dec-2019	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
Rinsate	21-Oct-2019	23-Oct-2019	04-Nov-2019	✓	24-Oct-2019	04-Nov-2019	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071)							
Rinsate	21-Oct-2019	23-Oct-2019	28-Oct-2019	✓	25-Oct-2019	02-Dec-2019	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
Rinsate	21-Oct-2019	23-Oct-2019	04-Nov-2019	✓	24-Oct-2019	04-Nov-2019	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080)							
Rinsate	21-Oct-2019	23-Oct-2019	04-Nov-2019	✓	24-Oct-2019	04-Nov-2019	✓

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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)	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	3	20	15.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	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	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	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	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	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	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	19	5.26	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)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	2	0.00	10.00	✗	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	20	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)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	2	50.00	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*	*Regular*	*Actual*	*Expected*	*Evaluation*	
Laboratory Control Samples (LCS) - Continued							
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	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	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	2	50.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	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	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	2	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	20	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 (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
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 (2013) 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 (2013) Schedule B(3)
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM amended 2013.
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270D. 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 (2013) Schedule B(3) (Method 502 and 507)
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260B. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM amended 2013.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. 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.
Total Mercury by FIMS	EG035T	WATER	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. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered 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 (2013) Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015A 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 (2013) Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270D 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 (2013) Schedule B(3)

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Analytical Methods	Method	Matrix	Method Descriptions
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)

Preparation Methods	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 (2013) Schedule B(3) (Method 202)
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.
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM (2013) Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510B 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 (2013) 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 sparging.

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: ES1935030	Page	: 1 of 7
Client	: GEO-ENVIRONMENTAL SOLUTIONS	Laboratory	: Environmental Division Sydney
Contact	: DR JOHN PAUL CUMMING	Contact	: Shirley LeCornu
Address	: 29 KIRKSWAY PLACE BATTERY POINT TASMANIA, AUSTRALIA 7004	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 03 6223 1839	Telephone	: +6138549 9630
Project	: 40-44	Date Samples Received	: 24-Oct-2019
Order number	: ----	Date Analysis Commenced	: 25-Oct-2019
C-O-C number	: ----	Issue Date	: 31-Oct-2019
Sampler	: GM		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 1		
No. of samples analysed	: 1		

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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. 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*
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Evie Sidarta	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

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Client	: GEO-ENVIRONMENTAL SOLUTIONS
Project	: 40-44

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by 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 Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 2667012)									
ES1934712-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	41	51	22.1	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	57	68	17.2	0% - 20%
		EG005T: Zinc	7440-66-6	5	mg/kg	64	69	7.58	0% - 50%
ES1934712-001	Anonymous	EG005T: Beryllium	7440-41-7	1	mg/kg	<2	<2	0.00	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	<20	<20	0.00	No Limit
		EG005T: Cobalt	7440-48-4	2	mg/kg	6	6	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	8	9	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	51	48	5.69	0% - 50%
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	86	82	5.62	0% - 50%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.00	No Limit
ES1935008-002	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	<10	<10	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	2	3	0.00	No Limit
		EG005T: Cobalt	7440-48-4	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	4	60.8	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	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	6	14	89.3	No Limit
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.00	No Limit

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Work Order : ES1935030
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : 40-44

Sub-Matrix: SOIL

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 2667012) - continued									
ES1935008-002	Anonymous	EG005T: Vanadium	7440-62-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.00	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2667017)									
ES1934985-003	Anonymous	EA055: Moisture Content	----	0.1	%	11.9	17.9	40.1	0% - 50%
EW1904615-004	Anonymous	EA055: Moisture Content	----	0.1	%	9.9	13.4	30.3	0% - 50%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2667013)									
ES1934937-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
ES1935008-002	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2663855)									
ES1935100-001	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2663856)									
ES1935100-001	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
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2665673)									
ES1935030-001	ILS	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
ES1935043-013	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	35	38	6.45	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2663856)									
ES1935100-001	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	120	130	10.2	No Limit

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Project : 40-44

Sub-Matrix: SOIL

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2663856) - continued									
ES1935100-001	Anonymous	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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2665673)									
ES1935030-001	ILS	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
ES1935043-013	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	41	44	7.26	No Limit
EP080: BTEXN (QC Lot: 2665673)									
ES1935030-001	ILS	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
ES1935043-013	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	1.3	1.2	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

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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 Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 2667012)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	97.9	86.0	126
EG005T: Barium	7440-39-3	10	mg/kg	<10	143 mg/kg	104	85.0	115
EG005T: Beryllium	7440-41-7	1	mg/kg	<1	5.63 mg/kg	95.2	90.0	113
EG005T: Boron	7440-42-8	50	mg/kg	<50	----	----	----	----
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	100	83.0	113
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	99.2	76.0	128
EG005T: Cobalt	7440-48-4	2	mg/kg	<2	16 mg/kg	107	88.0	120
EG005T: Copper	7440-50-8	5	mg/kg	<5	32 mg/kg	99.9	86.0	120
EG005T: Lead	7439-92-1	5	mg/kg	<5	40 mg/kg	98.4	80.0	114
EG005T: Manganese	7439-96-5	5	mg/kg	<5	130 mg/kg	104	85.0	117
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55 mg/kg	106	87.0	123
EG005T: Selenium	7782-49-2	5	mg/kg	<5	5.37 mg/kg	101	75.0	131
EG005T: Vanadium	7440-62-2	5	mg/kg	<5	29.6 mg/kg	110	92.0	122
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	108	80.0	122
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2667013)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	80.6	70.0	105
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2663855)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	95.2	77.0	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	95.2	72.0	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	92.6	73.0	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	96.1	72.0	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	97.3	75.0	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	98.7	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	92.4	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	92.9	74.0	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	96.9	69.0	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	92.1	75.0	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	90.0	68.0	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	95.9	74.0	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	95.2	70.0	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	93.5	61.0	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	95.3	62.0	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	98.9	63.0	121

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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 Petroleum Hydrocarbons (QCLot: 2663856)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	88.5	75.0	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	90.2	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	88.8	71.0	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2665673)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	78.7	68.4	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2663856)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	101	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	93.0	74.0	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	81.2	63.0	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2665673)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	80.2	68.4	128
EP080: BTEXN (QCLot: 2665673)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	81.6	62.0	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	84.4	67.0	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	81.1	65.0	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	80.6	66.0	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	84.6	68.0	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	95.9	63.0	119

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	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 2667012)							
ES1934712-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	129	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	119	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	122	70.0	130
		EG005T: Copper	7440-50-8	250 mg/kg	122	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	128	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	120	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	114	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2667013)							
ES1934937-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	91.5	70.0	130

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Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2663855)							
ES1935100-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	97.4	70.0	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	100	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2663856)							
ES1935100-001	Anonymous	EP071: C10 - C14 Fraction	----	523 mg/kg	79.1	73.0	137
		EP071: C15 - C28 Fraction	----	2319 mg/kg	93.4	53.0	131
		EP071: C29 - C36 Fraction	----	1714 mg/kg	96.6	52.0	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2665673)							
ES1935030-001	ILS	EP080: C6 - C9 Fraction	----	32.5 mg/kg	91.2	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2663856)							
ES1935100-001	Anonymous	EP071: >C10 - C16 Fraction	----	860 mg/kg	85.5	73.0	137
		EP071: >C16 - C34 Fraction	----	3223 mg/kg	96.4	53.0	131
		EP071: >C34 - C40 Fraction	----	1058 mg/kg	88.5	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2665673)							
ES1935030-001	ILS	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	91.1	70.0	130
EP080: BTEXN (QCLot: 2665673)							
ES1935030-001	ILS	EP080: Benzene	71-43-2	2.5 mg/kg	87.2	70.0	130
		EP080: Toluene	108-88-3	2.5 mg/kg	83.8	70.0	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	86.8	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	84.7	70.0	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	88.8	70.0	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	70.5	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: ES1935030	Page	: 1 of 4
Client	: GEO-ENVIRONMENTAL SOLUTIONS	Laboratory	: Environmental Division Sydney
Contact	: DR JOHN PAUL CUMMING	Telephone	: +6138549 9630
Project	: 40-44	Date Samples Received	: 24-Oct-2019
Site	: ----	Issue Date	: 31-Oct-2019
Sampler	: GM	No. of samples received	: 1
Order number	: ----	No. of samples analysed	: 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- NO Method Blank value outliers occur.
- NO Duplicate outliers occur.
- NO Laboratory Control outliers occur.
- NO Matrix Spike outliers occur.
- For all regular sample matrices, NO surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- NO Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- NO Quality Control Sample Frequency Outliers exist.

RIGHT SOLUTIONS | RIGHT PARTNER

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Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055) ILS	21-Oct-2019	----	----	----	28-Oct-2019	04-Nov-2019	✓
EG005(ED093)T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T) ILS	21-Oct-2019	28-Oct-2019	18-Apr-2020	✓	28-Oct-2019	18-Apr-2020	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T) ILS	21-Oct-2019	28-Oct-2019	18-Nov-2019	✓	29-Oct-2019	18-Nov-2019	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM)) ILS	21-Oct-2019	25-Oct-2019	04-Nov-2019	✓	28-Oct-2019	04-Dec-2019	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP071) ILS	21-Oct-2019	25-Oct-2019	04-Nov-2019	✓	28-Oct-2019	04-Dec-2019	✓
Soil Glass Jar - Unpreserved (EP080) ILS	21-Oct-2019	25-Oct-2019	04-Nov-2019	✓	30-Oct-2019	04-Nov-2019	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP071) ILS	21-Oct-2019	25-Oct-2019	04-Nov-2019	✓	28-Oct-2019	04-Dec-2019	✓
Soil Glass Jar - Unpreserved (EP080) ILS	21-Oct-2019	25-Oct-2019	04-Nov-2019	✓	30-Oct-2019	04-Nov-2019	✓
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080) ILS	21-Oct-2019	25-Oct-2019	04-Nov-2019	✓	30-Oct-2019	04-Nov-2019	✓

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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	2	14	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	1	5	20.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	3	20	15.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	6	16.67	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	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	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	6	16.67	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	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	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	6	16.67	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	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	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	6	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Page	: 4 of 4
Work Order	: ES1935030
Client	: GEO-ENVIRONMENTAL SOLUTIONS
Project	: 40-44

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 (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
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 (2013) 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 (2013) Schedule B(3)
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM amended 2013.
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270D. 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 (2013) Schedule B(3) (Method 502 and 507)
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260B. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM amended 2013.

Preparation Methods	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 (2013) Schedule B(3) (Method 202)
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.

Appendix 11 Borehole Logs

GES GEO-ENVIRONMENTAL SOLUTIONS

PROJECT: 40-44 Burnett Street ESA
CLIENT: BPSM

Log of BH01

EASTING: 526060 GDA94
NORTHING: 5253120 GDA94
ELEVATION AND DATUM: 43.6 m AHD
TOTAL DEPTH (m): 2.6
NATURAL (m): WATER TABLE (m):

BORING LOCATION: North Hobart
DRILLING CONTRACTOR: Geo-Environmental Solutions P/L
EQUIPMENT/METHOD: Geoprobe LOGGED BY: G. McDonald
SAMPLING: Direct Push DATE: 21/10/2019

IB105 Analyte IL Exceedances: Arsenic, Barium, Beryllium, Cadmium, Chromium, Chromium VI, Copper, Cobalt, Lead, Manganese, Mercury, Molybdenum, Nickel, Selenium, Silver, Tin, Zinc, Aldrin+Dieldrin, DDT+DDE+DDD, Benzo(a)pyrene, Phenol, TPH C6 - C9, TPH C10 - C36, PAH Sum/TEQ, PCB's, Benzene, Toluene, Ethylbenzene, Total Xylenes, Cyanide, Fluoride

DEPTH (metres)	MATERIAL DESCRIPTION	Geology	USCS Lithology	Laboratory Sample	Field PID (ppm)	MONITORING WELL	ELEVATION (metres)
0.0–0.1	FILL: Concrete	FILL	P				43.4
0.2–0.4	FILL: SANDY CLAY; dark brown/dark grey, slightly moist, stiff, medium plasticity		Cl				43.2
0.5–0.7	SANDY CLAY: yellow-brown, slightly moist, very stiff, medium plasticity	Q	Cl	BH01 0.5-0.6			43.0
0.8–1.8	Silty SANDY CLAY: pale yellow-grey, slightly moist, very stiff to hard, low plasticity, some sandstone gravel	Rqpc	CL	BH01 1.5-1.6			42.8–42.0
1.9–2.5	MUDSTONE: fine grained, yellow/yellow-brown, slightly moist to dry, very low strength, extremely weathered, clay properties. Refusal		Rock	BH01 2.5-2.6			41.8–41.0

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: 40-44 Burnett Street ESA
CLIENT: BPSM

Log of BH02

EASTING: 526062 GDA94
NORTHING: 5253118 GDA94
ELEVATION AND DATUM: 43.7 m AHD
TOTAL DEPTH (m): 2.4
NATURAL (m): WATER TABLE (m):

BORING LOCATION: North Hobart
DRILLING CONTRACTOR: Geo-Environmental Solutions P/L
EQUIPMENT/METHOD: Geoprobe LOGGED BY: G. McDonald
SAMPLING: Direct Push DATE: 21/10/2019

DEPTH (metres)	MATERIAL DESCRIPTION	Geology	USCS Lithology	Laboratory Sample	Field PID (ppm)	IB105 Analyte IL Exceedances	MONITORING WELL	ELEVATION (metres)
0.0–0.1	FILL: Concrete		P					43.6
0.1–0.6	FILL: SANDY CLAY; dark brown/dark grey, slightly moist, stiff, medium plasticity	FILL	Cl	BH02 0.5-0.6		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		43.4 / 43.2
0.6–0.8	SANDY CLAY: yellow-brown, slightly moist, very stiff, medium plasticity	Q	Cl					43.0
0.8–2.3	Silty SANDY CLAY: pale yellow-grey, slightly moist, very stiff to hard, low plasticity, some sandstone gravel	Rqpc	CL	BH02 1.5-1.6		1 2 1 1 1 1 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1		42.8 / 42.6 / 42.4 / 42.2 / 42.0 / 41.8 / 41.6
2.3	MUDSTONE: fine grained, yellow/yellow-brown, slightly moist to dry, very low strength, extremely weathered, clay properties. Refusal		Rock	BH02 2.3-2.4		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		41.4

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: 40-44 Burnett Street ESA
CLIENT: BPSM

Log of BH03

EASTING: 526055 GDA94
NORTHING: 5253115 GDA94
ELEVATION AND DATUM: 43.6 m AHD
TOTAL DEPTH (m): 1.9
NATURAL (m): WATER TABLE (m):

BORING LOCATION: North Hobart
DRILLING CONTRACTOR: Geo-Environmental Solutions P/L
EQUIPMENT/METHOD: Geoprobe LOGGED BY: G. McDonald
SAMPLING: Direct Push DATE: 21/10/2019

DEPTH (metres)	MATERIAL DESCRIPTION	Geology	USCS Lithology	Laboratory Sample	Field PID (ppm)	IB105 Analyte IL Exceedances	MONITORING WELL	ELEVATION (metres)
0.0–0.1	FILL: Concrete	FILL	P					43.4
0.1–0.2	FILL: SANDY CLAY; dark brown/dark grey, slightly moist, stiff, medium plasticity		Cl					
0.2–0.5	SANDY CLAY: yellow-brown, slightly moist, very stiff, medium plasticity	Q	Cl	BH03 0.5-0.6		1 1 1 1 2 2 1 2 1 1 1 1 1 1 1 1 1 1 1 1		43.2 43.0
0.5–1.8	Silty SANDY CLAY: pale yellow-grey, slightly moist, very stiff to hard, low plasticity, some sandstone gravel	Rqpc	CL	BH03 1.5-1.6		1 1 1 1 1 1 1 1 2 1 1 1 1 1 1 1 1 1 1 1		42.8 42.6 42.4 42.2 42.0
1.8	MUDSTONE: fine grained, yellow/yellow-brown, slightly moist to dry, very low strength, extremely weathered, clay properties. Refusal		Rock					41.8

IB105 Analyte IL Exceedances: Arsenic, Barium, Beryllium, Cadmium, Chromium, Chromium VI, Copper, Cobalt, Lead, Manganese, Mercury, Molybdenum, Nickel, Selenium, Silver, Tin, Zinc, Aldrin+Dieldrin, DDT+DDE+DDD, Benzo(a)pyrene, Phenol, TPH C6 - C9, TPH C10 - C36, PAH Sum/TEQ, PCB's, Benzene, Toluene, Ethylbenzene, Total Xylenes, Cyanide, Flouride

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: 40-44 Burnett Street ESA
CLIENT: BPSM

Log of BH04

EASTING: 526063 GDA94
NORTHING: 5253126 GDA94
ELEVATION AND DATUM: 43.7 m AHD
TOTAL DEPTH (m): 2.7
NATURAL (m): WATER TABLE (m):

BORING LOCATION: North Hobart
DRILLING CONTRACTOR: Geo-Environmental Solutions P/L
EQUIPMENT/METHOD: Geoprobe LOGGED BY: G. McDonald
SAMPLING: Direct Push DATE: 21/10/2019

DEPTH (metres)	MATERIAL DESCRIPTION	Geology	USCS Lithology	Laboratory Sample	Field PID (ppm)	IB105 Analyte IL Exceedances	MONITORING WELL	ELEVATION (metres)
0.0–0.1	FILL: Concrete		P					43.6
0.2–0.8	FILL: SILTY SAND; pale grey, dry, dense, few fine to medium gravels	FILL	SM	BH04 0.5-0.6				43.4–43.2
0.8–1.0	FILL: SANDY CLAY; dark brown/dark grey, slightly moist, stiff, medium plasticity		CI					43.0–42.8
1.0–1.3	SANDY CLAY: yellow-brown, slightly moist, very stiff, medium plasticity	Q	CI					42.8–42.6
1.3–2.6	Silty SANDY CLAY: pale yellow-grey, slightly moist, very stiff to hard, low plasticity, some sandstone gravel	Rqpc	CL	BH04 1.5-1.6 BH04 2.5-2.6				42.4–41.2
2.6	MUDSTONE: fine grained, yellow/yellow-brown, slightly moist to dry, very low strength, extremely weathered, clay properties. Refusal		Rock					41.0

Arsenic, Beryllium, Cadmium, Chromium, Chromium VI, Copper, Cobalt, Lead, Manganese, Mercury, Molybdenum, Nickel, Selenium, Silver, Tin, Zinc, Aldrin+Dieldrin, DDT+DDE+DDD, Benzo(a)pyrene, Phenol, TPH C6 - C9, TPH C10 - C36, PAH Sum/TEQ, PCB's, Benzene, Toluene, Ethylbenzene, Total Xylenes, Cyanide, Flouride

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: 40-44 Burnett Street ESA
CLIENT: BPSM

Log of BH05

EASTING: 526057 GDA94
NORTHING: 5253134 GDA94
ELEVATION AND DATUM: 43.6 m AHD
TOTAL DEPTH (m): 1.5
NATURAL (m): WATER TABLE (m):

BORING LOCATION: North Hobart
DRILLING CONTRACTOR: Geo-Environmental Solutions P/L
EQUIPMENT/METHOD: Geoprobe LOGGED BY: G. McDonald
SAMPLING: Direct Push DATE: 21/10/2019

DEPTH (metres)	MATERIAL DESCRIPTION	Geology	USCS Lithology	Laboratory Sample	Field PID (ppm)	IB105 Analyte IL Exceedances	MONITORING WELL	ELEVATION (metres)
0.0–0.1	FILL: Concrete	FILL	P					43.4
0.2–0.6	FILL: SILTY SAND; pale grey, dry, dense, few fine to medium gravels	FILL	SM	BH05 0.5-0.6		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		43.2 / 43.0
0.7–0.9	FILL: SANDY CLAY; dark brown/dark grey/orange-red, slightly moist, stiff, medium plasticity, assorted debris including house bricks	FILL	CI					42.8
1.0–1.3	SANDY CLAY: yellow-brown, slightly moist, very stiff, medium plasticity	Q	CI	BH05 1.2-1.3		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		42.6 / 42.4
1.4	MUDSTONE: fine grained, yellow/yellow-brown, slightly moist to dry, very low strength, extremely weathered, clay properties. Refusal	Rapc	Rock					42.2

IB105 Analyte IL Exceedances: Arsenic, Barium, Beryllium, Cadmium, Chromium, Chromium VI, Copper, Cobalt, Lead, Manganese, Mercury, Molybdenum, Nickel, Selenium, Silver, Tin, Zinc, Aldrin+Dieldrin, DDT+DDE+DDD, Benzo(a)pyrene, Phenol, TPH C6 - C9, TPH C10 - C36, PAH Sum/TEQ, PCB's, Benzene, Toluene, Ethylbenzene, Total Xylenes, Cyanide, Fluoride

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: 40-44 Burnett Street ESA
CLIENT: BPSM

Log of BH06

EASTING: 526054 GDA94
NORTHING: 5253140 GDA94
ELEVATION AND DATUM: 42.6 m AHD
TOTAL DEPTH (m): 0.5
NATURAL (m): WATER TABLE (m):

BORING LOCATION: North Hobart
DRILLING CONTRACTOR: Geo-Environmental Solutions P/L
EQUIPMENT/METHOD: Geoprobe LOGGED BY: G. McDonald
SAMPLING: Direct Push DATE: 21/10/2019

DEPTH (metres)	MATERIAL DESCRIPTION	Geology	USCS Lithology	Laboratory Sample	Field PID (ppm)	IB105 Analyte IL Exceedances	MONITORING WELL	ELEVATION (metres)
0.0	FILL: Concrete	FILL	P					
0.1								
0.2	FILL: SANDY CLAY; dark brown/dark grey/orange-red, slightly moist, stiff, medium plasticity, assorted debris including house bricks		Cl					42.4
0.3								
0.4	MUDSTONE: fine grained, yellow/yellow-brown, slightly moist to dry, very low strength, extremely weathered, clay properties. Refusal	Rqpc	Rock	BH06 0.4-0.5		1 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		42.2
0.5								

IB105 Analyte IL Exceedances: Arsenic, Barium, Beryllium, Cadmium, Chromium, Chromium VI, Copper, Cobalt, Lead, Manganese, Mercury, Molybdenum, Nickel, Selenium, Silver, Tin, Zinc, Aldrin+Dieldrin, DDT+DDE+DDD, Benzo(a)pyrene, Phenol, TPH C6 - C9, TPH C10 - C36, PAH Sum/TEQ, PCB's, Benzene, Toluene, Ethylbenzene, Total Xylenes, Cyanide, Fluoride

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: 40-44 Burnett Street ESA
CLIENT: BPSM

Log of BH08

EASTING: 526043 GDA94
NORTHING: 5253133 GDA94
ELEVATION AND DATUM: 43.9 m AHD
TOTAL DEPTH (m): 0.9
NATURAL (m): WATER TABLE (m):

BORING LOCATION: North Hobart
DRILLING CONTRACTOR: Geo-Environmental Solutions P/L
EQUIPMENT/METHOD: Geoprobe LOGGED BY: G. McDonald
SAMPLING: Direct Push DATE: 21/10/2019

DEPTH (metres)	MATERIAL DESCRIPTION	Geology	USCS Lithology	Laboratory Sample	Field PID (ppm)	IB105 Analyte IL Exceedances	MONITORING WELL	ELEVATION (metres)
0.0–0.4	FILL: Concrete	FILL	P					43.8
0.4–0.7	Silty SANDY CLAY: pale yellow-grey, slightly moist, very stiff to hard, low plasticity, some sandstone gravel	Rqpc	CL	BH08 0.5-0.6		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		43.4
0.7–0.9	MUDSTONE: fine grained, yellow/yellow-brown, slightly moist to dry, very low strength, extremely weathered, clay properties. Re		Rock					43.2 / 43.0

IB105 Analyte IL Exceedances: Arsenic, Barium, Beryllium, Cadmium, Chromium, Chromium VI, Copper, Cobalt, Lead, Manganese, Mercury, Molybdenum, Nickel, Selenium, Silver, Tin, Zinc, Aldrin+Dieldrin, DDT+DDE+DDD, Benzo(a)pyrene, Phenol, TPH C6 - C9, TPH C10 - C36, PAH Sum/TEQ, PCB's, Benzene, Toluene, Ethylbenzene, Total Xylenes, Cyanide, Fluoride

Tas EPA IB105 CLASSIFICATION: ☐ Level 1; 2 Level 2; 3 Level 3; 4 Level 4 SAMPLE IN EXCAVATION ✖ APPROXIMATE GROUNDFLOOR LEVEL

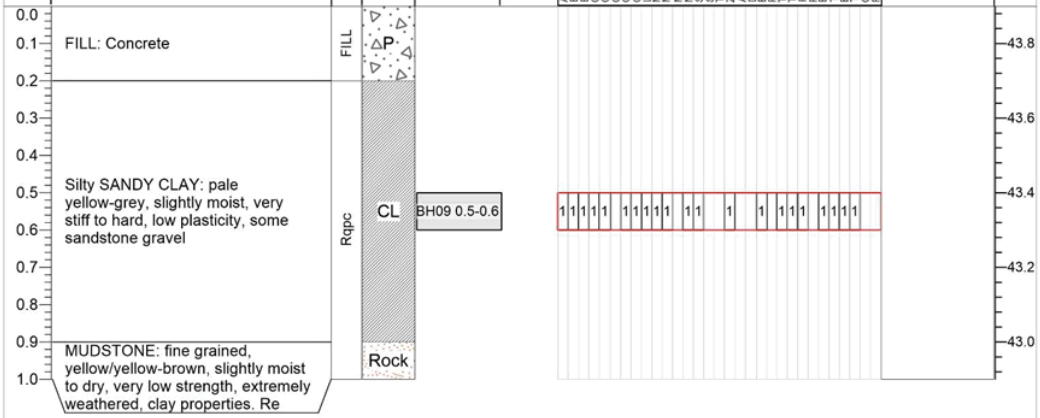
GES GEO-ENVIRONMENTAL SOLUTIONS

PROJECT: 40-44 Burnett Street ESA
CLIENT: BPSM

Log of BH09

EASTING: 526036 GDA94
NORTHING: 5253142 GDA94
ELEVATION AND DATUM: 43.9 m AHD
TOTAL DEPTH (m): 1
NATURAL (m): WATER TABLE (m):

BORING LOCATION: North Hobart
DRILLING CONTRACTOR: Geo-Environmental Solutions P/L
EQUIPMENT/METHOD: Geoprobe LOGGED BY: G. McDonald
SAMPLING: Direct Push DATE: 21/10/2019



Tas EPA IB105 CLASSIFICATION: ☐ Level 1; 2 Level 2; 3 Level 3; 4 Level 4 SAMPLE IN EXCAVATION ✕ APPROXIMATE GROUNDFLOOR LEVEL

Appendix 12 Certificate of Analysis

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: EM1917734	Page	: 1 of 18
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	: 40-44	Date Samples Received	: 23-Oct-2019 09:10
Order number	: ----	Date Analysis Commenced	: 23-Oct-2019
C-O-C number	: ----	Issue Date	: 29-Oct-2019 12:18
Sampler	: GM		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 20		
No. of samples analysed	: 20		

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. 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

RIGHT SOLUTIONS | RIGHT PARTNER

Page	: 2 of 18
Work Order	: EM1917734
Client	: GEO-ENVIRONMENTAL SOLUTIONS
Project	: 40-44

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by 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.

- 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.
- EG005T: EM1917734 #1, Poor matrix spike recovery for Manganese and Vanadium due to sample matrix. Confirmed by re-extraction and re-analysis.

Page : 3 of 18
Work Order : EM1917734
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : 40-44

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH01 0.5-0.6	BH01 1.5-1.6	BH01 2.5-2.6	BH02 0.5-0.6	BH02 1.5-1.6
				Client sampling date / time	21-Oct-2019 00:00	21-Oct-2019 00:00	21-Oct-2019 00:00	21-Oct-2019 00:00	21-Oct-2019 00:00
Compound	CAS Number	LOR	Unit		EM1917734-001	EM1917734-002	EM1917734-003	EM1917734-004	EM1917734-005
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		20.2	16.5	17.2	24.6	21.9
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	<5	<5	<5	<5
Barium	7440-39-3	10	mg/kg		40	160	30	70	940
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		7	3	5	13	3
Cobalt	7440-48-4	2	mg/kg		7	4	4	25	7
Copper	7440-50-8	5	mg/kg		15	7	<5	28	6
Lead	7439-92-1	5	mg/kg		<5	5	6	<5	7
Manganese	7439-96-5	5	mg/kg		38	397	306	342	900
Nickel	7440-02-0	2	mg/kg		7	7	8	20	13
Selenium	7782-49-2	5	mg/kg		<5	<5	<5	<5	<5
Vanadium	7440-62-2	5	mg/kg		42	10	12	75	21
Zinc	7440-66-6	5	mg/kg		9	27	36	19	30
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

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Work Order : EM1917734
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : 40-44

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH01 0.5-0.6	BH01 1.5-1.6	BH01 2.5-2.6	BH02 0.5-0.6	BH02 1.5-1.6
				Client sampling date / time	21-Oct-2019 00:00	21-Oct-2019 00:00	21-Oct-2019 00:00	21-Oct-2019 00:00	21-Oct-2019 00:00
Compound	CAS Number	LOR	Unit		EM1917734-001	EM1917734-002	EM1917734-003	EM1917734-004	EM1917734-005
					Result	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	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		0.6	0.6	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		1.2	1.2	1.2	1.2	1.2
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		82.1	87.2	83.6	81.9	78.1
2-Chlorophenol-D4	93951-73-6	0.5	%		80.7	84.4	80.9	79.4	75.1
2.4.6-Tribromophenol	118-79-6	0.5	%		65.6	62.7	59.8	60.9	57.7

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Work Order : EM1917734
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : 40-44

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH01 0.5-0.6	BH01 1.5-1.6	BH01 2.5-2.6	BH02 0.5-0.6	BH02 1.5-1.6
				Client sampling date / time	21-Oct-2019 00:00	21-Oct-2019 00:00	21-Oct-2019 00:00	21-Oct-2019 00:00	21-Oct-2019 00:00
Compound	CAS Number	LOR	Unit		EM1917734-001	EM1917734-002	EM1917734-003	EM1917734-004	EM1917734-005
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		101	115	99.8	97.7	106
Anthracene-d10	1719-06-8	0.5	%		78.3	77.9	76.3	77.7	72.4
4-Terphenyl-d14	1718-51-0	0.5	%		85.0	89.2	84.4	85.6	80.8
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		73.9	78.4	68.2	72.4	72.9
Toluene-D8	2037-26-5	0.2	%		75.3	81.0	73.2	71.1	76.2
4-Bromofluorobenzene	460-00-4	0.2	%		87.8	91.0	81.9	79.7	87.7

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Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : 40-44

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH02 2.3-2.4	BH03 0.5-0.6	BH03 1.5-1.6	BH04 0.5-0.6	BH04 1.5-1.6
				Client sampling date / time	21-Oct-2019 00:00	21-Oct-2019 00:00	21-Oct-2019 00:00	21-Oct-2019 00:00	21-Oct-2019 00:00
Compound	CAS Number	LOR	Unit		EM1917734-006	EM1917734-007	EM1917734-008	EM1917734-009	EM1917734-010
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		13.0	23.4	13.2	3.0	15.3
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	<5	<5	<5	<5
Barium	7440-39-3	10	mg/kg		20	120	70	<10	60
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		5	22	8	<2	4
Cobalt	7440-48-4	2	mg/kg		11	103	12	<2	8
Copper	7440-50-8	5	mg/kg		<5	45	15	<5	<5
Lead	7439-92-1	5	mg/kg		<5	<5	11	<5	8
Manganese	7439-96-5	5	mg/kg		232	754	1340	<5	366
Nickel	7440-02-0	2	mg/kg		10	33	23	<2	10
Selenium	7782-49-2	5	mg/kg		<5	<5	<5	<5	<5
Vanadium	7440-62-2	5	mg/kg		11	73	31	<5	15
Zinc	7440-66-6	5	mg/kg		39	37	25	<5	43
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benz[a]anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

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Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : 40-44

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH02 2.3-2.4	BH03 0.5-0.6	BH03 1.5-1.6	BH04 0.5-0.6	BH04 1.5-1.6
				Client sampling date / time	21-Oct-2019 00:00	21-Oct-2019 00:00	21-Oct-2019 00:00	21-Oct-2019 00:00	21-Oct-2019 00:00
Compound	CAS Number	LOR	Unit		EM1917734-006	EM1917734-007	EM1917734-008	EM1917734-009	EM1917734-010
					Result	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	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		0.6	0.6	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		1.2	1.2	1.2	1.2	1.2
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		83.4	79.8	82.1	83.3	92.2
2-Chlorophenol-D4	93951-73-6	0.5	%		80.5	77.0	77.8	78.1	85.0
2.4.6-Tribromophenol	118-79-6	0.5	%		58.6	59.7	58.4	48.0	65.4

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Work Order : EM1917734
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : 40-44

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH02 2.3-2.4	BH03 0.5-0.6	BH03 1.5-1.6	BH04 0.5-0.6	BH04 1.5-1.6
				Client sampling date / time	21-Oct-2019 00:00	21-Oct-2019 00:00	21-Oct-2019 00:00	21-Oct-2019 00:00	21-Oct-2019 00:00
Compound	CAS Number	LOR	Unit		EM1917734-006	EM1917734-007	EM1917734-008	EM1917734-009	EM1917734-010
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		112	110	98.2	99.1	118
Anthracene-d10	1719-06-8	0.5	%		77.4	74.3	75.0	76.1	81.1
4-Terphenyl-d14	1718-51-0	0.5	%		85.8	82.3	82.9	83.4	89.8
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		55.5	78.0	59.7	80.8	64.5
Toluene-D8	2037-26-5	0.2	%		57.5	83.5	63.7	83.1	64.9
4-Bromofluorobenzene	460-00-4	0.2	%		63.6	89.9	71.1	97.2	75.3

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Work Order : EM1917734
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : 40-44

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH04 2.5-2.6	BH05 0.5-0.6	BH05 1.2-1.3	BH06 0.4-0.5	BH07 0.5-0.6
				Client sampling date / time	21-Oct-2019 00:00	21-Oct-2019 00:00	21-Oct-2019 00:00	21-Oct-2019 00:00	21-Oct-2019 00:00
Compound	CAS Number	LOR	Unit		EM1917734-011	EM1917734-012	EM1917734-013	EM1917734-014	EM1917734-015
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		13.2	4.5	11.3	10.0	17.2
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	<5	<5	<5	<5
Barium	7440-39-3	10	mg/kg		40	20	270	730	170
Beryllium	7440-41-7	1	mg/kg		<1	<1	<1	2	2
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		4	2	10	3	4
Cobalt	7440-48-4	2	mg/kg		4	<2	12	35	188
Copper	7440-50-8	5	mg/kg		<5	<5	18	<5	106
Lead	7439-92-1	5	mg/kg		9	<5	65	17	<5
Manganese	7439-96-5	5	mg/kg		337	12	146	110	712
Nickel	7440-02-0	2	mg/kg		6	<2	16	32	62
Selenium	7782-49-2	5	mg/kg		<5	<5	<5	<5	<5
Vanadium	7440-62-2	5	mg/kg		9	<5	21	8	141
Zinc	7440-66-6	5	mg/kg		28	14	64	56	26
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	0.5	<0.1	<0.1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benz[a]anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

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Work Order : EM1917734
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : 40-44

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH04 2.5-2.6	BH05 0.5-0.6	BH05 1.2-1.3	BH06 0.4-0.5	BH07 0.5-0.6
				Client sampling date / time	21-Oct-2019 00:00	21-Oct-2019 00:00	21-Oct-2019 00:00	21-Oct-2019 00:00	21-Oct-2019 00:00
Compound	CAS Number	LOR	Unit		EM1917734-011	EM1917734-012	EM1917734-013	EM1917734-014	EM1917734-015
					Result	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	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		0.6	0.6	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		1.2	1.2	1.2	1.2	1.2
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		78.7	82.4	82.3	81.5	80.8
2-Chlorophenol-D4	93951-73-6	0.5	%		77.4	81.0	81.3	79.0	79.7
2.4.6-Tribromophenol	118-79-6	0.5	%		54.9	58.3	62.6	58.2	58.1

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Work Order : EM1917734
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : 40-44

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH04 2.5-2.6	BH05 0.5-0.6	BH05 1.2-1.3	BH06 0.4-0.5	BH07 0.5-0.6
				Client sampling date / time	21-Oct-2019 00:00	21-Oct-2019 00:00	21-Oct-2019 00:00	21-Oct-2019 00:00	21-Oct-2019 00:00
Compound	CAS Number	LOR	Unit		EM1917734-011	EM1917734-012	EM1917734-013	EM1917734-014	EM1917734-015
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		103	96.5	101	109	111
Anthracene-d10	1719-06-8	0.5	%		74.4	75.7	77.7	74.8	76.7
4-Terphenyl-d14	1718-51-0	0.5	%		80.2	84.5	84.2	82.5	86.5
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		79.3	70.2	74.1	65.5	68.9
Toluene-D8	2037-26-5	0.2	%		79.0	70.0	76.8	67.9	73.5
4-Bromofluorobenzene	460-00-4	0.2	%		87.7	78.0	83.1	76.9	77.2

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Work Order : EM1917734
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : 40-44

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH07 1.3-1.4	BH08 0.5-0.6	BH09 0.5-0.6	Duplicate	----
			Client sampling date / time	21-Oct-2019 00:00	21-Oct-2019 00:00	21-Oct-2019 00:00	21-Oct-2019 00:00	----
Compound	CAS Number	LOR	Unit	EM1917734-016	EM1917734-017	EM1917734-018	EM1917734-019	--------
				Result	Result	Result	Result	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	14.4	16.4	21.9	14.5	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	<5	----
Barium	7440-39-3	10	mg/kg	1960	250	10	320	----
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	2	<1	<1	<1	----
Chromium	7440-47-3	2	mg/kg	<2	8	10	3	----
Cobalt	7440-48-4	2	mg/kg	50	33	7	5	----
Copper	7440-50-8	5	mg/kg	13	9	11	9	----
Lead	7439-92-1	5	mg/kg	8	6	<5	8	----
Manganese	7439-96-5	5	mg/kg	10200	50	12	499	----
Nickel	7440-02-0	2	mg/kg	35	23	5	9	----
Selenium	7782-49-2	5	mg/kg	<5	<5	<5	<5	----
Vanadium	7440-62-2	5	mg/kg	27	16	40	12	----
Zinc	7440-66-6	5	mg/kg	48	29	10	34	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
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	<0.5	<0.5	<0.5	<0.5	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----

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Work Order : EM1917734
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : 40-44

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH07 1.3-1.4	BH08 0.5-0.6	BH09 0.5-0.6	Duplicate	----
				Client sampling date / time	21-Oct-2019 00:00	21-Oct-2019 00:00	21-Oct-2019 00:00	21-Oct-2019 00:00	----
Compound	CAS Number	LOR	Unit		EM1917734-016	EM1917734-017	EM1917734-018	EM1917734-019	--------
					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	<0.5	<0.5	<0.5	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		0.6	0.6	0.6	0.6	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		1.2	1.2	1.2	1.2	----
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	<100	<100	<100	----
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	----
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	<100	<100	<100	----
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	----
^ >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	%		83.6	80.1	82.9	82.6	----
2-Chlorophenol-D4	93951-73-6	0.5	%		80.0	79.8	81.5	80.7	----
2.4.6-Tribromophenol	118-79-6	0.5	%		60.8	60.4	59.8	61.4	----

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Work Order : EM1917734
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : 40-44

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH07 1.3-1.4	BH08 0.5-0.6	BH09 0.5-0.6	Duplicate	----
			Client sampling date / time	21-Oct-2019 00:00	21-Oct-2019 00:00	21-Oct-2019 00:00	21-Oct-2019 00:00	----
Compound	CAS Number	LOR	Unit	EM1917734-016	EM1917734-017	EM1917734-018	EM1917734-019	--------
				Result	Result	Result	Result	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	102	100	100.0	112	----
Anthracene-d10	1719-06-8	0.5	%	76.8	76.1	75.7	76.9	----
4-Terphenyl-d14	1718-51-0	0.5	%	85.5	84.4	85.2	87.3	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	79.6	91.9	57.5	76.3	----
Toluene-D8	2037-26-5	0.2	%	82.4	91.8	60.1	79.7	----
4-Bromofluorobenzene	460-00-4	0.2	%	93.5	102	69.1	88.1	----

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Work Order	: EM1917734
Client	: GEO-ENVIRONMENTAL SOLUTIONS
Project	: 40-44

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	Rinsate	----	----	----	----
				Client sampling date / time	21-Oct-2019 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM1917734-020	--------	--------	--------	--------
					Result	----	----	----	----
EG020T: Total 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		<0.001	----	----	----	----
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	----	----	----	----
EG035T: Total Recoverable 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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Work Order	: EM1917734
Client	: GEO-ENVIRONMENTAL SOLUTIONS
Project	: 40-44

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	Rinsate	----	----	----	----
				Client sampling date / time	21-Oct-2019 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM1917734-020	--------	--------	--------	--------
					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	%		32.9	----	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%		84.2	----	----	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%		76.3	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		85.6	----	----	----	----
Anthracene-d10	1719-06-8	1.0	%		91.3	----	----	----	----
4-Terphenyl-d14	1718-51-0	1.0	%		95.2	----	----	----	----

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Work Order	: EM1917734
Client	: GEO-ENVIRONMENTAL SOLUTIONS
Project	: 40-44

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	Rinsate	----	----	----	----
				Client sampling date / time	21-Oct-2019 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM1917734-020	--------	--------	--------	--------
					Result	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		98.6	----	----	----	----
Toluene-D8	2037-26-5	2	%		101	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		112	----	----	----	----

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Work Order : EM1917734
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : 40-44

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

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES1935030**	Page	: 1 of 6
Client	: GEO-ENVIRONMENTAL SOLUTIONS	Laboratory	: Environmental Division Sydney
Contact	: DR JOHN PAUL CUMMING	Contact	: Shirley LeCornu
Address	: 29 KIRKSWAY PLACE BATTERY POINT TASMANIA, AUSTRALIA 7004	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 03 6223 1839	Telephone	: +6138549 9630
Project	: 40-44	Date Samples Received	: 24-Oct-2019 12:45
Order number	: ----	Date Analysis Commenced	: 25-Oct-2019
C-O-C number	: ----	Issue Date	: 31-Oct-2019 14:22
Sampler	: GM		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 1		
No. of samples analysed	: 1		

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. 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*
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Evie Sidarta	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

RIGHT SOLUTIONS | RIGHT PARTNER

Page	: 2 of 6
Work Order	: ES1935030
Client	: GEO-ENVIRONMENTAL SOLUTIONS
Project	: 40-44

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by 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.

- 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.

Page : 3 of 6
Work Order : ES1935030
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : 40-44

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	ILS	----	----	----	----
				Client sampling date / time	21-Oct-2019 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES1935030-001	--------	--------	--------	--------
					Result	----	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		15.6	----	----	----	----
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	----	----	----	----
Barium	7440-39-3	10	mg/kg		640	----	----	----	----
Beryllium	7440-41-7	1	mg/kg		2	----	----	----	----
Boron	7440-42-8	50	mg/kg		<50	----	----	----	----
Cadmium	7440-43-9	1	mg/kg		<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg		3	----	----	----	----
Cobalt	7440-48-4	2	mg/kg		113	----	----	----	----
Copper	7440-50-8	5	mg/kg		152	----	----	----	----
Lead	7439-92-1	5	mg/kg		<5	----	----	----	----
Manganese	7439-96-5	5	mg/kg		715	----	----	----	----
Nickel	7440-02-0	2	mg/kg		90	----	----	----	----
Selenium	7782-49-2	5	mg/kg		<5	----	----	----	----
Vanadium	7440-62-2	5	mg/kg		233	----	----	----	----
Zinc	7440-66-6	5	mg/kg		40	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	----	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	----	----	----	----
Fluorene	86-73-7	0.5	mg/kg		<0.5	----	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg		<0.5	----	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	----	----	----	----
Pyrene	129-00-0	0.5	mg/kg		<0.5	----	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	----	----	----	----

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Work Order : ES1935030
Client : GEO-ENVIRONMENTAL SOLUTIONS
Project : 40-44

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	ILS	----	----	----	----
				Client sampling date / time	21-Oct-2019 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES1935030-001	--------	--------	--------	--------
					Result	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		0.6	----	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		1.2	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	----	----	----	----
C10 - C14 Fraction	----	50	mg/kg		<50	----	----	----	----
C15 - C28 Fraction	----	100	mg/kg		<100	----	----	----	----
C29 - C36 Fraction	----	100	mg/kg		<100	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	----	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	----	----	----	----
>C10 - C16 Fraction	----	50	mg/kg		<50	----	----	----	----
>C16 - C34 Fraction	----	100	mg/kg		<100	----	----	----	----
>C34 - C40 Fraction	----	100	mg/kg		<100	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	----	----	----
Toluene	108-88-3	0.5	mg/kg		<0.5	----	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	----	----	----
^ Sum of BTEX	----	0.2	mg/kg		<0.2	----	----	----	----
^ Total Xylenes	----	0.5	mg/kg		<0.5	----	----	----	----
Naphthalene	91-20-3	1	mg/kg		<1	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		86.6	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		80.6	----	----	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%		66.0	----	----	----	----

Page	: 5 of 6
Work Order	: ES1935030
Client	: GEO-ENVIRONMENTAL SOLUTIONS
Project	: 40-44

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	ILS	----	----	----	----
				Client sampling date / time	21-Oct-2019 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES1935030-001	--------	--------	--------	--------
					Result	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		93.6	----	----	----	----
Anthracene-d10	1719-06-8	0.5	%		94.2	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		82.2	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		103	----	----	----	----
Toluene-D8	2037-26-5	0.2	%		108	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		105	----	----	----	----

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Work Order	: ES1935030
Client	: GEO-ENVIRONMENTAL SOLUTIONS
Project	: 40-44

Surrogate Control Limits

Sub-Matrix: SOIL

Compound	CAS Number	Recovery Limits (%) Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2.4.6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	133
Toluene-D8	2037-26-5	74	132
4-Bromofluorobenzene	460-00-4	72	130

MILAN PRODANOVIC B.E. PEng
TRAFFIC ENGINEERING & ROAD SAFETY

TRAFFIC IMPACT ASSESSMENT

PROPOSED RESIDENTIAL APARTMENT
AND COMMERCIAL DEVELOPMENT

40 & 42-44 BURNETT STREET
NORTH HOBART

APRIL 2020

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APRIL 2020

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CONTENTS

REFERENCES:

- Australian Standard AS 1742.2-2009 – Manual of uniform traffic control devices Part 2: Traffic control devices for general use
- Road Traffic Authority NSW – Guide to Traffic Generating Developments, 2002
- Road and Maritime Services (Transport) - Guide to Traffic Generating Developments; Updated traffic surveys (August 2013)
- AUSTROADS – Guide to Traffic Management Part 9: Traffic Operations (2019)
- Australian Standard AS 2890 – Parking Facilities, Part 1 – Off-street car parking
- Australian Standard AS 2890 – Parking Facilities, Part 2 – Off-street commercial vehicle facilities
- Australian Standard AS 2890 – Parking Facilities, Part 6 – Off-street parking for people with disabilities
- AUSTROADS – Guide to Road Safety Part 6: Road Safety Audit (2009)
- AUSTROADS – Guide to Traffic Management Part 6: Intersections, Interchanges and Crossings (2019)
- AUSTROADS – Guide to Traffic Management Part 12: Traffic Impacts of Developments (2019)
- Department of State Growth publication: *A Framework for Undertaking Traffic Impact Assessments (2007)*
- Hobart Interim Planning Scheme 2015

1. INTRODUCTION

A development application is to be lodged with the Hobart City Council for a residential apartment and commercial development at 40 & 42-44 Burnett Street, North Hobart.

This Traffic Impact Assessment (TIA) report has been prepared in support of the proposed development.

The TIA report considers the existing road and traffic characteristics along Burnett Street in the vicinity of the development site. An assessment is made of the traffic activity that the development is likely to generate and the effect that this traffic will have on Burnett Street.

Consideration is given to the required access arrangements and available sight distances along Burnett Street at the access driveway to the development site. An assessment is also made of the car parking provisions and the internal road and parking layout within the development site having regard to applicable Australian Standards and the Hobart Interim Planning Scheme 2015 requirements.

This report is based on the Department of State Growth publication: *A Framework for Undertaking Traffic Impact Assessments*. The techniques used in the investigation and assessment incorporate best practice road safety and traffic management principles.

2. SITE DESCRIPTION

The proposed development is located at 40 & 42-44 Burnett Street. The property is situated on the southern side of Burnett Street, some 50 metres to the west of the Argyle Street intersection.

The Burnett Street/Elizabeth Street intersection is located about 160 metres to the west of the site.

The property to be developed is highlighted in Figure 2.1.

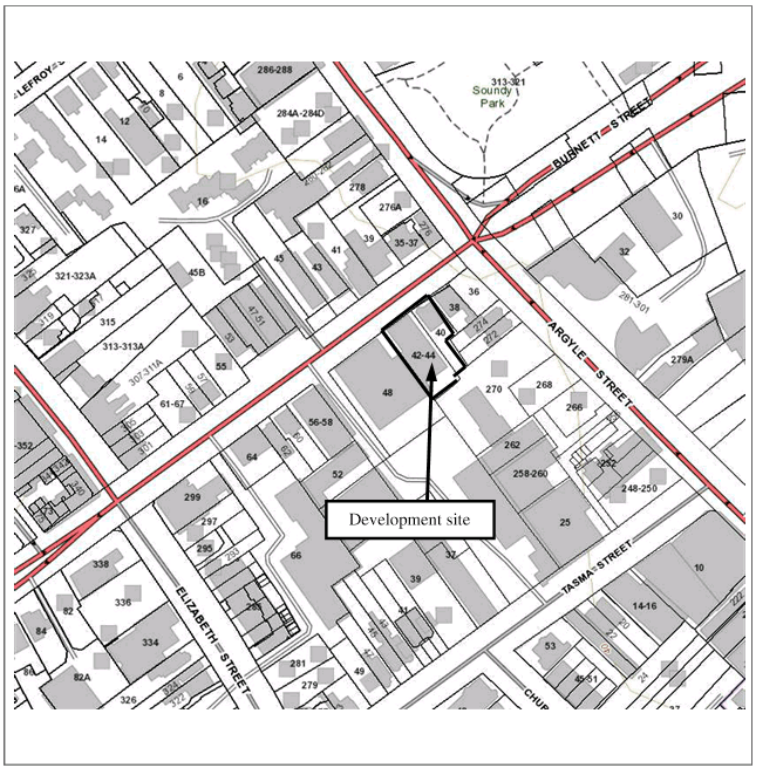


Figure 2.1: Area map showing location of proposed development

3. DEVELOPMENT PROPOSAL

A residential apartments and commercial development is proposed at 40- &42-44 Burnett Street, North Hobart.

The existing buildings on the properties are to be demolished.

The proposed development will have seven levels and comprise:

- 3 one-bedroom apartments;
- 16 two-bedroom apartments;
- 12 three-bedroom apartments;
- 139m^2 commercial space on the ground floor, fronting onto Burnett Street; and
- 61 parking spaces on the ground, lower ground and basement levels.

Vehicle access into the site will be via a 5.8 metre wide access driveway off the southern side of Burnett Street. Within the proposed building there will be one lane ramps between floor levels for car access with traffic signals to control opposing vehicle movements.

The design drawings for the proposed development are included with this report as Attachment A.

4. EXISTING ROAD AND TRAFFIC ENVIRONMENT

4.1 Road Characteristics

The one road of relevance to the proposed development under consideration is the section of Burnett Street between Elizabeth Street and Argyle Street.

This section of Burnett Street has a straight alignment with a slight downgrade towards the east.

The 50 km/h urban speed limit applies to Burnett Street.

The Burnett Street/Elizabeth Street and Burnett Street/Argyle Street intersections are both controlled by traffic signals.

Burnett Street is four lanes wide – two lanes in each direction. The kerbside lanes are normally used for on-street parking, but no stopping 'clearway' restrictions apply during the peak periods on weekdays.

The specific parking controls on the southern side of Burnett Street, in the vicinity of the development site, are as follows:

- 'No Stopping', 7.30 – 9.00am and 4.30 – 6.00pm, Monday to Friday;
- half hour time limited parking, 9.00 am – 4.30pm, Monday to Friday; and
- unrestricted parking at other times

There are around 3.0m wide footpaths on both sides of Burnett Street.

Views along Burnett Street are shown in Photographs 4.1 and 4.2. The proposed position of the access driveway to the development site is shown in Photograph 4.3.

Photograph 4.1: View to east along Burnett Street with the development site on the right

Photograph 4.2: View to west along Burnett Street with the development site on the left

Photograph 4.3: View of approximate location of proposed access driveway to development site from Burnett Street at roll door

4.2 Traffic Activity

In connection with another development, this consultant has previously undertaken a traffic survey on this section of Burnett Street. The survey was carried out approximately 50 metres to the east of the Elizabeth Street intersection and the volume of traffic travelling along Burnett Street at that location would be very similar to that passing the development site that is the subject of this report.

The morning peak period was counted on Wednesday 1 November 2017, between 8.00am and 9.00am. During that time period, it was found that there were 1,300 vehicles/hour travelling along Burnett Street (550 vehicles/hour travelling eastbound and 750 vehicles/hour travelling westbound).

The afternoon peak period was counted on Tuesday 31 October 2017, between 4.30pm and 5.30pm. During that time period, it was found that there were 1,099 vehicles/hour travelling along Burnett Street (565 vehicles/hour travelling eastbound and 534 vehicles/hour travelling westbound).

4.3 Crash Record

All crashes that result in personal injury are required to be reported to Tasmania Police. Tasmania Police record all crashes that they attend. Any crashes that result in property damage only, which are reported to Tasmania Police, are also recorded even though they may not visit the site.

Details of reported crashes are collated and recorded on a computerised database that is maintained by the Department of State Growth.

The crash history in the vicinity of the proposed development has been examined for the last five years (1 October 2014 – 1 October 2019).

Along the section of Burnett Street between Elizabeth and Argyle Streets there was a total of sixteen reported crashes. These all resulted in property damage only. Four of the crashes were 'parallel lane/side swipe' type collisions and three involved collisions with parked cars. Overall, there was no strong pattern or commonality amongst the crash types.

At the Burnett Street/Argyle Street intersection there was a total of twenty reported crashes (three minor injury, two first aid and fifteen property damage only). Ten of the crashes were rear end type collisions and there were three crashes involving vehicles losing control. There was no pattern of crashes that could be treated by making adjustments to the traffic signals.

4.4 Other Transport Modes

Metro operates regular bus services in the vicinity of the development site.

Elizabeth Street is part of the Turn Up and Go (North) route which operates every 10 minutes Monday to Friday 7am – 7pm; every 20 minutes Saturdays 7am – 7pm; and every 30 minutes Sundays and Public Holidays 7am – 7pm.

Service number 540 runs between Mount Stuart, North Hobart, West Hobart and the city centre. This service operates at approximately 40 minute intervals on weekdays with additional service during the peak periods.

This makes public transport an attractive option for trips associated with the development site, particularly for people travelling to and from the city centre.

There are also bicycle lanes along the one way sections of Argyle Street and Campbell Street for northbound and southbound travel respectively to and from the city centre and along Argyle Street to the north of Burnett Street for both directions of travel.

5. TRAFFIC GENERATION BY THE DEVELOPMENT

The expected traffic generation by the proposed residential apartments has been based on findings from surveys by this consultant as well as based on the information and advice contained in the Roads and Maritime Services (New South Wales) Guide to Traffic Generating Developments, Version 2.2, October 2002.

Residential apartments

The residential apartments will have one to three bedrooms. Each apartment will be provided with at least one and mostly two car parking spaces in the ground floor, lower ground floor and basement floor car parking levels.

The updated 'Technical Direction' to the Roads and Maritime Services Guide dated August 2013 advises that the trip generation for residential dwellings in regional areas of New South Wales is 7.4 trips/dwelling/day.

This is consistent with findings by this consultant for dwellings in Tasmania. Surveys in the built-up areas of Tasmania over a number of years have found that typically this figure is 8.0 trips/dwelling/day with smaller residential units generating around 4 trips/unit/day and larger units generating around 6 trip/unit/day.

As has been outlined in TIA reports by this consultant for other developments, peak hour traffic surveys have been undertaken at other existing unit developments in the Hobart area. One of these was on Sandy Bay Road in 2015 at the apartments in the Governor's Square development at 74 Sandy Bay Road which have car parking access off Sandy Bay Road. The traffic generation by these Governor's Square apartments during the peak hour was 3.75 vehicles/apartment/hour. These apartments each have two bedrooms.

In addition to the above, the following points are also relevant in estimating the traffic generation by the proposed development:

- the apartments in the development will have access to mostly two on-site car parking spaces;
- the development site is very close to the North Hobart shopping centre (under 400m walking distance to middle of the centre);
- the development is within easy walking distance of the North Hobart shopping centre;
- it only takes about 15 minutes to reach the city centre on foot;
- high frequency bus services pass along Elizabeth Street in close proximity to the development site; and
- bicycle lanes have been provided along Argyle and Campbell Streets.

Based on the above, but mainly of the car parking access, the proposed apartments are expected to generate slightly more traffic activity than the Grosvenor Square apartments. at a rate of 5.0 vehicles/apartment/day.

As indicated in the Roads and Maritime Services guide, the trip generation rates for medium density residential flat buildings are as follows:

Small units and flats (up to two bedrooms):

- daily vehicle trips = 4-5 per dwelling;
- weekday peak hour vehicle trips = 0.4-0.5 per dwelling.

Larger units and town houses (three or more bedrooms):

- daily vehicle trips = 5.0-6.5 per dwelling;
- weekday peak hour vehicle trips = 0.5-0.65 per dwelling.

The proposed development contains 31 apartments. There are 3 one-bedroom apartments, 16 two-bedroom apartments and 12 three-bedroom apartments.

Again, this suggests a trip generation rate of 5 vehicles/day/apartment is applicable.

The estimated trip generation for the apartments are:

- daily vehicle trips = 155 vehicles/day;
- weekday peak hour vehicle trips = 16 vehicles/hour.

Commercial tenancy

The Roads and Maritime Services guide indicates trip generation rates for office and commercial are:

- daily vehicle trips = 10 per 100m^2 gross floor area
- afternoon peak hour vehicle trips = 2 per 100m^2 gross floor area

The proposed development will have a 139m^2 of commercial floor space, so the expected traffic generation is:

- daily vehicle trips = 14 vehicles/day;
- afternoon peak hour vehicle trips = 3 vehicles/hour.

The trip generation associated with the different use activities in the proposed development are summarised in Table 5.1.

	DAILY VEHICLES	AFTERNOON PEAK HOUR VEHICLES
31 Apartments	155	16
139m^2 Commercial	14	3
Total	**169**	**19**

Table 5.1: Summary of traffic generation

6. TRAFFIC ASSESSMENT AND IMPACT

This section of the report evaluates the impact that the expected traffic from the proposed development will have on the adjacent road network.

Consideration is given to the adequacy of sight distances at the development driveway access. Car parking provision and the internal road and parking layout are also reviewed.

6.1 Operational Impact of Increased Traffic Activity

The Department of State Growth publication, A Framework for Undertaking Traffic Impact Assessments states that the traffic implications associated with a development should be tested for the tenth year after the opening date.

As the road network in central Hobart approaches saturation conditions during the peak periods, the capacity for unrestrained growth is limited. Accordingly, traffic growth along Burnett Street is assumed to be 1% per annum.

Applying twelve years' growth to the traffic survey that was conducted in October/November 2017 gives traffic flows along Burnett Street of 1,465 vehicles/hour in the morning peak and 1,238 vehicles/hour in the afternoon peak.

The trip generation associated with the proposed residential apartments and commercial development has been calculated to be up to 19 vehicles/hour during the afternoon peak hour. This is not a particularly high traffic movements for a development, one vehicle every three minutes during peak hour periods and even less at other times.

The traffic signals at Burnett Street/Argyle Street will create gaps in the traffic stream that will make it easier for traffic turning in and out of the development site.

The low number of private vehicle movements that will be generated by the development combined with the gaps in the traffic stream that will be generated by the upstream traffic signals means that the access to and from the development site will operate without any significant queuing or delay.

This reflects the operation of all the other existing accesses along this section of Burnett Street that have been and are operating satisfactorily.

6.2 Assessment of Available Sight Distances

Safe intersection sight distances for private driveways are set out in AS 2890.1 as a requirement of Clause E6.7.2 A1. It states: *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.

AS 2890.1 details the desirable sight distance to approaching vehicles at 50 km/h on public roads from a driveway, such as is under consideration in this assessment, is 69m. The approach 85th percentile vehicle speeds at this location would be a little less than the speed limit.

Sight distance for vehicles turning out of the development site has been measured from the point where a vehicle would stop and give way (around 2.5 metres back from the edge of the road).

The sight distance to the left (looking west) for vehicles turning out of the development site is over 100 metres (Photograph 6.1).

The sight distance to the right (looking east) for vehicles turning out of the development site is over 100 metres (Photograph 6.2).

Sight distance from a vehicle travelling east along Burnett Street to a vehicle waiting to turn right into the development site is over 100 metres (Photograph 6.3).

The sight distance to the east for a vehicle turning right into the development site is over 100 metres (Photograph 6.4).

All of these sight distances exceed the Planning Scheme requirements.

Consideration has also been given to the required sight triangle between motorists exiting the driveway and pedestrians approaching along the Burnett Street footpath, as indicated in Figure 3.3 of AS 2890.1.

The pedestrian sight triangle for vehicles entering Burnett Street will be provided as required by AS 2890.1.

Photograph 6.1: View to west along Burnett Street from the access to the proposed development

Photograph 6.2: View to east along Burnett Street from the access to the proposed development

Photograph 6.3: View to west, back along Burnett Street, from the rear of a vehicle waiting to turn right into the site

Photograph 6.4: View to east along Burnett Street, from a vehicle waiting to turn right into the proposed development

6.3 Car Parking Provision

Table E6.1 in the Parking and Access Code of the Hobart Interim Planning Scheme 2015 sets out the number of car parking spaces required for various land uses.

The planning scheme requires one parking space for residential apartments with one bedroom and two parking spaces for residential apartments with two or more bedrooms, plus one visitor parking space per four residential apartments

For the proposed development this equates to:

(1 x 3) + (2 x 28) + (0.25 x 31) = 3 + 56 + 8 = 67 spaces.

The planning scheme requires 1 parking space for each 30m^2 of floor area for business and professional services use. This equates to 5 parking spaces for the commercial floor area of the development.

The total planning scheme parking requirement for the proposed development is 72 car parking spaces.

The development site has a number of characteristics that are likely to reduce the reliance of the residential occupants travelling by private car:

- the development is within an easy short walking distance of the North Hobart shopping centre;
- it only takes about 15 minutes to reach the Hobart city centre on foot;
- high frequency bus services pass along Elizabeth Street in close proximity to the development site; and
- bicycle lanes have been provided along Argyle and Campbell Streets.

These characteristics will combine to substantially reduce the reliance of the development's residents on private car travel and it is considered that the Planning Scheme parking requirements for the apartments can be reduced by 25%, from 67 to 50 parking spaces.

Consequently, the required parking for the proposed apartment development is considered to be 55 car parking spaces plus 5 car parking spaces for the commercial tenancy, a total of 60 car parking spaces.

The proposed development includes 61 parking spaces.

It is therefore concluded that the car parking supply on the site will be more than sufficient to meet the parking demand.

6.4 Internal Access Driveway and Parking Layout

The proposed access driveway to the development site will be 5.8m wide, which is sufficient to accommodate the two-way traffic movement.

Technical advice on the layout of circulation roadways and parking areas is contained in Australian Standard AS2890, Part 1: Off-street car parking.

The specific dimensions that have been assessed include the following:

- All residential parking spaces will be 5.4m long and 2.4m wide in accordance with minimum requirements for User Class 1A (as detailed in Figure 2.2 of AS 2890.1 for 90-degree parking);
- All commercial parking spaces for staff/employees will be 5.4m long and 2.4m wide in accordance with minimum requirements for User Class 1A (as detailed in Figure 2.2 of AS 2890.1 for 90-degree parking);
- There will be at least a 300mm clearance to the side walls and columns will be positioned correctly (0.75m back from back of parking bays) for door opening and manoeuvring (as detailed in Figure 2.2 and Figure 5.2 of AS 2890.1);
- The width of the parking aisle for the residential parking will be at least the minimum 5.8m and in the commercial parking area around 6.2-6.6m (as required in Figure 2.2 of AS 2890.1 for User Class 1A more than required for User Class 3 90-degree parking);
- There will be at least a 1.0m extension to the ends of the parking aisle for cars to reverse out of parking spaces (as detailed in Figure 2.3 of AS 2890.1);
- The security access gate will be within the building so space for one car to stop if necessary, before entering the building clear of the street;
- The height clearance will be a minimum of 2.2m in all trafficable areas as required by AS 2890.1, allowing for any beams;
- The grade of the ramps will be up to 25% with the addition of transition sections at each end. The 25% grade will be on the inside curve of the ramp with a lesser grade at the outside curve.

It was decided no motorcycle parking would be provided in the car park (normally 2 required). Instead, there will be parking for bicycles on each parking level which is more appropriate for the predominantly residential use of the building and bicycle lanes on nearby streets.

With all dimensions meeting the requirements of AS 2890.1, the driveway, parking spaces and circulation areas will be compliant with the standard and meet the Acceptable Solution for Clause E6.7.5.

The car parking is to be provided on the ground, lower ground and basement levels. Because of the constrained nature of the development site, it will not be possible to construct the ramps that connect the three levels of the car park sufficiently wide to accommodate simultaneous two-way traffic.

The ramp that connects the ground and lower ground levels and the ramp that connects the lower ground and basement levels will both be one-lane ramps controlled by traffic signals.

The parking associated with the commercial area and residential visitors will be provided on the ground level. Therefore, the only people using the ramps will be those who live in the residential apartments and will be familiar with this signal operation.

The grade of the ramps with transitions meets the requirements of AS 2890.1.

Technical advice on the operation of traffic signals is contained in the Austroads Guide to Traffic Management, Part 9: Traffic Operations. Appendix G gives guidance on signal timings.

Indicative settings for the traffic signals controlling the ramps as follows:

- 6 seconds – basic minimum green, allowing for a starting delay when the signal changes and for the number of vehicles waiting;
- 3 seconds – yellow time, warning that the phase is terminating (if the signals do not include a yellow signal, this time is to be added to the all-red time); and
- 9 seconds – all-red time, allowing for a vehicle crossing the stop line at the end of the yellow interval to clear the point where vehicles travelling in the opposite direction are queued (based on 35 metres between stop lines and a vehicle speed of 15 km/h).

The trip generation associated with the residential apartments is only 16 vehicles/hour and so there will be no capacity issues associated with the operation of the one-lane ramps.

Disabled car parking

There is not a requirement to provide disabled car parking for residential developments as proposed under the building code.

The commercial car parking will have only five car parking spaces. The Building Code of Australia state that where the car park has not more than five car parking spaces, a disabled parking space is not required.

It has been concluded there should not be a need for a marked disabled car parking space because this would reduce the parking supply to only four cars in this area.

Waste collection/servicing

The collection of domestic waste will be undertaken by arrangements with Hobart City Council.

The bins will be moved from the bin storage area just inside the building, as detailed on the site layout drawings, and along the driveway to the street frontage for collection,

Commercial tenancy serving and waste collection will be attended to by commercial or private contractors from on-street parking, some occurring outside business hours, as is normal for businesses in the Hobart area.

7. SUMMARY AND RECOMMENDATIONS

A development is proposed at 40 & 42-44 Burnett Street, North Hobart. It will include 31 residential apartments and 139m^2 of commercial floor space.

The existing road and traffic environment in the vicinity of the proposed development has been reviewed and it was found that there are no traffic issues of concern.

The likely traffic generation associated with the proposed development has been calculated to be 169 vehicles/day and 19 vehicles/hour during the peak traffic periods.

The development site has a number of characteristics that are likely to result in many of the trips being made by modes other than private car:

- the site is within easy walking distance of the North Hobart shopping area;
- it only takes about 15 minutes to reach the Hobart city centre on foot;
- high frequency bus services pass along Elizabeth Street in close proximity to the development site; and
- bicycle lanes have been provided along Argyle and Campbell Streets.

The traffic signals at Burnett Street/Argyle Street will create gaps in the traffic stream that will make it easier for traffic turning in and out of the development site. The low number of private vehicle trips that will be generated by the development combined with the gaps in the Burnett Street traffic stream that will be generated by upstream traffic signals means that the access to and from the development site will operate without any significant queuing or delay.

The various safe intersection sight distances associated with vehicles entering and exiting the development's driveway access were found to satisfy the requirements set out in AS 2890.1

The proposed development includes 61 parking spaces. Given the development site's characteristics which will combine to substantially reduce the reliance of the development's residents on private car travel, it is concluded that this will be more than sufficient to meet the parking demand.

The dimensions of the access driveway and internal parking aisles and parking spaces will be compliant with the relevant Australian Standard. There is sufficient manoeuvring area for each parking space and all vehicles will be able to exit in a forward direction.

Because of the constrained nature of the development site, the ramps that connect the different levels of the car park will be one-lane wide and controlled with traffic signals. The low level of traffic activity within the site

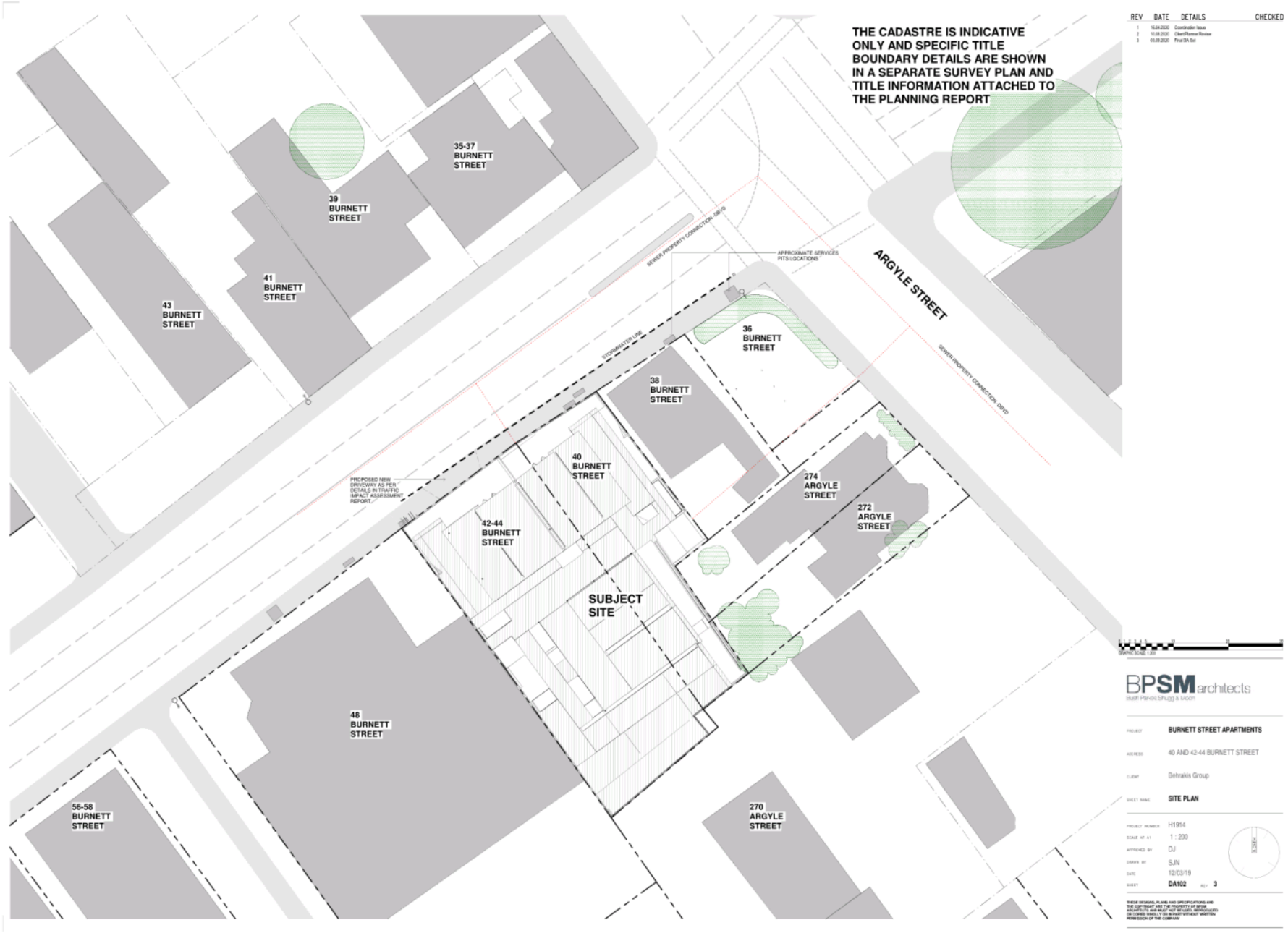
with no more than 16 vehicles/hour will ensure there will be no capacity issues associated with the operation of the one-lane ramps.

The collection of domestic waste will be undertaken by arrangements with Hobart City Council with provision within the front of the building for storage of bins.

Commercial tenancy serving and waste collection will be attended to by commercial or private contractors from on-street parking, some occurring outside business hours, as is normal for businesses in the Hobart area.

Overall, it is concluded that the proposed development will not give rise to any adverse operational or safety issues and it is supported on traffic grounds.

ATTACHMENT A
Design drawings detailing layout of proposed development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REV DATE DETAILS CHECKED
35-37 BURNETT STREET
39 BURNETT STREET
41 BURNETT STREET
43 BURNETT STREET
ARGYLE STREET
36 BURNETT STREET
38 BURNETT STREET
40 BURNETT STREET
42-44 BURNETT STREET
274 ARGYLE STREET
272 ARGYLE STREET
SUBJECT SITE
48 BURNETT STREET
56-58 BURNETT STREET
270 ARGYLE STREET
SEWER PROPERTY CONNECTION, DRYD
APPROXIMATE SERVICES PITS LOCATIONS
STORMWATER LINE
PROPOSED NEW DRIVEWAY AS PER DETAILS IN TRAFFIC IMPACT ASSESSMENT REPORT.
BPSM architects
BURNETT STREET APARTMENTS
40 AND 42-44 BURNETT STREET
Behrakis Group
SITE PLAN
H1914
1 : 200
DJ
SJN
12/03/19
DA102
3

REV	DATE	DETAILS	CHECKED
1	06.01.2020	Lightwell Review	
2	16.04.2020	Coordination Issue	
3	10.08.2020	Client/Planner Review	
4	03.09.2020	Final DA Set	

BPSM architects
Bluth Parkes Shugg & Moon

PROJECT: BURNETT STREET APARTMENTS
ADDRESS: 40 AND 42-44 BURNETT STREET
CLIENT: Behrakis Group
SHEET NAME: BASEMENT

PROJECT NUMBER: H1914
SCALE AT A1: 1 : 100
APPROVED BY: DJ
DRAWN BY: SJN
DATE: 12/03/19
SHEET: DA200 REV: 4

REV	DATE	DETAILS	CHECKED
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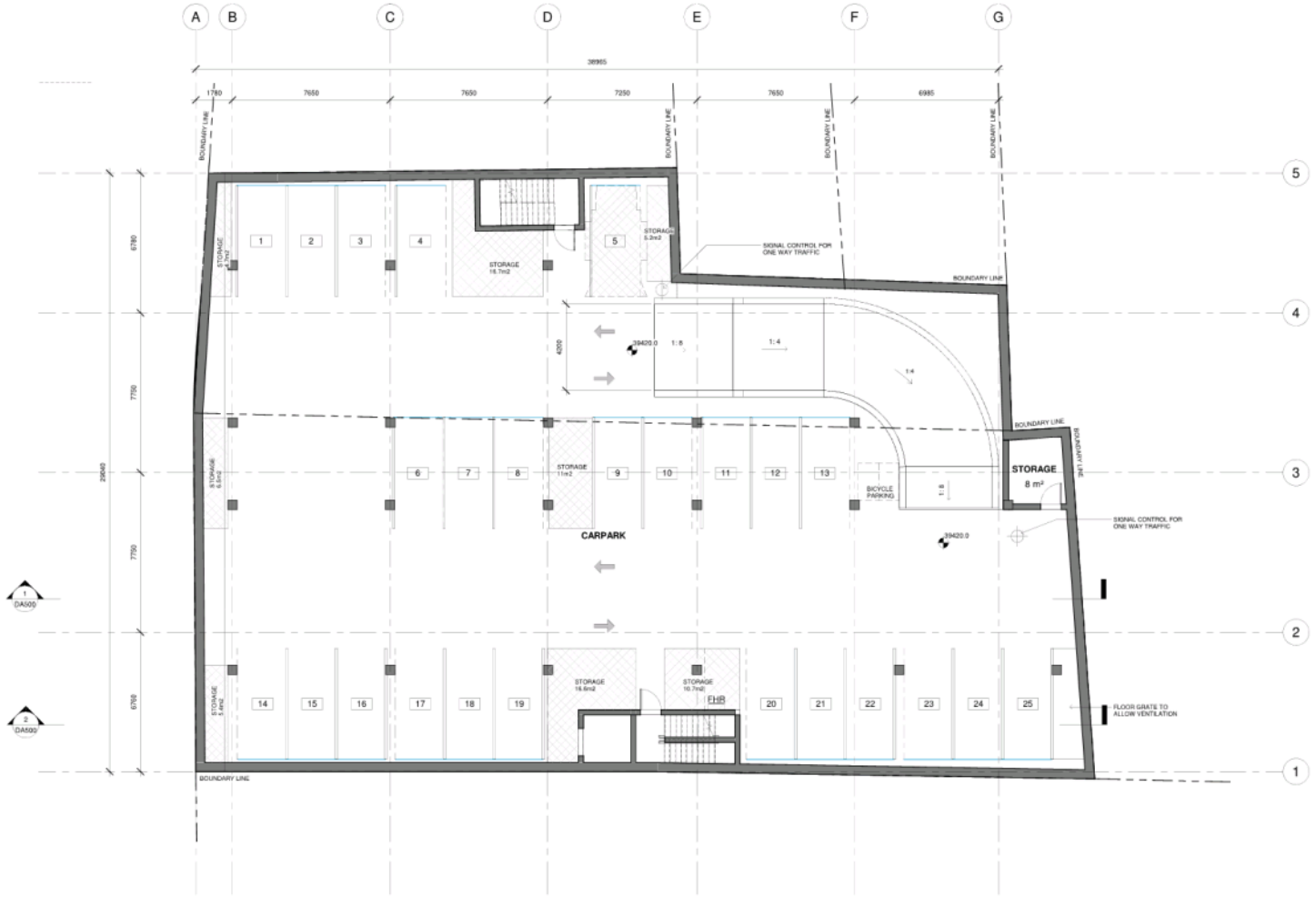
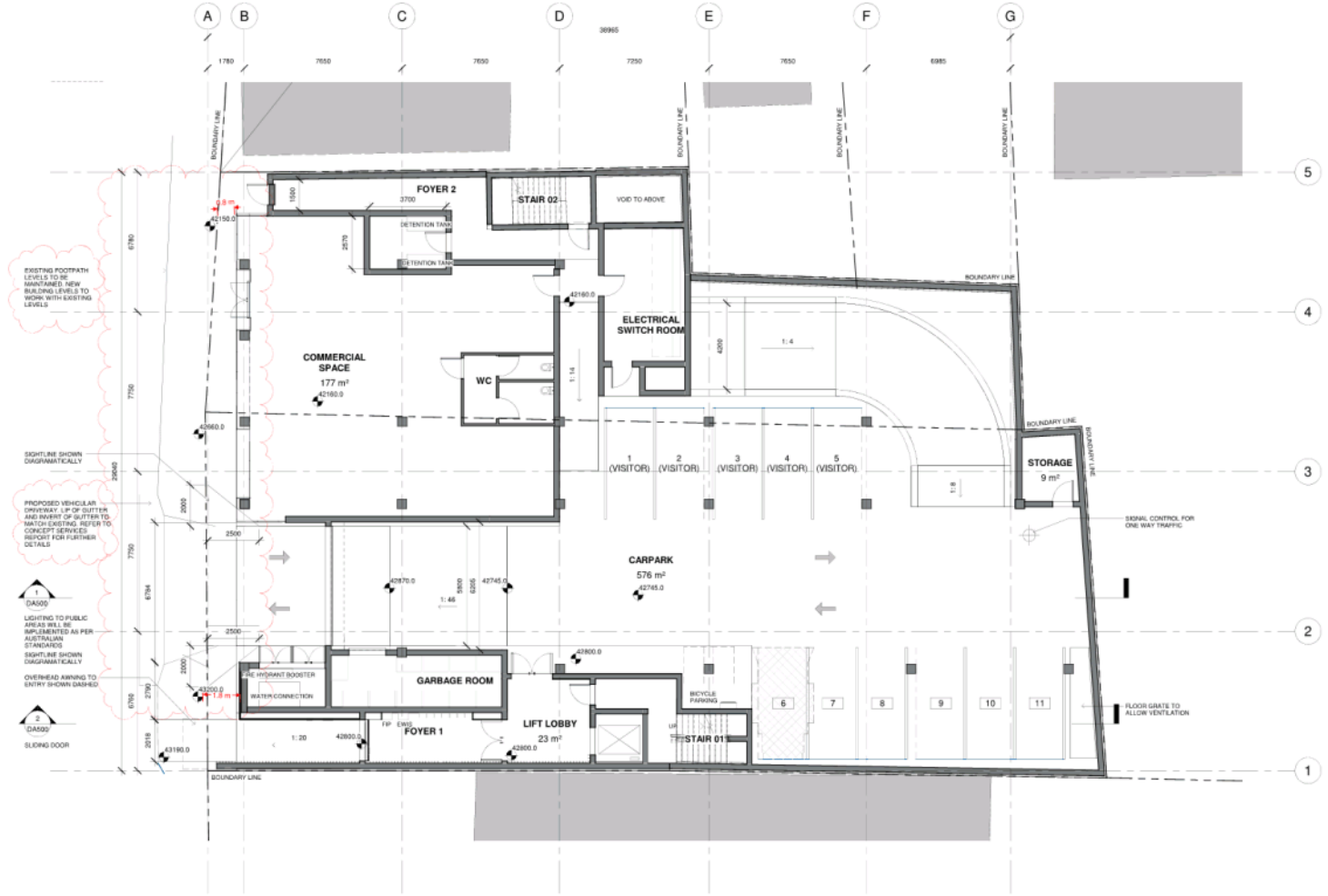
2	16.04.2020	Coordination Issue	
3	10.09.2020	Client/Planner Review	
4	03.09.2020	Final DA Set	



BPSM architects
Bush Parkes Shugg & Moon

PROJECT	BURNETT STREET APARTMENTS
ADDRESS	40 AND 42-44 BURNETT STREET
CLIENT	Behrakis Group
SHEET NAME	LOWER GROUND
PROJECT NUMBER	H1914
SCALE AT A1	1 : 100
APPROVED BY	DJ
DRAWN BY	SJN
DATE	12/05/19
SHEET	DA201 REV 4



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2	16.04.2020	Coordination Issue	
3	10.08.2020	Client/Planner Review	
4	03.09.2020	Final DA Set	
5	07.09.2020	Council RFI	
6	20.10.2020	Council RFI	

BPSM architects
Bluth Parkes Shugg & Moon

PROJECT	BURNETT STREET APARTMENTS
ADDRESS	40 AND 42-44 BURNETT STREET
CLIENT	Behrakis Group
SHEET NAME	GROUND
PROJECT NUMBER	H1914
SCALE AT A1	1 : 100
APPROVED BY	DJ
DRAWN BY	SJN
DATE	12/05/19
SHEET	DA202 REV 6

REV	DATE	DETAILS	CHECKED
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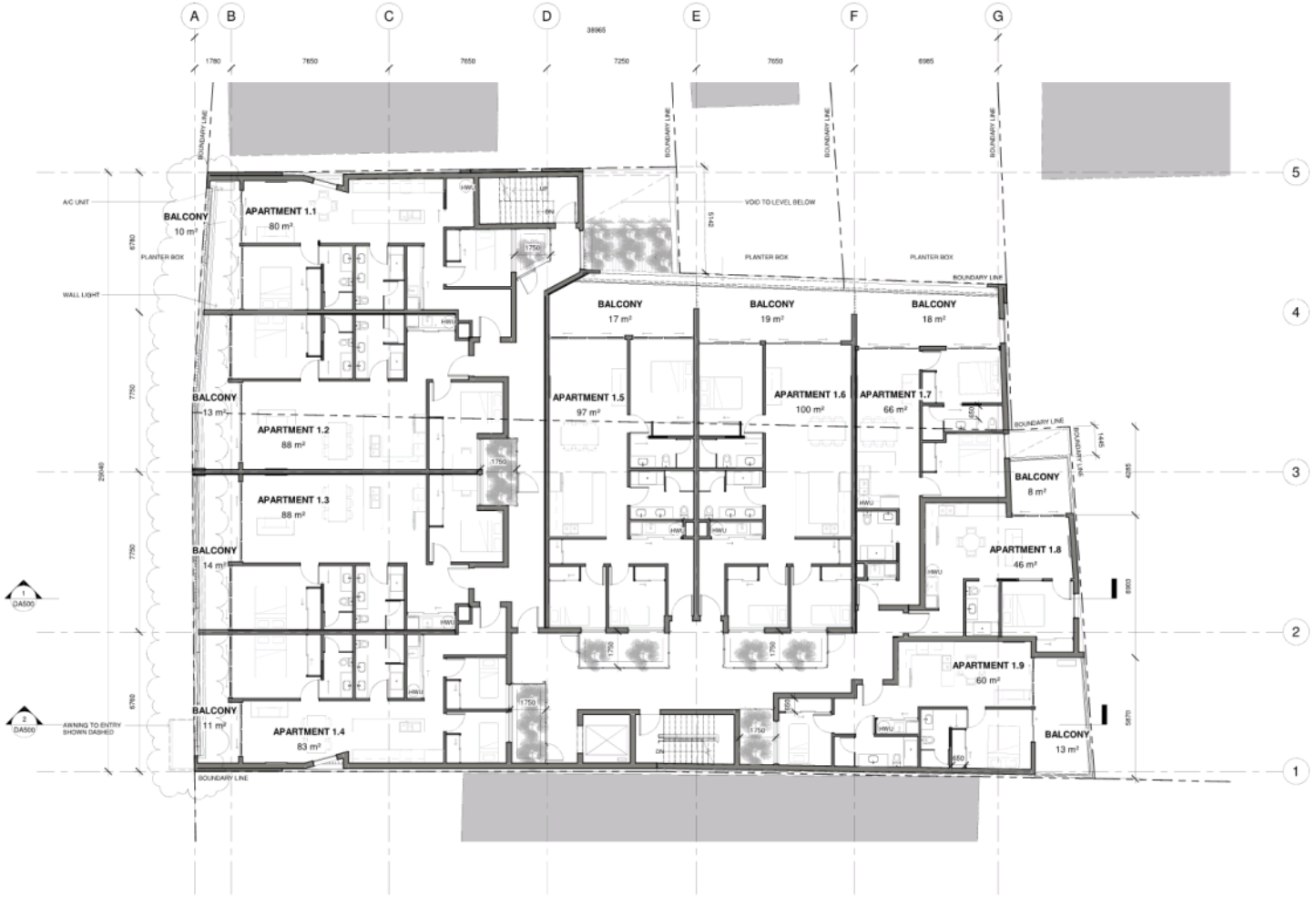
2	16.04.2020	Coordination Issue	
3	10.06.2020	Client/Planner Review	
4	03.09.2020	Final DA Set	
5	24.09.2020	Council RFI	



GRAPHIC SCALE 1:100

BPSM architects
Bush Parkes Shugg & Moor

PROJECT	BURNETT STREET APARTMENTS
ADDRESS	40 AND 42-44 BURNETT STREET
CLIENT	Behrakis Group
SHEET NAME	LEVEL 01
PROJECT NUMBER	H1914
SCALE AT A1	1:100
APPROVED BY	DJ
DRAWN BY	SJN
DATE	12/05/19
SHEET	DA203 REV 5

REV	DATE	DETAILS	CHECKED
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2	16.04.2020	Coordination Issue	
3	10.08.2020	Client/Planner Review	
4	03.09.2020	Final DA Set	

BPSM architects
Bluth Parkes Shugg & Moon

PROJECT	BURNETT STREET APARTMENTS
ADDRESS	40 AND 42-44 BURNETT STREET
CLIENT	Behrakis Group
SHEET NAME	LEVEL 02
PROJECT NUMBER	H1914
SCALE AT A1	1 : 100
APPROVED BY	DJ
DRAWN BY	SJN
DATE	12/05/19
SHEET	DA204 REV 4

REV	DATE	DETAILS	CHECKED
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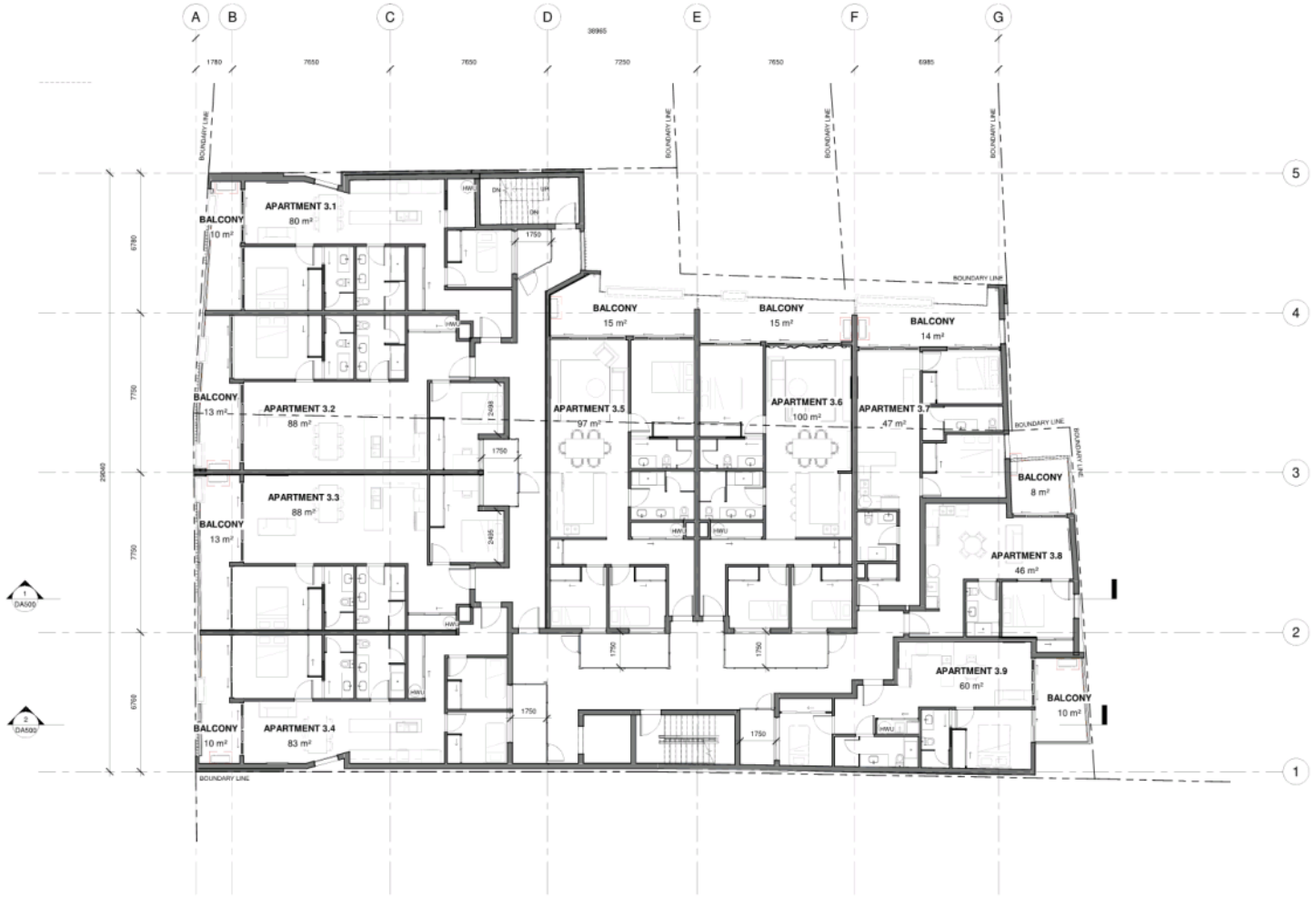
3	10.08.2020	Client/Planner Review	
4	03.09.2020	Final DA Set	



BPSM architects
Bluth Parkes Shugg & Moon

PROJECT	BURNETT STREET APARTMENTS
ADDRESS	40 AND 42-44 BURNETT STREET
CLIENT	Behrakis Group
SHEET NAME	LEVEL 03
PROJECT NUMBER	H1914
SCALE AT A1	1 : 100
APPROVED BY	DJ
DRAWN BY	SJN
DATE	12/05/19
SHEET	DA205 REV 4

MILAN PRODANOVIC B.E. PEng
TRAFFIC ENGINEERING & ROAD SAFETY

26 October 2020

Indra Boss
Town Planner
Johnstone, McGee & Gandy Pty Ltd
117 Harrington St
HOBART TAS 7000

Dear Indra

PROPOSED RESIDENTIAL APARTMENT AND COMMERCIAL DEVELOPMENT - 40 & 42-44 BURNETT STREET, NORTH HOBART

I refer to the request for further information from the Hobart City Council in regard to the above proposed development.

The following advice is provided for issues related to traffic that have been identified as requiring more detail and advice:

PA3

To satisfy Hobart Interim Planning Scheme 2015 clauses E6.7.3 Acceptable Solution A1 the scaled and dimensioned design drawings must include:

Plan view demonstrating sufficient width for passing (B85 passing B99 per AS2890.1) along the circulation roadway, including at curves and bends.

ADVICE

Dimensions on the Ground Floor drawing show that the driveway/parking aisle into the building from Burnett Street to the far side of visitor Parking Space 5 will have a width of 6.2m, apart from at the entry gate where it will be 5.8m. Beyond this to the end of the aisle it will be 6.8m wide.

The parking aisles on other two parking levels will also be 6.2m/6.8m wide and the turning area between the two aisles on these levels will be 7.2m wide.

The one-lane ramps (two ramps) between the three levels of parking will be 4.2m wide.

For continuous movements of opposing vehicles AS 2890.1 required provision for B85 and B99 cars to pass one another in opposite directions.

This will clearly be available on the straight parking aisles. Through the turning area between the two parking aisles on the Lower Ground Level and

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TRAFFIC ENGINEERING & ROAD SAFETY

also Basement Level, B85/B99 vehicles will be able to pass one another. If a car does approach this area too far to the right at times, cars will be able to pass one vehicle at a time. This is permitted in AS 2890.1 (Clause 2.5.2 (c) and the available width clearly is sufficient to accommodate a B99 car. This will not create any operational issue as the opposing traffic volume will be quite low (see advice below).

While the (Gandy and Roberts) car turn paths show a B85 car negotiating the one lane ramp, the proposed geometric design of the ramp will accommodate a B99 car. There will also be sufficient aisle width at each end of the ramp for B85/B99 car to pass one another.

Drawings demonstrating these were not available when preparing this advice and their provision could be a condition of the planning permit, if required.

It should be noted no pavement arrows are proposed in the circulation/parking aisles. The arrows shown on the drawings are intended to show directional movements and the arrows showing travel on the right side are an error. It is proposed all directional arrows be removed.

PA4

To satisfy Hobart Interim Planning Scheme 2015 clauses E6.7.4 Acceptable Solution A1 the scaled and dimensioned design drawings must include:

Plan view demonstrating onsite turning for a B99 vehicle such that vehicles can enter and exit the property in a forward direction (assuming all parking spaces, including designated visitor spaces, are occupied).

ADVICE

There should not be any vehicles other than those belonging to residents proceeding beyond the ground floor level. Residents proceeding to the other two parking levels will have allocated parking spaces and therefore will turnaround using the allocated parking bay.

On the ground floor level, if the parking bays are all occupied and a visiting car needed to turnaround to exit the building, it was envisaged a B99 car could easily turn around in the area of the ramp with the rear wheels of the reversing vehicle positioned just onto the 1:8 transition ramp. This manoeuvre is not seen to create any adverse conflict or problem with the use of the ramp; approaching vehicles on the ramp will be on an upgrade plus such situations would occur infrequently.

Should this be a concern for council, it is recommended Parking Bay 8 be designated as a turnaround bay, which could occur based on the discussion on parking bay numbers at the end of Page 17 in the TIA report.

PA5.1

To satisfy Hobart Interim Planning Scheme 2015 clauses E6.7.5 Acceptable Solution A1 the scaled and dimensioned design drawings must include:

A fully dimensioned layout of car parking spaces, access aisles, circulation roadways and ramps, turning areas and driveway that is designed to comply with Section 2 of AS/NZS 2890.1:2004 and must have sufficient headroom to comply with Section 5.3 of AS/NZS 2890.1:2004.

To satisfy clauses E6.7.5 Acceptable Solution A1, AS/NZS 2890.1:2004 Section 2 and AS/NZS 2890.1:2004 Section 5.3, scaled and dimensioned design drawings must include:

- *Fully dimensioned plan view showing the layout of car parking space(s);*
- *Fully dimensioned plan view showing the minimum width of entire driveway, along with curve radii;*
- *Plan view and long section along the proposed driveway centreline;*
- *Plan view and long section along the proposed driveway centreline and inner wheel paths;*
- *Elevation or section view showing sufficient headroom to satisfy Section 5.3 of AS/NZS 2890.1:2004.*

ADVICE

As outlined in the TIA report, the architectural design ensures there will be a minimum height clearance of 2.2m in all trafficable areas including at the ramps. The ramps have been designed so that the grade on the inside radius of the ramp will be 25%.

Drawings demonstrating this were not available when preparing this advice and their provision could be a condition of the planning permit, if required.

PA 5.2

To satisfy Hobart Interim Planning Scheme 2015 clauses E6.7.5 Acceptable Solution A1 the scaled and dimensioned design drawings must include:

Standard single turn B99 swept paths (including 300mm manoeuvring clearance) into and out of all the proposed car parking space(s), ensuring swept paths do not conflict with adjacent parking spaces, structures or fixed objects.

ADVICE

Assessment of the geometric layout of the car parking bays and aisles has found the layout meets AS 2890.1 requirements, as outlined in the TIA report.

There is not a requirement in the standard that parking bays be individually designed for use by B99 cars. Clause B2.3 details the reasons for this, as the one part of the car park design that is based on B85 cars.

Notwithstanding this, the car park design has been based on the Figure 2.2 and hence is compliant.

Single parking space 5 on the Lower Ground and Basement Levels has extra manoeuvring width, plus these bays can be allocated to residents with B85 of small cars.

PA13

Scaled and dimension plan(s) demonstrating off-street commercial vehicle facilities for loading, unloading or manoeuvring in accordance with Australian Standard for Parking Facilities, Part 2: Off-street commercial vehicle facilities AS 2890.2:2018.

A waste management plan that:

- *Includes provisions for commercial waste services for the handling, storage, transport and disposal of domestic and commercial waste and recycle bins from the development*
- *Demonstrates that all commercial waste collection processes can be undertaken wholly within the boundaries of the property.*

ADVICE

The TIA report provides details about waste collection. It is not proposed that commercial vehicles will enter the building for waste collection.

MILAN PRODANOVIC B.E. PEng
TRAFFIC ENGINEERING & ROAD SAFETY

ADVICE REGARDING TRAFFIC CONFLICTS AND TRAFFIC SIGNAL OPERATION

As detailed in the TIA report:

The trip generation associated with the proposed residential apartments and commercial development has been calculated to be up to 19 vehicles/hour during the afternoon peak hour. This is not a particularly high traffic movements for a development, one vehicle every three minutes during peak hour periods and even less at other times.

The highest opposing vehicle movement at a constraint location will be at the first ramp from the Ground Floor Level.

At this location, the expected maximum conflicting traffic volume will be around 16 vehicles/hour.

Based on an equal directional split in the traffic movement, a travel speed of 10km/h along the ramp and a 10m passing area at the end of the ramp (total length of ramp and passing area of 27m):

- the probability of delay will be around 2%;
- the average delay will be around one second on arrival at the ramp; and
- the average queue length will not exceed one vehicle (99%ile queue of 0.1m).

These performance outputs are understandable when there will be several minutes on average between vehicle arrivals.

The signal setup to control vehicle movements along the one lane ramps is expected to be similar as that outlined in the attached descriptions of available ramp signal systems.

The traffic signals would be suspended from the roof with traffic mirrors to provide a view of the ramp. Different options exist to sense a waiting car. These would also allow cars to enter exit to parking bays near the ramps in safety without a car approaching along the ramp.

Yours sincerely

Milan Prodanovic

CAR PARK TRAFFIC LIGHT SYSTEMS

1. RAPID AUTOMATIC ACCESS

Rapid Automatic Access offers a solution to safely control the traffic in a multi-level car park, where ramps between levels are shared for traffic going up or down.

When only a single vehicle can utilise a car park ramp at any one time, car park traffic light systems resolve any potential issues. By using traffic lights and our Rapid ramp controllers, the car park building can be designed with a one way ramp, for traffic going up or down.

The safety of both vehicle traffic in a car park is paramount. Rapid Automatic has installed these traffic systems in many car parks across Australia, reducing the potential for any unnecessary incidents.

Traffic light ramp controllers are available for car parks with single lane access. With the Rapid Ramp control panels, you can control the flow of traffic by setting the traffic light sequence depending on the direction of the vehicle flow in your car park. When there is no vehicle traffic, the default state will keep all traffic lights either green or red depending on the layout and traffic flow in and out of the building – this is determined case by case.

2. TPS GROUP

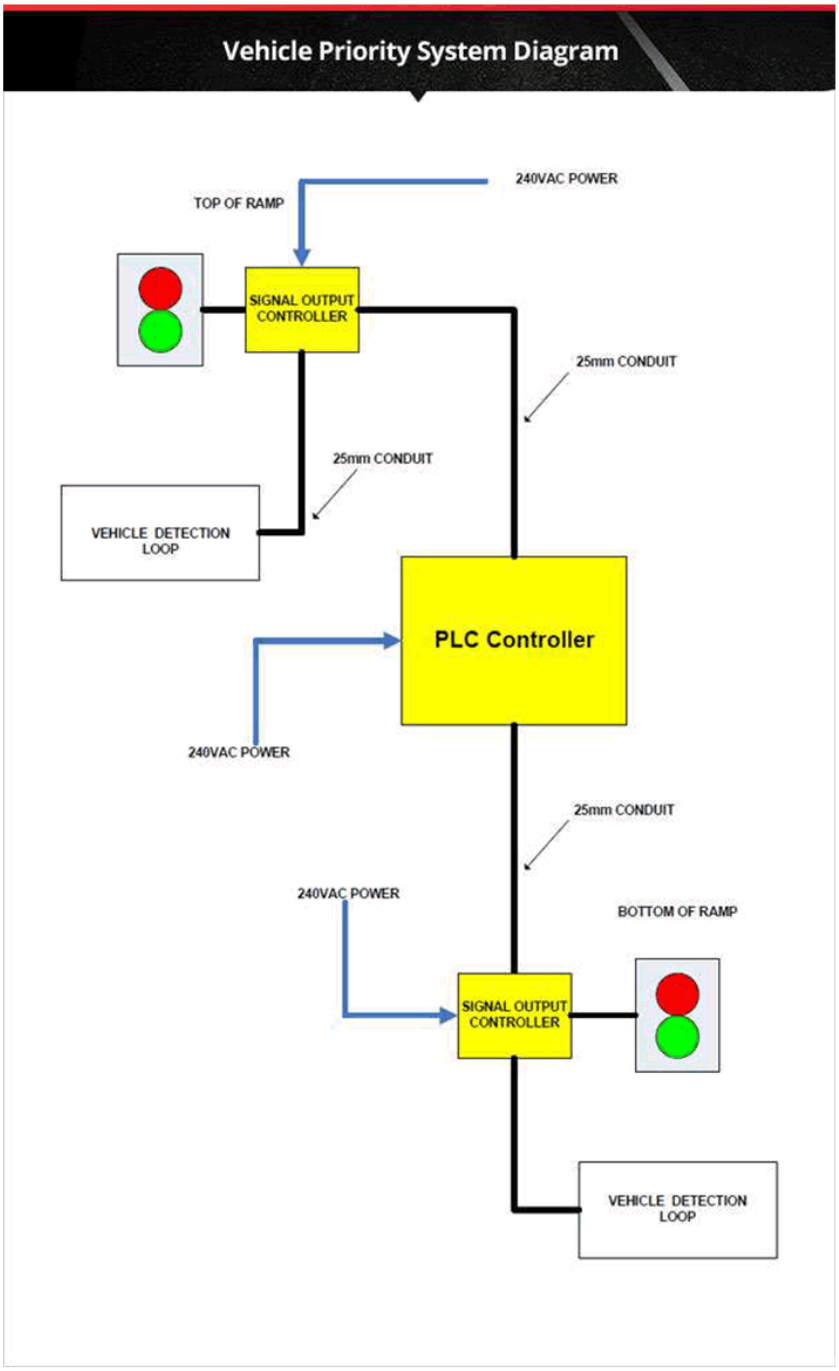
TPS has installed vehicle priority systems and traffic light systems for clients that have issues with car park access where only a single vehicle can traverse a driveway.

The use of traffic lights combined with a TPS Vehicle Priority controller and in ground loops or beam sensors enables buildings to be designed with a one way ramp or single direction vehicle access point. We have designed and installed systems for developments with up to 10 levels of basement parking. Ramp detection and waiting bays with our Vehicle Detection sensors allows for site specific programming to reduce prolonged waiting times to enter or exit the site.

Traffic Light System Installation with Wireless Communication

TPS Traffic and Parking Systems has installed traffic light systems for construction sites that require two way access via a one way drive way or lane. This is an excellent solution that saves costs on expensive man power required for traffic controllers on site.

The system can be installed permanently or temporarily, the traffic light system is activated by vehicle sensors and can wirelessly transmit detection of a vehicle between the two traffic lights.


Vehicle Priority System Diagram
240VAC POWER
TOP OF RAMP
SIGNAL OUTPUT CONTROLLER
25mm CONDUIT
25mm CONDUIT
VEHICLE DETECTION LOOP
PLC Controller
240VAC POWER
25mm CONDUIT
240VAC POWER
BOTTOM OF RAMP
SIGNAL OUTPUT CONTROLLER
VEHICLE DETECTION LOOP

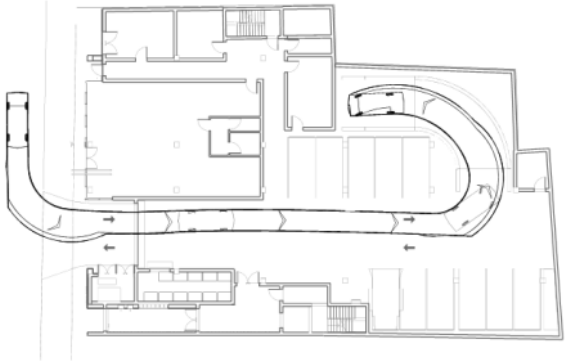
REV	DATE	DETAILS	CHECKED
1	06.01.2020	Lightwell Review	
2	16.04.2020	Coordination Issue	
3	10.08.2020	Client/Planner Review	
4	03.09.2020	Final DA Set	

BPSM architects
Bluth Parkes Shugg & Moon

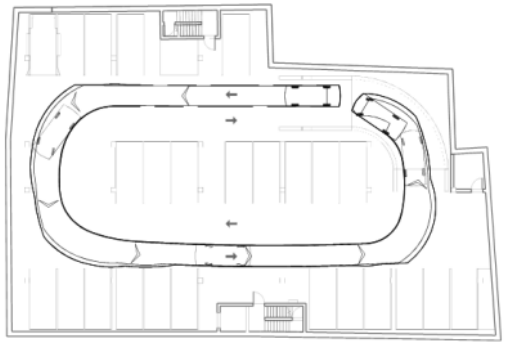
PROJECT	BURNETT STREET APARTMENTS
ADDRESS	40 AND 42-44 BURNETT STREET
CLIENT	Behrakis Group
SHEET NAME	LEVEL 04
PROJECT NUMBER	H1914
SCALE AT A1	1 : 100
APPROVED BY	DJ
DRAWN BY	SJN
DATE	12/05/19
SHEET	DA206 REV 4

APPENDIX H

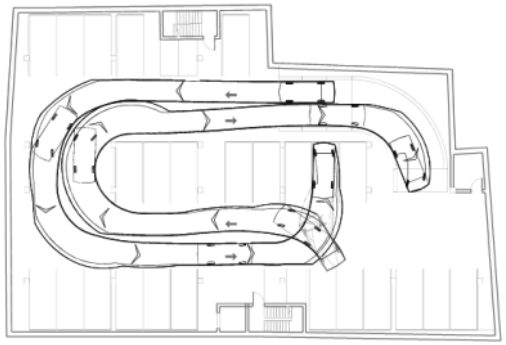
Concept Sweep Path Diagrams



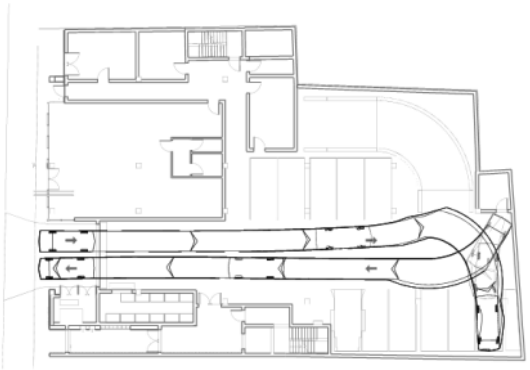
VEHICLE SWEPT PATH ANALYSIS - GROUND FLOOR
ENTRY TO DOWN RAMP
SCALE 1:200



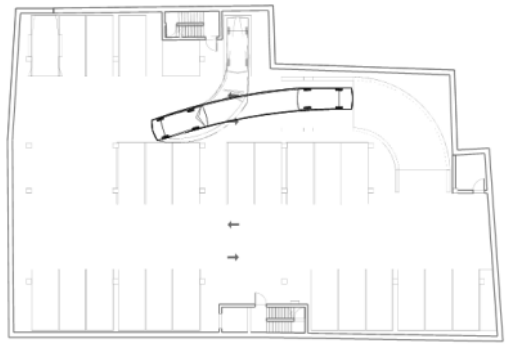
VEHICLE SWEPT PATH ANALYSIS - LOWER GROUND FLOOR
SINGLE MOVEMENT LOOP
SCALE 1:200



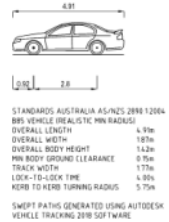
VEHICLE SWEPT PATH ANALYSIS - BASEMENT
VEHICLE PASSING ON CORNER
SCALE 1:200



VEHICLE SWEPT PATH ANALYSIS - GROUND FLOOR
ENTRY TO TROUBLE PARKING BAY AND RETURN TO EXIT
SCALE 1:200



VEHICLE SWEPT PATH ANALYSIS - LOWER GROUND FLOOR
REVERSE PARK TO TROUBLE PARKING BAY
SCALE 1:200



STANDARDS AUSTRALIA AS/NZS 2890.1:2004
B85 VEHICLE (REALISTIC MIN RADIUS)

OVERALL LENGTH	4.91m
OVERALL WIDTH	1.87m
OVERALL BODY HEIGHT	1.42m
MIN BODY GROUND CLEARANCE	0.15m
TRACK WIDTH	1.77m
LOCK-TO-LOCK TIME	4.00s
KERB TO KERB TURNING RADIUS	5.75m

SWEPT PATHS GENERATED USING AUTODESK VEHICLE TRACKING 2018 SOFTWARE

VEHICLE SWEPT PATH DESIGN VEHICLE - B85
(REALISTIC MINIMUM TURNING RADIUS)
SCALE 1:100

REV	DESCRIPTION	APP'D	DATE
A	CONCEPT	SP	00.00.0000

REV	DESCRIPTION	APP'D	DATE

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42-44 BURNETT STREET, NORTH HOBART
TASMANIA 7000

DRAWING TITLE
VEHICLE SWEPT PATH ANALYSIS

0 50mm

SCALE	
1:100@A1	

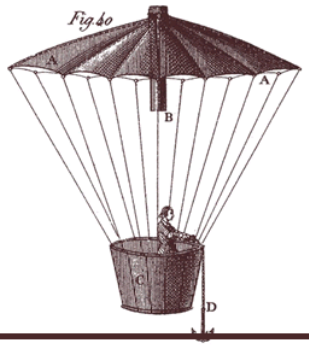
DESIGNED	DRAWN	CHECKED
SC	SC	SP

PROJECT	DRAWING	REVISION
19.0309	C010	A

APPENDIX I

Concept Services

GANDY AND ROBERTS
159 DAVEY ST
HOBART TASMANIA
AUSTRALIA 7000
CONSULTING ENGINEERS



Concept Services Report

Planning Scheme Compliance & Existing Infrastructure Assessment

42-44 Burnett Street

for Behrakis Group Property Holdings

07/10/2020

Version control

Revision	Description	Issue date	Issued by
1	Planning Approval	18/09/2020	Joshua Farner
2	Planning Approval	07/10/2020	Simon Palmer

PROJECT NUMBER **19.0309**
REPORT AUTHOR **Joshua Farner**
CHECKED BY **Simon Palmer**

Gandy and Roberts Consulting Engineers
STRUCTURAL CIVIL HYDRAULICS

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Contents

1 Background

An apartment building development is currently proposed at 42-44 Burnett Street, Hobart. In order to comply with Hobart City Council planning scheme requirements, Gandy and Roberts have been engaged to provide a concept services report in support of the development application.

2 Planning Scheme Requirements

The current Hobart Interim Planning Scheme 2015 requires that this development manages stormwater in compliance with the Stormwater Management Code. Code requirements for this development are:

Acceptable Solution A2 of Clause E7.7.1 Stormwater Drainage and Disposal states:

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 m^2;

(b) new car parking is provided for more than 6 cars;

(c) a subdivision is for more than 5 lots.

This development meets criteria (b) of the clause and therefore water sensitive urban design principles must be incorporated into the design of stormwater management for the site.

Acceptable Solution A3 of Clause E7.7.1 Stormwater Drainage and Disposal states:

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.

This development incorporates a minor stormwater drainage system, therefore the design must satisfy both criterion (a) and criterion (b) of Acceptable Solution A3. As the development is on Commercially zoned land, the 20 year ARI storm must be accommodated in the design.

[R1] *Water Sensitive Urban Design Engineering Procedures for Stormwater Management in Southern Tasmania or the Model for Urban Stormwater Improvement Conceptualisation (MUSIC), a nationally recognised stormwater modelling software package used to assess land development proposals based on local conditions including rainfall, land use and topography, is recognised as current best practice.*

3 Stormwater Management

3.1 Water Sensitive Urban Design

3.1.1 Performance Criteria

Performance Criteria P2 of Clause E7.7.1 requires:

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.

The acceptable stormwater quality and quantity targets are:

80% reduction in the average annual load of total suspended solids (TSS) based on typical urban stormwater TSS concentrations.
45% reduction in the average annual load of total phosphorus (TP) based on typical urban stormwater TP concentrations.
45% reduction in the average annual load of total nitrogen (TN) based on typical urban stormwater TN concentrations.
Stormwater quantity requirements must always comply with requirements of the local authority including catchment-specific standards. All stormwater flow management estimates should be prepared according to methodologies described in Australian Rainfall and Runoff (Engineering Australia 2004) or through catchment modelling completed by a suitably qualified person.

3.1.2 Stormwater System Concept

A management system for the proposed development may incorporate the following design elements, as shown on **Drawing C011.**

- 3.7 kL detention tank
- Ocean Protect Storm Filters

3.1.3 MUSIC Modelling

MUSIC V6.2.1 was used to model the performance of the proposed stormwater system. The model predicted the following performance outcomes:

- Total Suspended Solids reduction of 82.5%
- Total Phosphorus reduction of 76.1%
- Total Nitrogen reduction of 49.1%
- Gross Pollutants reduction of 100%

These reduction percentages satisfy Performance Criteria P2 of Clause E7.7.1.

3.2 Existing Infrastructure System Performance

3.2.1 20 Year ARI Storm Event

A 20 year average recurrence interval storm event at the site has an intensity of 86 mm/h for a duration of 5 minutes (derived from Australian Rainfall and Runoff recommended BOM IFD data).

A DN300 council stormwater main is located outside the property within Burnett Street. The existing buildings on the development site currently discharge to kerb. The existing underground electricity and communication cables under the footpath are too high to facilitate a stormwater connection to the kerb or to the council stormwater main at its current height. The existing stormwater main cannot be re-laid at a reduced grade on its current alignment as the maximum grade achievable would be 0.9% which significantly reduces the capacity of the main. A new DN150 stormwater line parallel to the existing main will be required in the Burnett Street road pavement to facilitate a stormwater connection to the property. The new line cannot be laid in the footpath due to the heavy congestion of existing services. Refer **Drawing C011** (to be confirmed during detailed design).

3.2.2 Stormwater Runoff

The post-developed site will be entirely impervious, and runoff from the site has been calculated as 25 L/s, or an equivalent discharge volume of 7.5 kL with no on-site detention (5% AEP storm event).

The development will restrict the post development flow rate to the pre-development flow rate using an orifice discharge on a 7.5 kL detention tank.

The proposed development will not exceed the allowable capacity of the existing SW network.

3.2.3 Conclusion

The development can be designed to satisfy Objectives A2 and A3 of Clause E7.7.1 of the Hobart Interim Planning Scheme 2015.

In order to service the basement level drainage, a small private pump station shall be installed to cater for stormwater drainage only. This shall discharge into the gravity stormwater drainage system at a suitable location.

4 Sewer and Water Service

4.1 Existing Infrastructure

4.1.1 Sewer

Existing TasWater sewer and water infrastructure is present within Burnett Street, including a DN150 VC sewer main, and a DN250 CICL water main. Refer **Drawing C011.**

4.1.2 Water

A TasWater asset search has verified existing water property connections of unknown diameter. This existing property connection (assumed DN25) will be abandoned, with a new DN150 connection provided to the existing DN250 CICL water main. Refer **Drawing C011.**

From the DN150 property connection, 2 x DN100 offtakes shall be provided for fire flow, with 1 x DN65 offtake for domestic use.

4.2 Service Requirements for Proposed Development

4.2.1 Sewer

Preliminary modelling has estimated the sewer service requirements as:

Average Dry Weather Flow = 0.13 L/s.
Peak Dry Weather Flow = 0.98 L/s.

A new DN150 sewer property connection will be required. Due to the location of the existing DN100 property connection to 40 Burnett Street in relation to existing buildings, it would not be feasible to upgrade, and it is proposed to be abandoned. A new DN150 property connection is proposed to the TasWater DN150 VC sewer main in Burnett Street. Refer **Drawing C011.**

4.2.2 Water

Preliminary modelling has estimated the water service requirements as:

Domestic Supply = 4 L/s at 650 kPa
Fire Hydrant Flow = 20 L/s at 650 kPa
Fire Sprinkler Flow = 12 L/s at 350 kPa

4.3 Conclusion

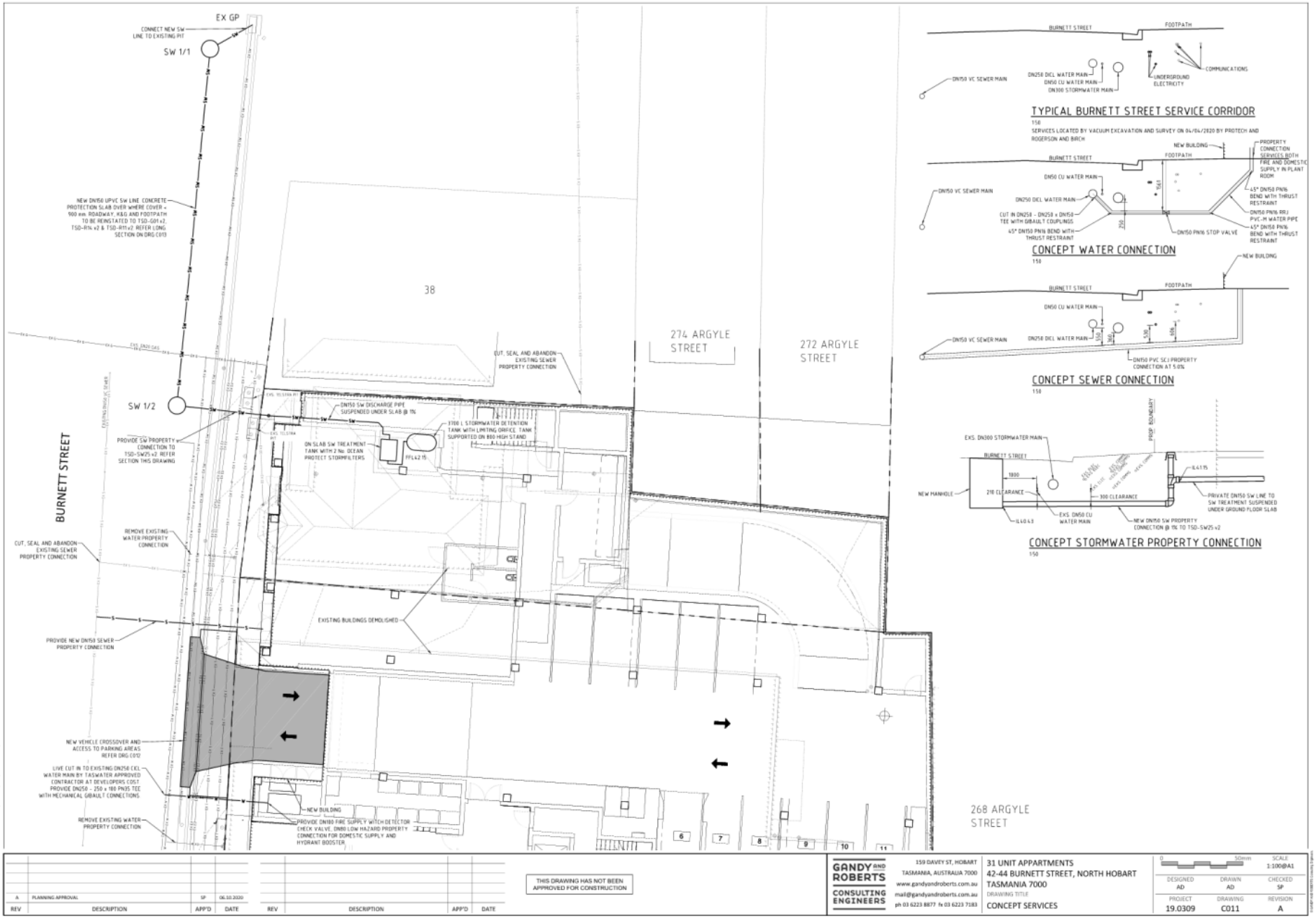
The development can be adequately serviced by the existing Taswater infrastructure.

5 Drawings

5.1 Drawing 19.0309 Rev A - C011 CONCEPT SERVICES

5.2 Drawing 19.0309 Rev A - C012 CONCEPT ACCESS

5.3 Drawing 19.0309 Rev A - C013 PUBLIC SW LONGITUDINAL SECTION


EX GP
CONNECT NEW SW LINE TO EXISTING PIT
SW 1/1
NEW DN150 UPVC SW LINE CONCRETE PROTECTION SLAB OVER WHERE COVER < 900 mm ROADWAY, K&G AND FOOTPATH TO BE REINSTATED TO TSD-G01 v2, TSD-R11 v2 & TSD-R11-v2 REFER LONG SECTION ON DRG C013
SW 1/2
PROVIDE SW PROPERTY CONNECTION TO TSD-SW25 v2 REFER SECTION THIS DRAWING
BURNETT STREET
CUT, SEAL AND ABANDON EXISTING SEWER PROPERTY CONNECTION
REMOVE EXISTING WATER PROPERTY CONNECTION
PROVIDE NEW DN150 SEWER PROPERTY CONNECTION
NEW VEHICLE CROSSOVER AND ACCESS TO PARKING AREAS REFER DRG C012
LIVE CUT IN TO EXISTING DN250 CICL WATER MAIN BY TASWATER APPROVED CONTRACTOR AT DEVELOPERS COST. PROVIDE DN250 - 250 x 100 PN35 TEE WITH MECHANICAL GIBAULT CONNECTIONS.
REMOVE EXISTING WATER PROPERTY CONNECTION
38
274 ARGYLE STREET
272 ARGYLE STREET
268 ARGYLE STREET
CUT, SEAL AND ABANDON EXISTING SEWER PROPERTY CONNECTION
DN150 SW DISCHARGE PIPE SUSPENDED UNDER SLAB @ 1%
ON SLAB SW TREATMENT TANK WITH 2 No. OCEAN PROTECT STORMFILTERS
FFL62.15
3700 L STORMWATER DETENTION TANK WITH LIMITING ORIFICE TANK SUPPORTED ON 800 HIGH STAND
EXISTING BUILDINGS DEMOLISHED
NEW BUILDING
PROVIDE DN100 FIRE SUPPLY WITCH DETECTOR CHECK VALVE, DN80 LOW HAZARD PROPERTY CONNECTION FOR DOMESTIC SUPPLY AND HYDRANT BOOSTER
6
7
8
9
10
11
BURNETT STREET
FOOTPATH
DN150 VC SEWER MAIN
DN250 DICL WATER MAIN
DN50 CU WATER MAIN
DN300 STORMWATER MAIN
UNDERGROUND ELECTRICITY
COMMUNICATIONS
TYPICAL BURNETT STREET SERVICE CORRIDOR
1:50
SERVICES LOCATED BY VACUUM EXCAVATION AND SURVEY ON 04/04/2020 BY PROTECH AND ROGERSON AND BIRCH
NEW BUILDING
PROPERTY CONNECTION SERVICES BOTH FIRE AND DOMESTIC SUPPLY IN PLANT ROOM
45° DN150 PN16 BEND WITH THRUST RESTRAINT
DN150 PN16 RRJ PVC-M WATER PIPE
DN150 PN16 STOP VALVE
CUT IN DN250 - DN250 x DN150 TEE WITH GIBAULT COUPLINGS
45° DN150 PN16 BEND WITH THRUST RESTRAINT
CONCEPT WATER CONNECTION
1:50
DN150 PVC SCJ PROPERTY CONNECTION AT 5.0%
CONCEPT SEWER CONNECTION
1:50
EXS. DN300 STORMWATER MAIN
PROP BOUNDARY
NEW MANHOLE
1800
210 CLEARANCE
300 CLEARANCE
EXS. DN50 CU WATER MAIN
NEW DN150 SW PROPERTY CONNECTION @ 1% TO TSD-SW25 v2
PRIVATE DN150 SW LINE TO SW TREATMENT SUSPENDED UNDER GROUND FLOOR SLAB
CONCEPT STORMWATER PROPERTY CONNECTION
1:50
THIS DRAWING HAS NOT BEEN APPROVED FOR CONSTRUCTION
A PLANNING APPROVAL SP 06.10.2020
REV DESCRIPTION APP'D DATE
GANDY AND ROBERTS CONSULTING ENGINEERS
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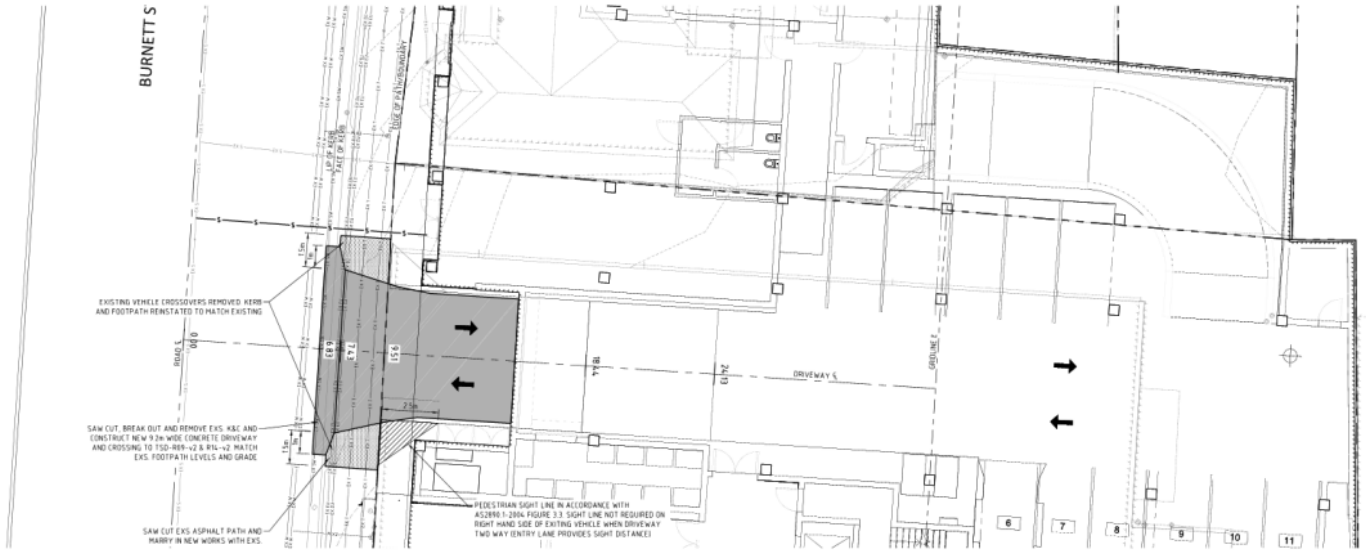
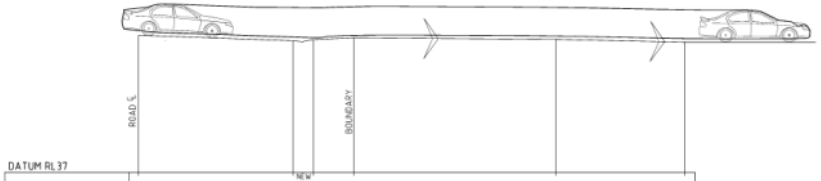
31 UNIT APPARTMENTS
42-44 BURNETT STREET, NORTH HOBART
TASMANIA 7000
DRAWING TITLE
CONCEPT SERVICES
SCALE 1:100@A1
DESIGNED AD
DRAWN AD
CHECKED SP
PROJECT 19.0309
DRAWING C011
REVISION A

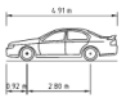




DATUM RL37							
VERTICAL ALIGNMENT	EXS ROAD -3.4%		NEW KERB FOOTPATH XING 5%		-0.8%	RAMP -2.2%	
DESIGN CENTRELINE LEVEL			42.800	42.850	42.940	42.810	42.745
EXISTING SURFACE LEVEL	43.058		42.797	42.831	43.014		
CHAINAGE	0.00		6.83	7.73	9.51	18.44	24.13

B85 GROUND CLEARANCE CHECKED USING AUTODESK VEHICLE TRACKING 2018 SOFTWARE

VEHICULAR ACCESS PROFILE
SCALE 1:100



STANDARDS AUSTRALIA AS/NZS 2890.1:2004
B85 VEHICLE (REALISTIC MIN RADIUS)

OVERALL LENGTH	4.91 m
OVERALL WIDTH	1.87 m
OVERALL BODY HEIGHT	1.42 m
MIN BODY GROUND CLEARANCE	0.15 m
TRACK WIDTH	1.77 m
LOCK-TO-LOCK TIME	4.00 s
KERB TO KERB TURNING RADIUS	5.75 m

SWEPT PATHS GENERATED USING AUTODESK VEHICLE TRACKING 2018 SOFTWARE

B85 VEHICLE PROFILE
SCALE 1:100

REV	DESCRIPTION	APP'D	DATE
A	PLANNING APPROVAL	SP	05.10.2020

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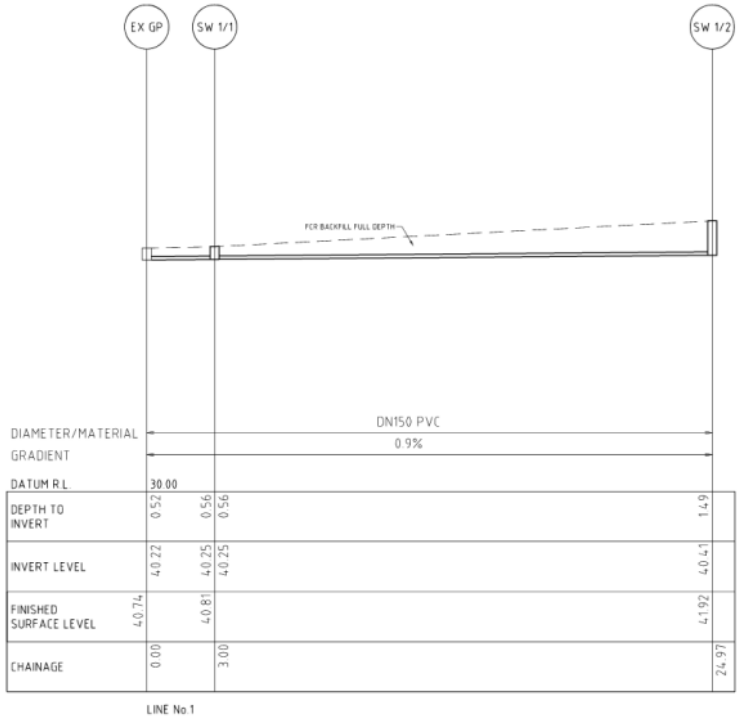
42-44 BURNETT STREET, NORTH HOBART
TASMANIA 7000
DRAWING TITLE
CONCEPT ACCESS

SCALE 1:100@A1
DESIGNED SC | DRAWN SC | CHECKED SP
PROJECT 19.0309 | DRAWING C012 | REVISION A



REV	DESCRIPTION	APP'D	DATE
A	PLANNING APPROVAL	SP	06.10.2020

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DRAWING TITLE
PUBLIC SW LONGITUDINAL SECTION

SCALE	DESIGNED	DRAWN	CHECKED
1:100@A1	SP	SP	SP

PROJECT	DRAWING	REVISION
19.0309	C013	A

6 Appendix.

6.1 Calculations

Level	Basins	Bath	DWM	Water Closet	Sink	CWM	FHR	TRO	Shower	ET's	Area Type
Basement	0	0	0	0	0	0	0	0	1	0	Carpark
Lower Ground	0	0	0	0	0	0	0	8	0	0	Carpark
Ground	2	0	0	2	1	0	2	0	0	0	Carpark / Commercial / Utilities
Level 1	24	9	9	17	9	9	0	9	17	7	Apartments RA01, RA02 RA03
Level 2	24	9	9	17	9	9	0	9	17	7	Apartments RA01, RA02 RA03
Level 3	24	9	9	17	9	9	0	9	17	7	Apartments RA01, RA02 RA03
Level 4	10	4	4	8	4	4	0	4	8	3.75	Apartments RA02 RA03
Totals	84	31	31	61	32	31	2	39	59	24.75	
Fixture Units	84	124	93	244	96	155		195	118		
Loading Units	84	248	93	122	96	93	46	117	118		
Total Fixture Units	1109										
Total Loading Units	1017										
Fixture Unit Flow (Sewer)	9.2	L/s							Extrapolated from AS3500.3		
Loading Unit Flow (Water)	4	L/s									
Average Dry Weather Flow	0.13365	L/s									
d' From WSA02 Figure C1	7.33181										
Peak Dry Weather Flow	0.979896	L/s									

Water Demands

Domestic Flow	4 L/s	650kPa
Fire Hydrant Flow	20 L/s	650kPa
Fire Sprinkler Flow	12 L/s	350kPa

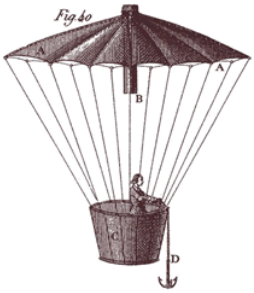
Fig 40
A
A
B
C
D

APPENDIX J

Archaeological Impact Assessment & Statement

praxisenvironment

heritage

planning

archaeology

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Statement of Historical Archaeological Potential

Archaeological Impact Assessment &

Archaeological Method Statement

40-44 Burnett Street

NORTH HOBART TASMANIA

Brad Williams

Historical Archaeologist

September 2020

Contents:

This document was written by Brad Williams (BA.Hons Archaeology, G.Dip Maritime Archaeology, MA Cultural Heritage Management, G.Dip Environmental Planning) Historical Archaeologist, Heritage Consultant and Director of Praxis Environment. Praxis Environment is a division of Praxis Synergy Pty. Ltd. Supporting historical research was provided by Alan Townsend.

Unless otherwise stated, the north point (or approximate) of maps and plans is to the top of the page.

Cadastral information depicted in this document must not be relied upon without verification by a Surveyor.

1. Introduction

1.1. Introduction and brief

This report has been commissioned by Johnstone McGee and Gandy Pty. Ltd., on behalf of the Behrakis Group Pty. Ltd in order to accompany an application to the Hobart City Council for a proposed redevelopment of the place known as 40-44 Burnett Street, North Hobart.

The subject site is on the southern side of Burnett Street, between Argyle and Elizabeth Streets, Hobart, PID's 5658661 and 5658653, and comprising of Certificates of Title 211936/1 and 228032/1 respectively.

The site is not listed on the Tasmanian Heritage Register, nor is a Heritage Place on Table E.13.1 of the Hobart Interim Planning Scheme 2015 - although it is within the Places of Archaeological Sensitivity as defined by Figure E.13.1 of the Hobart Interim Planning Scheme 2015, therefore the provisions of Part E.13.10 of the planning scheme is applicable. Accordingly, the brief for this project was to develop a **statement of historical archaeological potential** as the basis for archaeological planning in any future development of the subject site.

If archaeological potential is predicted, then this is to inform the design of the proposed development, and if archaeological impact considered possible, then an **archaeological impact assessment** is to be undertaken and if such impact is deemed unavoidable, then an **archaeological method statement** is to be formulated to industry standard.

Although not listed on the Tasmanian heritage Register, the archaeological approach in this document has been developed with regard to the Tasmanian Heritage Council's Practice Note 2 – *Managing Historical Archaeological Significance in the Works Application Process*[1], and the Tasmanian Heritage Council's *Guidelines for Historical Archaeological Research on Registered Places*[2] as a means of demonstrating a sound and best-practice approach.

[1] http://www.heritage.tas.gov.au/media/pdf/2%20Practice%20note%20-%20Archaeology.pdf
[2] http://www.heritage.tas.gov.au/media/pdf/Archae%20ResGlines%20%20FINAL%20-%20June%202009.pdf

Figure 1.1 – A recent aerial image of the area – the subject site depicted in red. www.thelist.tas.gov.au

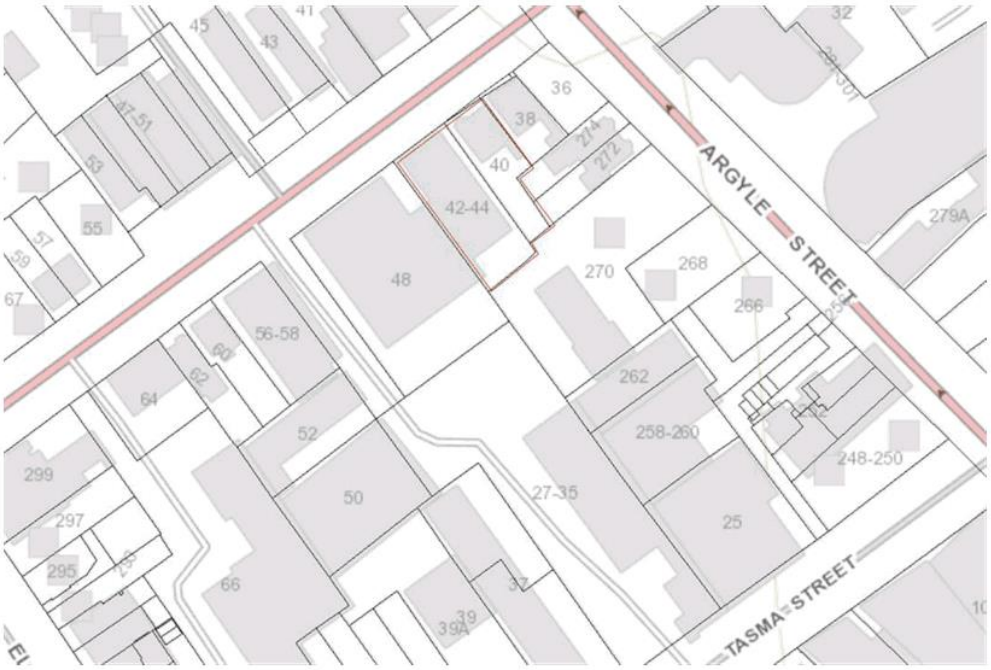


Figure 1.2 – Cadastral parcels surrounding the subject site (depicted in red) and surrounds (www.thelist.tas.gov.au).

1.2. Limitations

This document has the following stated limitations:

- This document is largely a predictive analysis (i.e. non-invasive) of the possible archaeological resource and might be subject to further on ground testing to verify findings if deemed necessary by any stakeholder.
- All depictions of the location of site features are approximate. A surveyor should be engaged if any party requires exact confirmation of locations.
- The depiction of expected archaeological features in this report largely relies on the accuracy of historical surveys and data – no guarantee of the accuracy of this historical data is given.
- The scope of this project only included historic heritage values. Consideration of Aboriginal heritage values is outside the scope.
- Any implications of the location of underground services may only be approximate. Confirmation where necessary must be sought from professional underground asset locators.

2. Statutory heritage requirements

This report has been commissioned to consider the historical archaeological potential of the subject site arising from any applicable statutory listings. The following statutory heritage responsibilities that relate to historical archaeology are to be met in any development of the subject site:

2.1. Hobart Interim Planning Scheme 2015

The place is within the area defined in Figure E13.1 of the Hobart Interim Planning Scheme 2015 (the *scheme*) as a *Place of Archaeological Potential,* therefore the provisions of Part E13.10 are applicable.

Part E13.10 of the scheme details the *Development Standards for Places of Archaeological Potential*, with the following *Objectives:*

> *13.10.1: Building, Works and Demolition: 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.*
> *13.10.2: Subdivision: To ensure that subdivision does not increase the likelihood of adverse impact on a place of archaeological potential.*

> The scheme prescribes *Performance Criteria* for each of these *Objectives* and pursuant to Part E.13.5 of the scheme, the Planning Authority may require the following to accompany any application for development of a place of archaeological potential in order to assess the proposal against the performance criteria:

> *(f) a statement of archaeological potential;*
> *(g) an archaeological impact assessment;*
> *(h) an archaeological method statement;*

Under the definitions of the scheme:

> (f) means:
> a report prepared by a suitably qualified person that includes all of the following:
> a. a written and illustrated site history;
> b. overlay plans depicting the main historical phases of site development and land use on a modern base layer;

c. a disturbance history.

d. a written statement of archaeological significance and potential accompanied by an archaeological sensitivity overlay plan depicting the likely surviving extent of important archaeological evidence (taking into consideration key significant phases of site development and land use, and the impacts of disturbance).

(g) means:

a report prepared by a suitably qualified person that includes a design review and describes the impact of proposed works upon archaeological sensitivity (as defined in a statement of archaeological potential).

(h) means:

a report prepared by a suitably qualified person that includes the following where relevant to the matter under consideration:

a. strategies to identify, protect and/or mitigate impacts to known and/or potential archaeological values (typically as described in a Statement of Archaeological Potential);

b. collections management specifications including proposed storage and curatorial arrangements;

c. identification of measures aimed at achieving a public benefit;

d. details of methods and procedures to be followed in implementing and achieving (a), (b) and (c) above

e. expertise to be employed in achieving (d) above;

f. reporting standards including format/s and content, instructions for dissemination and archiving protocols.

	Acceptable Solution	Performance Criteria
E.13.10.1 – Building and Works other than Demolition	*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;* *(a) measures proposed to preserve significant archaeological evidence 'in situ'.*
E.13.10.2 –	*A1. Subdivision provides for building restriction envelopes on titles over land defined as the Place of Archaeological Potential in Table E13.4.*	*P1. 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.*

The current document aims to fulfil those points in a consolidated manner in the assessment of the proposed development to assist the planning authority to make an informed assessment against the performance criteria of the scheme.

2.2. Tasmanian Heritage Register

The subject site is not listed on the Tasmanian Heritage Register therefore is not subject to the provisions of the *Historic Cultural Heritage Act 1995.* Nonetheless, the archaeological approach in this document has been developed with regard to the Tasmanian Heritage Council's Practice Note 2 – *Managing Historical Archaeological Significance in the Works Application Process*[3], and the Tasmanian Heritage Council's *Guidelines for Historical Archaeological Research on Registered Places*[4] as a means of demonstrating a sound and best-practice approach.

[3] http://www.heritage.tas.gov.au/media/pdf/2%20Practice%20note%20-%20Archaeology.pdf
[4] http://www.heritage.tas.gov.au/media/pdf/Archae%20ResGlines%20%20FINAL%20-%20June%202009.pdf

2.3. Other statutory heritage registers/lists

The subject site is not listed on any of the following statutory registers:

- The National Heritage List
- The Commonwealth Heritage List
- The World Heritage List

Nor is it included in any buffer zones arising from those lists, therefore is not subject to the historic heritage provisions of the respective Acts which enable statutory input into development of places on those lists.

2.4. Aboriginal Heritage Act 1975 (amended 2017)

An assessment of any possible Aboriginal heritage values is not part of the brief for this report; nonetheless the provisions of the *Aboriginal Heritage Act 1975* are applicable to the place. A search of the Tasmanian Aboriginal Heritage sites register (Job # 20192984) did not identify any registered Aboriginal heritage or apparent risk of impacting Aboriginal heritage. The Tasmanian Government *Unanticipated Discovery Plan – Procedure for the management of unanticipated discoveries of Aboriginal relics in Tasmania* must be implemented in the event that any Aboriginal heritage items are discovered during the course of any works.

3. Archaeological Methodology

This statement of archaeological potential is derived from a process which identifies the potential of the site to yield archaeological remains, the significance of any remains, and their potential to yield meaningful information about the site, and which might contribute to relevant key archaeological and historical themes. The following briefly outlines the methodology followed:

Determining general archaeological potential: Through a desktop analysis of historical data and secondary sources, as well as non-invasive site observations, an understanding of the evolution of the site has been gained which has allowed an assessment of the archaeological potential (however significant) of any part of the site - resulting in substantiated predictions of the likelihood of finding *something* upon any particular part of the site.

This has been done by analysing primary source material, summarizing the developmental history of the site and developing a chronological narrative detailing an overview of the history of all known features to have ever existed on the site. Where possible, developmental overlays have been developed from historic maps, plans, photographs and other visual documentation. This overlay has been supported by other observations providing supplementary information, and also includes processes such as demolition and disturbance which may have removed or destroyed potential remains – and may have diminished the archaeological potential.

Assessing the significance and potential of any likely archaeological resources to yield meaningful information**:** Upon understanding the archaeological potential through desktop and site analysis, the next step was to understand its relationship to any aspect of the identified significance of the place – e.g. do the remains have the potential to demonstrate an aspect of the significance of the site or related key historic theme? The potential for any of the archaeological remains to demonstrate important aspects of the history of the site, whether in a state, regional or thematic context, is to be considered.

Understanding possible impact of development and formulation of management strategies**:** Based on any identified archaeological potential and significance of the site, consideration will be given as to whether the proposed development will impact upon any likely archaeological remains and if necessary broad management strategies will be proposed to manage any impact.

Table 1 (below) demonstrates the steps of this assessment:

Methodology for formulation of the statement of archaeological potential		
	If 'no'	**If 'yes'**
1. Archaeological potential. Are you likely to find something if you dig here? (i.e. a Statement of Archaeological Potential).	Further action may not be required, although a contingency plan may be required for unexpected finds.	The significance of the archaeological potential should be investigated.
2. Significance. Could anything you find here greatly contribute to our understanding of the site or related significant theme?	Further action may not be required.	The likely integrity of the archaeological remains should be investigated.
3. Integrity. Are any archaeological remains likely to be intact?	Further action may not be required, although a contingency plan is required for unexpected integrity.	The likelihood of significant archaeological remains is confirmed.
4. Impact Will proposed works impact upon the significant archaeological remains? i.e. an Archaeological Impact Assessment.	Further action may not be required, although a contingency plan may be required for unexpected impacts.	An Archaeological Method Statement will be required to detail how impact will be managed/mitigated.

4. Historical background of the subject site

4.1. Research methodology

For this initial assessment of archaeological potential, the depiction of the physical history of the site will be the main consideration – with other aspects of site history (i.e. social histories, economic history, associations *et. al*.) likely to be more useful in any post-investigation analysis of findings (i.e. artifact assessment), therefore beyond the scope of the current document. Similarly, the history of other townscape developments is beyond the scope of the current document however may be useful in further detailed analysis of future archaeological findings.

In order to gain an overview of what once existed on the site, as the basis for predicting archaeological remains, the following is a brief overview of the historical development of the site based on primary source documents (the subject site depicted in red) as well as overviews drawn from the secondary sources as detailed above. Note that this is a brief historical overview, concentrating solely on physical development, sufficient only for basic archaeological planning. As per above, further historical research is required in order to refine a detailed archaeological research design, which is provided here in Section 5. Such detail is also required to supplement the interpretation of archaeological findings – requiring an iterative process of the assessment of findings against further historical and comparative research from both primary and secondary sources, which should be provided in an archaeological method statement and post-excavation analysis.

Primary sources

Broadly, the primary sources consulted in the development of the statement of archaeological potential include:

- Hobart City Council building files (AE417 series, Tasmanian Archive and Heritage Office).
- Historic maps, photographs (NS and PH series) - Tasmanian Archive and Heritage Office.
- Department of Primary Industry, Parks, Water and Environment (DPIPWE) aerial photo collection (Service Tasmania).
- DPIPWE – Land Data Branch, historic map collection (basement)
- DPIPWE – Land Data Branch, titles.
- Historic newspapers, via the National Library of Australia's *Newspapers Online* portal.

Secondary sources

No secondary source documents are known to exist which are of particular relevance to the history or archaeology of the subject site.

The following overview of the known physical development history of the site aims to aid in the prediction of the likely archaeological remains. This does not represent a comprehensive site history, and has been limited to a history of the physical development of the site as relevant to the archaeological resource.

4.2. Historical overview

Pre-European settlement

The land was the home of the Mouheneener people for tens of thousands of years, prior to displacement by European settlers in 1804.

Original land grants

The subject area is part of a 2-acre 7 rood 28 perch allotment depicted in Sprent's ca 1842 survey of Hobart Town as being granted to a William Johnson. Johnson had purchased the block in 1832 from the Hobart Town merchant Alexander Gellie for £216.[5] The low purchase price suggests that there was nothing built on the allotment at this time; there is no mention of any structures in the sale contract.

In April 1833, Johnson applied to have his ownership recognised by way of a grant[6]. In July 1836, a William Johnson of Hobart Town was declared insolvent, and from here it becomes difficult to track the ownership of the 2 acre 7 rood 28 perch allotment; indeed, it is not even certain if the William Johnson cited as insolvent is the same William Johnson granted the Argyle Street allotment. The next verifiable reference to this allotment occurs in February 1846, when the Hobart Town Sheriff listed the sale by auction of the estates of the late William Morgan Orr. Amongst Orr's considerable landholdings was a town allotment described as:

"Lot Eighteen, consists of an extensive allotment in Argyle Street, Hobart Town, originally granted to William Johnson, with the buildings thereon"[7] Sprent's c1845 survey depicts at least two buildings on that land.

[5] DPIPWE The LIST Mem 1/1791
[6] *The Tasmanian*, 12 April 1833 p3
[7] *Launceston Examiner*, 21 February 1846 p4

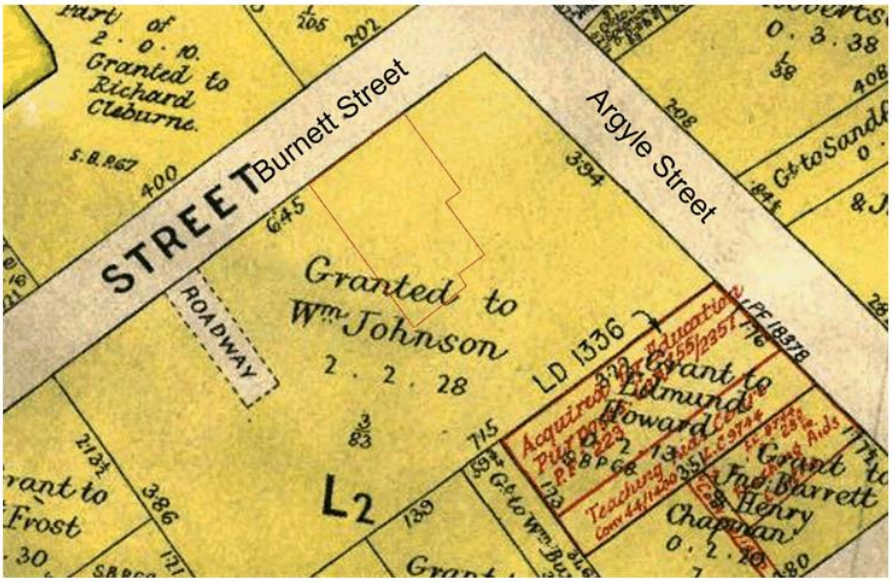


Figure 4.1 – Original land grants in the subject area (from www.thelist.tas.gov.au)

Figure 4.2 – Excerpt from Frankland's 1839 map of Hobart and surrounds showing the subject site as undeveloped. Libraries Tasmania Allport Stack 912.94661MAP.

From around 1840, the original allotment was subdivided and the subject site then diverged into two separate landholdings – reflecting the current title configuration. The following history will follow each of these as a separate entity:

40 Burnett Street

In November 1846, Abbott sold two portions of the original allotment to Thomas Walton for £410[8]. These two lots are not depicted on the sale indenture, however, comparison of the written description to Sprent's ca 1843 Hobart Town survey shows that the two lots put together included the corner of Argyle and Burnett Street and surrounded the land which Abbott would later sell with the two cottages (see below). Thomas Walton died in January 1852, leaving the property to his son William Walton; the property was transferred to William when he came of age in July 1855[9].

The property remained with the Walton family until after the death of William in January 1897[10]. It is likely that William cleared the earlier building around 1880 and constructed three near-identical masonry houses, two of which remain (38-40 Burnett Street) with what was 36 Burnett Street having been demolished post-1968. In June 1900, Thomas Bennett[11] applied to have a title issued to himself for a portion of Walton's land, as depicted in DPIPWE Hobart 9/17:

[8] Ibid.

[9] DPIPWE The LIST Mem 4/1612

[10] TAHO RGD35/1/15 Number 1084

[11] See also original RPA title – CT117/126

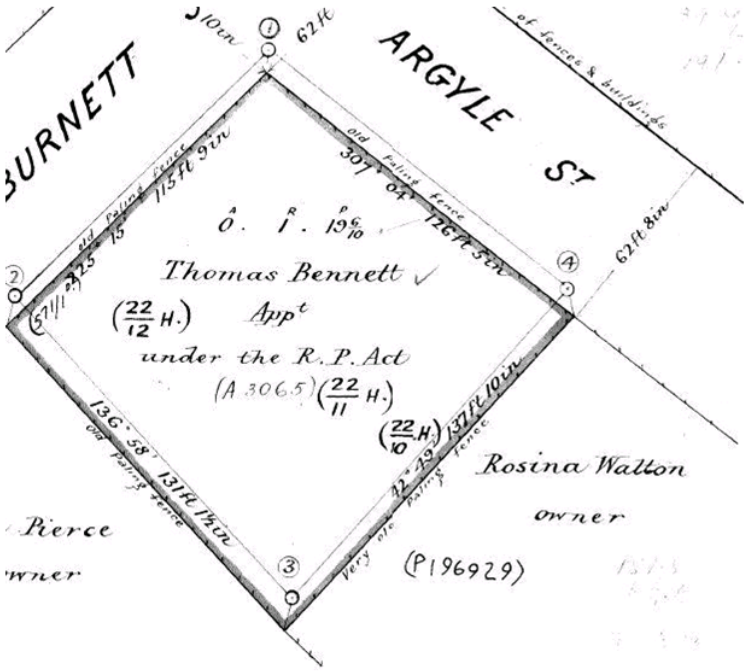


Figure 4.3 - Detail from Hobart 9/17,surveyed June 1900

In May 1920, Bennett sold a portion of the above land to Walter Frederick McVilley[12]. The land conveyed in this transfer corresponds to the current title for 40 Burnett Street:

[12] DPIPWE The LIST CT 277/72

Figure 4.4 - Detail from DPIPWE CT 277/72

McVilly died in October 1944, leaving the land to his widow Jean Elizabeth Sansom, who in October 1947 sold the property to Colin Blackwood, a storekeeper. Blackwood in turn sold the property to Arthur Goldsmith Gregory in November 1955[13], and in January 1960 Gregory sold to Nickis and Irene Dellas[14]

42-44 Burnett Street

Reference to Sprent's Hobart Town survey (ca 1843) shows a substantial masonry structure which appears to correspond to the conjoined brick cottages shown in DPIPWE Hobart 9-16:

[13] DPIPWE CT277/72

[14] DPIPWE CT 807/60

Figure 4.5 - Detail from Survey Diagram Hobart 9/16, surveyed October 1899

The purchase from the Sheriff has not been located, although whomever did purchase the allotment must have done so with an eye to subdivision, as the next reference occurs in March 1848, when Charles Abbott sells the property to George Pierce for £36/17[15]. At the time of sale, the land size matches both the current cadastral parcel and the fencing perimeter shown in Sprent around the conjoined cottages.

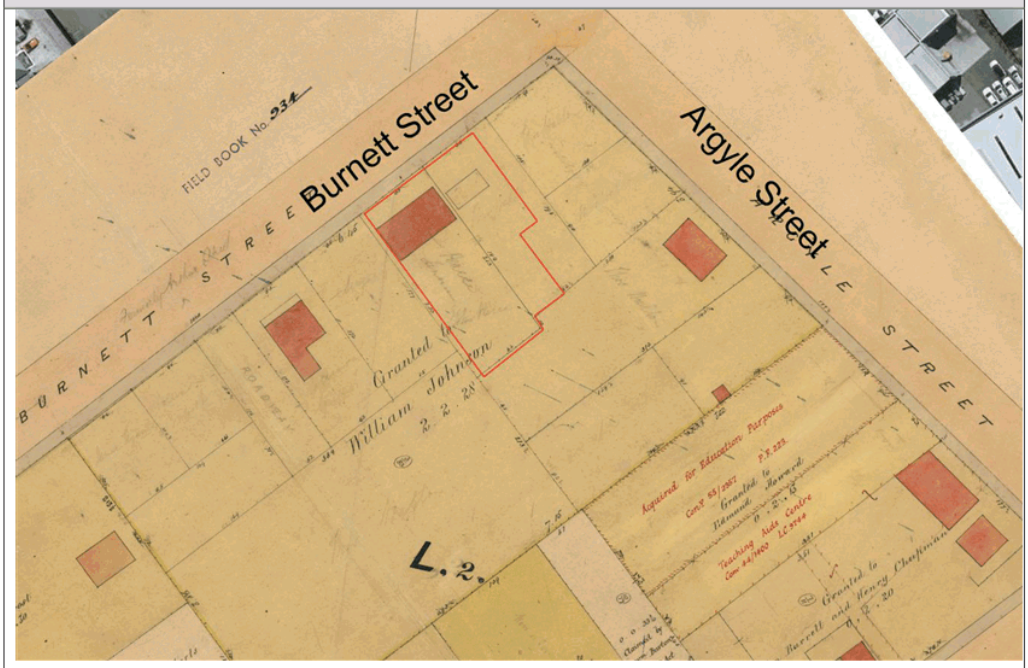
The cottages stayed with the Pierce family for more than a century, passing through three generations. George Pierce died in 1864, leaving the property to his son John Pierce[16]. In July 1897, John Pierce sold the property to William Rosendell Pierce, a teacher, for £300[17]. By 1956, the property was still owned by Pierce's descendants, who sold the property in July 1956 to Silverwood & Beck Pty Ltd[18].

[15] DPIPWE The LIST Mem 3/3520
[16] DPIPWE The LIST Mem 9/7657
[17] DPIPWEW The LIST Mem 9/7657; see also CT116/200 (transfer to Real Property Act title)
[18] DPIPWE The LIST CT703/71

Three years later, Silverwood & Beck sold to Stokes & Hammond Pty Ltd[19], who still owned the property in April 1971[20]. Research beyond this point would require input from Land Titles Office staff and is of little relevance to archaeological considerations. Application was made to Hobart City Council in 1960 for a 'new store', which can be seen in the 1968 aerial photograph (as indeed the demolition of the two conditions is visible in the 1958 aerial photograph).

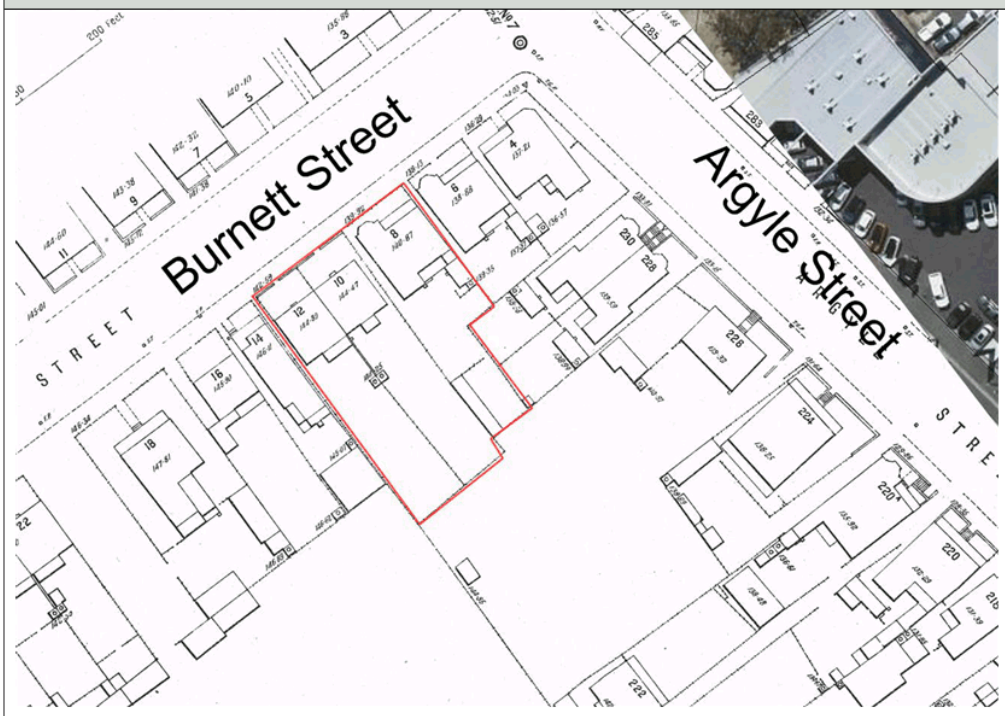
[19] DPIPWE The LIST CT834/2
[20] DPIPWE The LIST CT3029/61

Figure 4.6 - Excerpt from Sprent's c1845 map of Hobart and surrounds. Tasmanian Archive and Heritage Office AF393



The Sprent survey clearly shows the conjoined houses built sometime between 1840 and 1844. The cottage on 40 Burnett Street can be seen as under construction at that time.

Figure 4.7 – 1907 Metropolitan Drainage Board survey showing the subject site and surrounds. (Hobart Sheet 16)

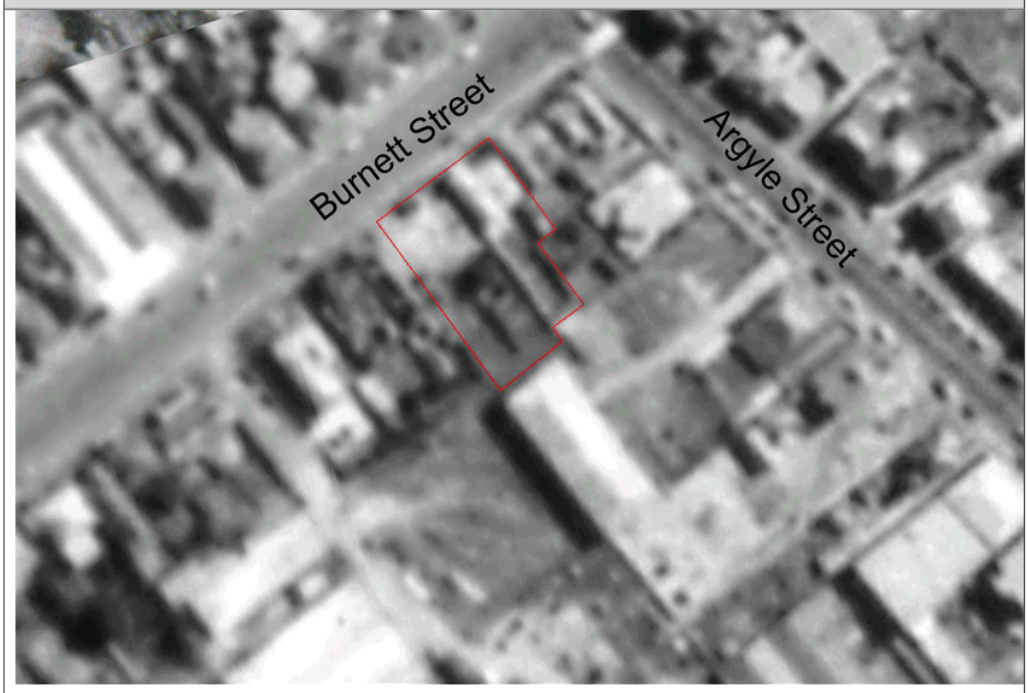


The 1907 Metropolitan Drainage Board plans show the early 1840s conjoined houses each with a small porch/bathroom addition to the rear. By that time the c1880s larger house had been built on the site of the earlier cottage at 40 Burnett Street.

Figure 4.8 – 1946 aerial run of Hobart. DPIPWE Hobart 1946 Run 1, 10894.

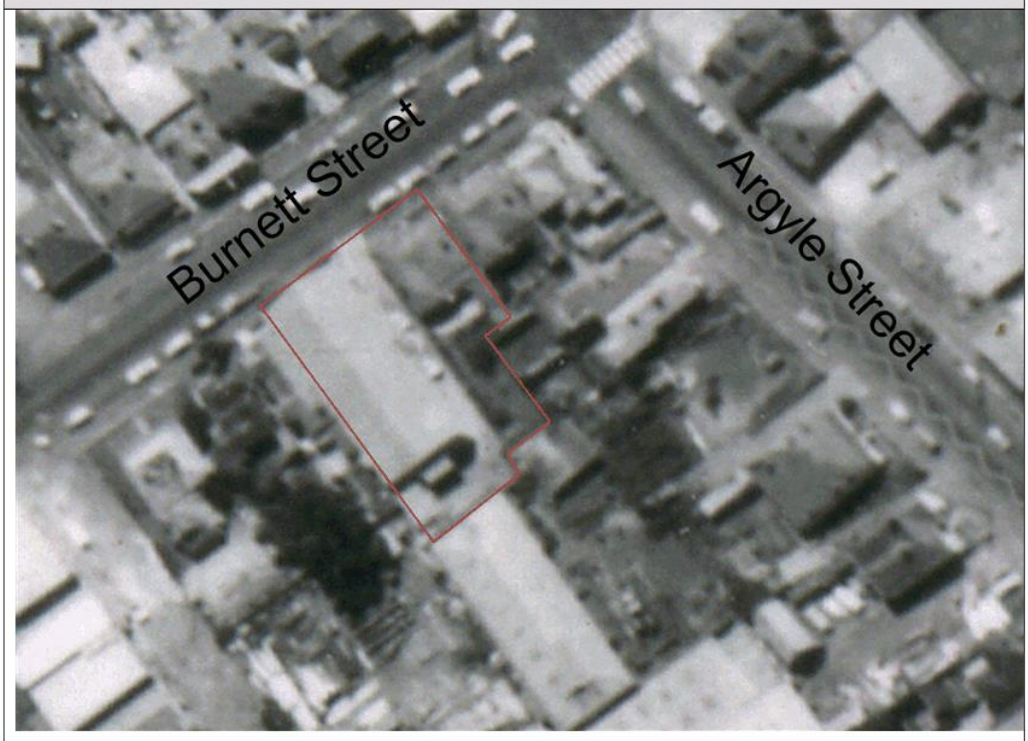
The 1946 aerial photograph shows the subject site in much the same form as the 1907 Metropolitan Drainage Board survey, indicating little/no development in the first half of the c20th.

Figure 4.9 – Excerpt from the 1958 aerial run of Hobart. Hobart Run 5-T332-12 (March 1958).



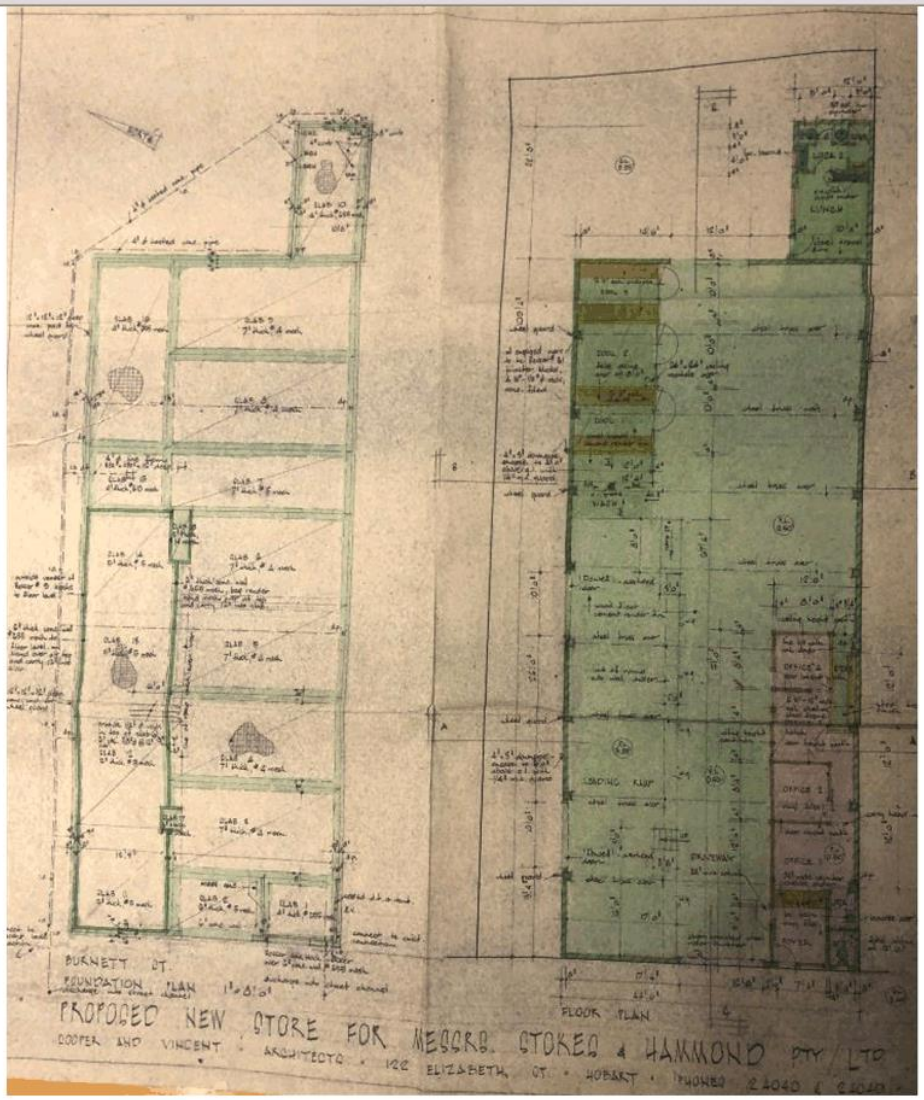
The 1958 aerial photograph shows the subject site in much the same form as the 1946 aerial photograph, again indicating little/no major development in the first half of the c20th.

Figure 4.10 - Excerpt from the 1968 aerial photograph of Hobart. Hobart Run 6-153, February 1968.



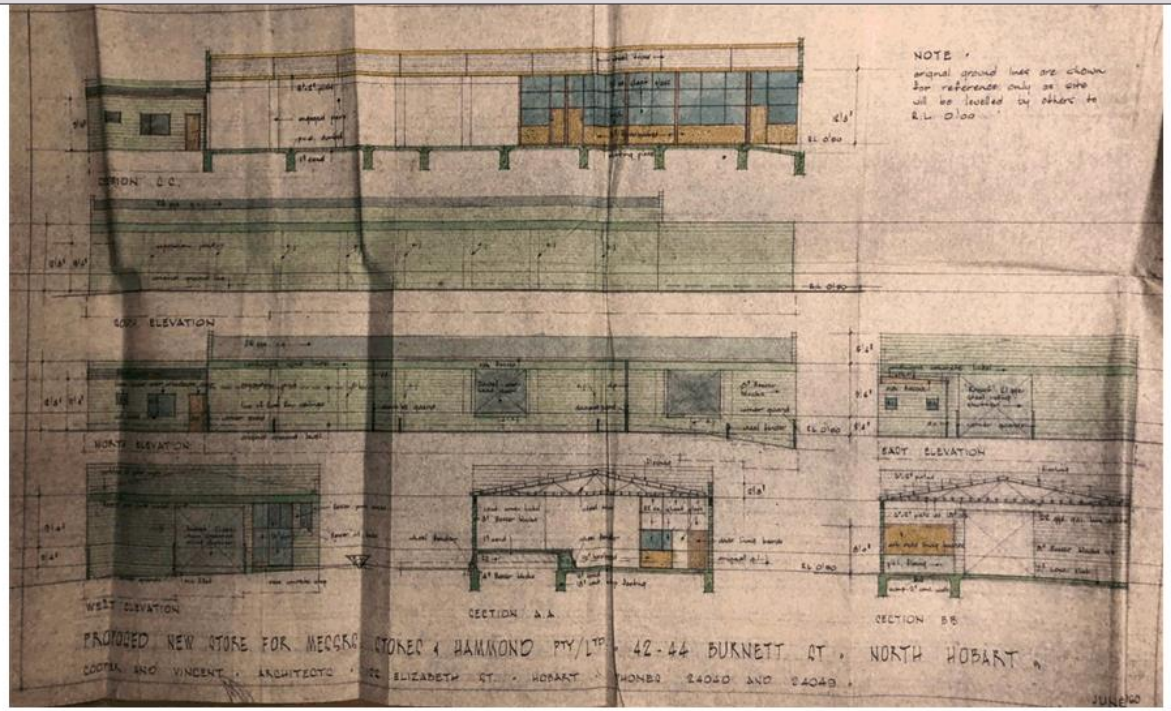
The 1968 aerial photograph depicts the site in much the same form as it currently stands, with the c1880s house on 40 Burnett Street and the c1960 Stokes and Hammond store on 42-44. Little/no major development has occurred on the site(s) since that time.

Figure 4.11 – Foundation and floor plan for new Stokes and Hammond store at 42-44 Burnett Street, 1960. Tasmanian Archive and Heritage Office AE417/3/1293



The 1960 plans for the Stokes and Hammond building show a 5"-7" slab across almost the entire site, with a series of 18" ground beam footings gridded across the site. A stormwater line on the eastern side of the building is shown.

Figure 4.12 – Sections and elevations for new Stokes and Hammond store at 42-44 Burnett Street, 1960. Tasmanian Archive and Heritage Office AE417/3/1293



The 1960 plans for the Stokes and Hammond building show that the entire ground level of the site was reduced by approximately 300mm (deeper rearward) with the grid of ground beams a further 18" below the base of finished slab level.

The subject site has a simple development history that can be summarised as the following:

Decade	40 Burnett Street	42-44 Burnett Street
1840s	Construction of cottage c1845.	Construction of conjoined houses c1840-44
1880s	Demolition of c1845 cottage. Construction of existing house.	
1960s		Demolition of conjoined houses Construction of Stokes and Hammond store.
2020	No major development since 1880s.	No major development since 1960s.

The following figures depict the evolution of the buildings on the site as per the historical sources above:

Figure 4.12 – Overlay of the of the mid-1840s depiction of the buildings on the subject site as per the Sprent survey (green) in relation to the subject site (red). This survey is known to have a very high degree of accuracy.

Figure 4.13 – Overlay of the of the pre-1907 depiction of the buildings on the subject site (blue) based on the Metropolitan Drainage Board survey, in relation to the subject site (red). This survey is known to have a very high accuracy.

Figure 4.14 – Overlay of the of the pre-1968 depiction of the buildings on the subject site (yellow) based on the 1968 aerial photograph, in relation to the subject site (red). This survey is known to have a very high accuracy.

5. Current site observations and assessment of prior disturbance

As per the methodology outlined in Section 2.1, Section 4 has formed a desktop assessment of the factors which have influenced the development of the possible archaeological resource within the subject site over a 180+ year period.

However, it is critical to understand other factors, in particular site disturbance, which may have impacted upon the archaeological potential of the site and its ability to provide meaningful archaeological remains which answer research questions such as those above.

This section will review site observations and likely scenarios which would have resulted in disturbance, in order to assist in understanding the likelihood of the survival of archaeological remains.

5.1. General site observations

Little insight into the archaeological potential of the site can be gained from site observations. The backyard of the extant c1880s house at 40 Burnett Street is concreted (and not the site of any known historical development in any case). Practically the entire ground area of 42-44 Burnett Street is concrete slab (warehouse floor) therefore any relevant on-ground observations are not possible in either case.

The only meaningful clues from site observations are that the floor levels of each building are relatively low to the street level – without any indication of substantial underfloor areas. This is indicative of a lower chance of survival of any earlier archaeological remains beneath each building footprint.

Figure 5.1 – Overview of the site from Burnett Street, indicating a similar floor level to the adjacent footpath.

5.2. Likely specific disturbance events

Whilst the observations above give little real detail on possible disturbance, a disturbance history can also be built from a desktop assessment - i.e. known events which are likely to have impacted upon archaeological remains. Section 3.3 has detailed the evolution of the site from the historical information which is available.

The possible impact upon archaeological remains deriving from each of these events will be detailed below:

Demolition of the 1840s buildings

The c1845 building on 40 Melville Street was demolished around 1880 for the construction of the current building on that site. No records have been found as to that demolition and no indication as to how thorough that demolition was. It is presumed that due to the low setting of the existing building, that the demolition of that building would have been reasonably thorough.

The conjoined brick houses on 42-44 were demolished around 1960. Whilst plans exist for the c1960 (extant) building, they give no indication of demolition of earlier buildings and no accompanying specifications that may allude to demolition procedure were found.

Construction of subsequent buildings

Given that the c1880 building at 40 Burnett Street is low set and of a substantial masonry construction, it is considered likely that its construction would have required substantial excavation. The building is wholly on top of the footprint of the earlier building, and the foundations for the existing building would have certainly disturbed and truncated any subsurface remains of that earlier building.

The 1960s foundation plans and sections for the warehouse at 42-44 Burnett Street indicate a grid pattern of 18"x18" strip foundations which have intersected the known footprint of the earlier buildings in several lines. The sections also indicate that at least 300mm of 'existing ground level' was removed across the site for the construction of that building. Given the c1960 construction date, it is likely that mechanical excavation was utilised which usually results in a higher degree of disturbance in ease of clearing the site. Those actions would certainly have had a major impact on earlier archaeological remains (if these survived the demolition of those earlier buildings) removing all shallow deposits and truncating in several lines any deeper remains.

Subsequent service trenches etc.

A search of public underground asset registers via the 1100.com.au system does not reveal any major public underground assets running through the site. Note that this does not necessarily indicate any privately-owned underground assets nor any redundant services which may have caused some localised/linear impact (the

1960s plans show a stormwater line running along the eastern driveway of 42-44 Burnett Street). However, it does appear that the site has not been subject to any extensive/major disturbance from such trenches.

6. The likely significance and research potential of archaeological remains

As depicted above, the subject site has a reasonably simple development history, with the two 1840s buildings near the Burnett Street frontage being the only early development on the site(s). The portion of the subject site which was subject to that c19th development was wholly residential and appears to have remained as such until the 1960s (40 Burnett still being residential, albeit a later development overprinting the 1840s residential development).

Given the likely disturbance of the 1840s development by the 1880s residential building and the 1960s store building, **it is concluded that it is unlikely that substantial/intact archaeological remains are present on the site(s).**

Whilst it is possible that some in-situ (probably largely truncated) structure from the 1840s buildings remain beneath the existing buildings, the likely low integrity of these and the fact that they merely represent an already well-represent built and archaeological theme in the area (i.e. small-scale mid-c19th residential development), it is concluded that any such archaeological remains are not of any remarkable quality and therefore they are of low/no archaeological potential – i.e. it is unlikely that any remains on the site would be of any great value in demonstrating (or contributing to) a previously unknown aspect of our cultural heritage.

It is considered that the site has little or no archaeological potential, and therefore it is concluded that any further development of the site may proceed without the need for any further archaeological input.

APPENDIX L

Architectural Design Statement

BPSM architects

BURNETT STREET ARCHITECTURAL DESIGN STATEMENT

Context

North Hobart offers an eclectic mix of heritage, scenery, and culture, forming a series of exciting activities and attractions. Nestled amongst the foothills of Mt Wellington and the parklands of the Domain, North Hobart combines heritage charm with a modern lifestyle in a setting of beauty vibrancy. It is home to award-winning restaurants that offer fine dining experiences, using the best Tasmanian produce with flavours from all around the world. Once largely confined to the Elizabeth Street strip, the "hub" of North Hobart is today expanding out, creating a vibrant, mixed used precinct, which is replacing the fading, light-industrial, post-war uses that, coincidently, grew from the original North Hobart residential dormitory suburb. Burnett Street, located in the heart of this area and running off Elizabeth Street at one end of the original "strip" is ideal as the street for this expansion.

This brown field redevelopment is intended to become part of a return to a higher density of community activity to this area, as predicted in the recent 2019 Population Projection report. It was identified in this report that Hobart is projected to experience an increase in population, approximately of 10,500 people between 2017 and 2042. This projection result is driven by overseas in-migration, as well as those of the younger age profile who are projected to return to Hobart. With the projected increase in population, quality housing stock in Hobart will also need to increase concurrently to accommodate for different levels of cost and affordability.

(source: *Population Projections Tasmania and Local Government Areas.pdf*).

The projected increase in density will create a highly desirable city in which to live and play, and will build on the emerging patterns of use, bringing life and activity to support the retail, cultural, and sporting community aspirations of North Hobart.

This development brief was to provide quality homes and a landmark building to proud Tasmanians, that responded to its inner city urban context and setting. In identifying the growth and opportunity within this part of Hobart city, the Burnett Street Apartment project aims to add value to the existing city fabric with the following architectural gestures and response.

BPSM architects
Bush Parkes Shugg & Moon

Activating Social Potential to the Greater Part of North Hobart

Along with a recently approved multi-residential development just around the corner, the Burnett Street Apartments project will activate a quieter part of North Hobart by continuing a lively edge and link to the busy streets of Elizabeth Street.

The Burnett Street Apartments offer an opportunity to continue the lively and engaging "NoHo" experience by enabling a more positive linkage from the Elizabeth Street, through a semi-industrial area to leafy Soundy Park. The proximity to this park allows and encourages its residents to use the public open space, interact and be part of the city. The North Hobart strip is currently the bustling heart of this area but is limited to a small part of Elizabeth Street, condensing pedestrian and traffic activity. Burnett Street provides the opportunity to expand this strip, and at the same time provide an attractive and enjoyable connection to the nearby park.

The Burnett Street Apartments will not only offer high-quality living spaces and on-site parking for residents, but are also proposed to provide high quality retail options on the ground floor level. It is intended that this will foster an engaging space along this light industrial area of North Hobart, expanding the current social and commercial areas of the northern Elizabeth Street dining precinct.

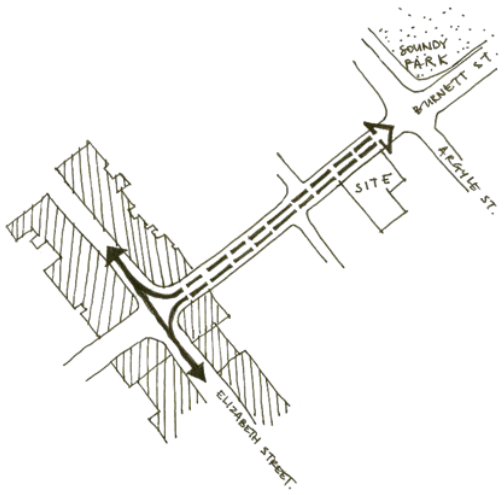


Diagram 1.0 Connection between Elizabeth Street and Burnett Street. This diagram illustrates the vibrant and busy section of Elizabeth Street that will spill into Burnett Street, via an engaging stopping/diversionary point on the way to Soundy Park – the Burnett Street Apartments site is well placed to be designed as that point

BPSM architects
Bush Parkes Shugg & Moon

Addressing Public Space Boundary and Encouraging Passive Surveillance

The proposed site is classified under 23.0 Commercial zone in the Hobart Interim Planning Scheme 2015, however, it is also surrounded by a mixture of Light Industrial, General Business, and Inner Residential zone. To improve diversity of generally non-residential zones, the space between Private (living spaces) and Public (public realm) - as shown hatched in the following diagram (Diagram 2.0) - is designed to encourage passive surveillance and social interaction.

This "in between space" can add to the character of the city in encouraging social interaction between the flourishing city users. This façade "edge" can be utilised as an urban mechanism to enhance the street edge, reflecting the transition between the Central Business Zone and the inner residential areas.

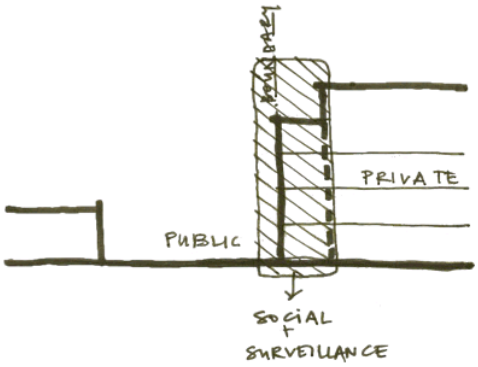


Diagram 2.0 Public and Private Façade Edge.

The architectural treatment to this hatched zone, as shown, has been designed with the intention to soften the overlap of the private and public zones.

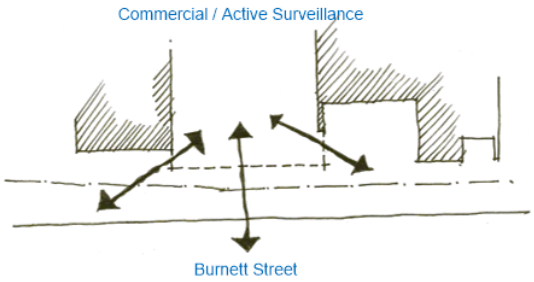


Diagram 3.0 Ground Floor Active Surveillance from Commercial space towards Burnett Street

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Medium Density Living

With Hobart's population set to dramatically increase, maximising liveability opportunities on smaller blocks of land in higher density areas will also become a significant planning and design factor. The solution in Hobart lies not only in the promotion, experimentation, and construction of new and innovative living environments, but also in the way in which we discover and implement strategies for better dealing with public spaces. If our private domain is to become concentrated, then our collective space needs to serve us better. There is no doubt that new housing models will emerge to cope with densification, however, this should occur via a managed and engaged process that realises the potential of the community, rather than a reactive process. It is evident that there must be a balance between the investment we make in the social amenities and investment we make in housing solutions.

While the Burnett Street Apartments project acknowledges building height restrictions in this zone, the project opted to maximise the opportunity within building footprint. This will encourage unified services; will better utilise space through parking in the basement garage; and lessen the strain of the housing crisis in the city. The resulting design has considered the overall visual impact of the project, and has stepped back the top floor in order to minimise the visual impact from Burnett Street.

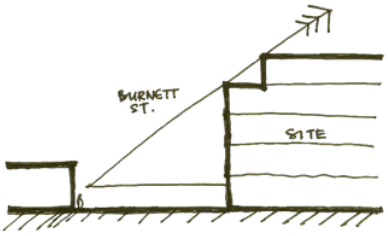

Diagram 4.0 Height Impact

Addressing Scale of Building and Linking Existing Building Mass With Existing Surrounding Building Forms

The Burnett Street Apartments will sit amid the current urban context visually, complementing the current urban fabric. The proposed ground level is to be as transparent as possible to encourage surveillance and connection to the street level. Referencing the sawtooth roofing profile of the existing industrial buildings around the site, the proposed building form incorporates and continues the distinct architecture language in the current roofline silhouettes.

Referencing the intention of Diagram 5.0, the façade also features an architectural "frame" to draw the eye towards vertical timber elements and trailing greenery, breaking up the visual mass along the street front and creating an attractive transition between the lower residential façade on the left and a commercial building mass on the right. The proposed building mass is similar in aesthetic

and appeal to the surrounding urban environment, lightly echoing the simple form of the neighbouring structures and pulling elements from the industrial heritage of the area.

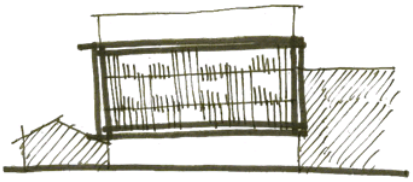

Diagram 5.0 Architectural Language. "Frame" as transition

Consideration has also been given towards the neighbouring buildings on the adjacent Argyle Street side, in reducing the visual impact of the site, which are lower in height and bear various heritage aspects. The façade facing Argyle Street then echoes the projection of the roofline, referencing the street context and presenting a transitional effect between the ground-level period-built residence to the left and the taller and more modern, semi-industrial retail building to the right.

Diagram 6.0 Architectural Language. Referencing surrounding context

The mass of the northern-eastern face has also been broken up by layering a selection of materials of various shades and textures, including a charcoal cladding which wraps around the northern face from the front and rear of the building, enfolding the building at both sides and diminishing the overall visual bulk. A "fin" glides up the façade from the first floor to the penthouse/terrace level, not only guiding the eye smoothly up towards the open sky but also reducing the visual impact of a solid external wall, and providing angled light to each level through eastern facing windows.

The Burnett Street Apartments have also been set back from the boundary at the rear of the site with the intention of lessening the visual perception that the building is "towering over" the neighbouring residences, and to allow more light into those residences and the lower levels of the Apartments.

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Interpreting Local Context with Materials and Architectural Gestures

The architectural language of the project is designed to complement and enhance the current urban language of current North Hobart including ideas such as the use of soft greenery to encourage residents tend to their balcony garden boxes and linger in the passive surveillance zone. Façade lighting will also be used to highlight architectural features and brighten up the public strip, creating a safer pedestrian area.

Vertical timber-look elements on the façade will be used for privacy as well as highlighting "carved out" balcony spaces in the façade, softening the mostly industrial language along Burnett Street. The façade is intended to slightly change according to the sun movement using sliding panels that will work as a sunshading mechanism.

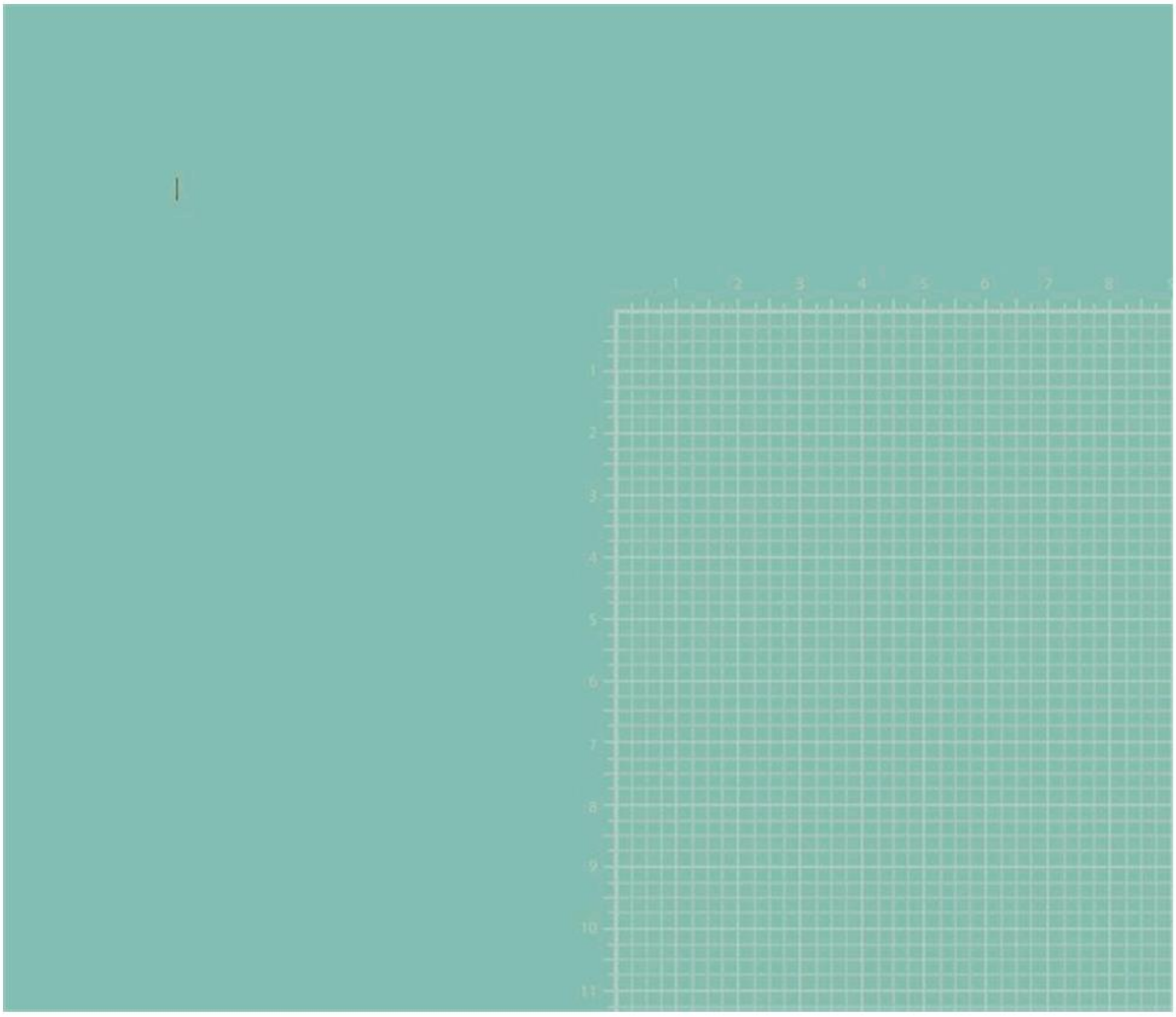
A vibrant colour will feature on the ground floor to "brighten" the pathway from Elizabeth Street to Soundy Park and act as a visual cue to pedestrians to draw the eye upwards.

Precedents

BPSM architects
Bush Parkes Shugg & Moon

Summary

The Burnett Street Apartments are proposed not only as part of an attractive option to the current housing stock, but also as a means of expanding the vibrant NoHo experience and creating an engaging, visually appealing, and community-focussed addition to North Hobart.



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Engineers & Planners

APPENDIX K

Building Physics Report

10342-CAN-ES0003[00]

To:	Su Jan New Clark, Darren Jones (BPSM)		
From:	Eriko Danilevsky (Inhabit)	**Reviewer:**	Jason Gaekwad (Inhabit)
Date:	17th January 2020		
Project:	40-44 Burnett Street, Hobart		
Subject:	NCC 2019 Part F4 DtS assessment		

1. Summary

Inhabit has conducted an NCC 2019 Part F4 Deemed to Satisfy (DtS) assessment of bedroom daylight access through the skylights for the proposed multi-residential development at 40-44 Burnett Street Hobart. As advised by the building surveyor, Clause F4.2 is applicable to the windows facing the lightwells. The below table outlines the results of the assessment. As shown in the table, the lightwell design complies with the requirement of NCC 2019 Part F4 Deemed to Satisfy.

Clause	Requirement	Compliance
F4.2 a) b)	a) Bedrooms must have window lite area >10% of room floor area and windows are open to sky or face an area open to the sky b) Windows must be at a distance from the opposing (lightwell) wall of at least 1.75m	a) Yes. b) Yes. Horizonal distance from window to lightwell wall is 1.75m

2. Project details

40-44 Burnett Street is a multi-residential development in Hobart, classified as Class 2 under NCC 2019. Six lightwells penetrate vertically through the building, and provide a level of daylight access to bedrooms which have windows facing the lightwells.

Figure 1 Rendering of the proposed project

3. DtS provisions

The DtS provisions concerning natural light are provisions Clause F4.2 and F4.3. As advised by the building surveyor, F4.2 is applicable to the windows facing the lightwells.

F4.2 Methods and extent of natural light

(a) *Required* natural light must be provided by—

(i) *windows*, excluding *roof lights*, that—

(A) have an aggregate light transmitting area measured exclusive of framing members, glazing bars or other obstructions of not less than 10% of the *floor area* of the room; and

(B) are open to the sky or face a court or other space open to the sky or an open verandah, carport or the like; or

(ii) *roof lights*, that—

(A) have an aggregate light transmitting area measured exclusive of framing members, glazing bars or other obstructions of not less than 3% of the *floor area* of the room; and

(B) are open to the sky; or

(iii) a proportional combination of *windows* and *roof lights required* by (i) and (ii).

Vic F4.2(b)

(b) Except in a Class 9c *aged care building*, in a Class 2, 3 or 9 building or Class 4 part of a building a *required window* that faces a boundary of an adjoining allotment or a wall of the same building or another building on the allotment must not be less than a horizontal distance from that boundary or wall that is the greater of—

(i) generally — 1 m; and

(ii) in a *patient care area* or other room used for sleeping purposes in a Class 9a building — 3 m; and

(iii) 50% of the square root of the exterior height of the wall in which the *window* is located, measured in metres from its sill.

Vic F4.2(c)

(c) In a Class 9c *aged care building*, a *required window* must be transparent and located—

(i) in an *external wall* with the *window* sill not more than 1 m above the floor level; and

Figure 2 Clause F4.2 extracted from NCC 2019 Building Code of Australia – Volume One

4. Design assessment

Table **1** summarises the result of design assessment. Please refer to Appendix A for the architectural layout used for the assessment. A wall height of 12.2m was used for the horizontal distance calculation of F4.2 b), which gives the required distance of 1.75m (greater than 1m) between the windows and the lightwell walls.

Table 1 Assessment results – bedrooms adjacent to skylights

Apartment	Room	Floor Area	Window Lite Area	F4.2a)	F4.2b)	Compliance
		m²	m²	Window Lite Area / Floor Area	Horizontal Distance	
Requirement				10%	1.75m	
1.1	Bedroom A	8	2.80	34%	1.75m	Yes
1.2	Bedroom B	12	1.96	16%	1.75m	Yes
1.3	Bedroom A	12	1.96	16%	1.75m	Yes
1.4	Bedroom B	7	1.54	21%	1.75m	Yes
1.4	Bedroom C	7	1.96	27%	1.75m	Yes
1.5	Bedroom B	7	1.54	22%	1.75m	Yes
1.5	Bedroom C	7	2.32	33%	1.75m	Yes
1.6	Bedroom B	8	2.32	30%	1.75m	Yes
1.6	Bedroom C	8	2.32	30%	1.75m	Yes
1.9	Bedroom A	7	2.80	39%	1.75m	Yes

REV	DATE	DETAILS	CHECKED
1	06.01.2020	Lightpoll Review	

BPSM architects
Bluth Parkes Shugg & Moon

PROJECT	BURNETT STREET APARTMENTS
ADDRESS	40 AND 42-44 Burnett Street
CLIENT	Behrakis Group
SHEET NAME	LEVEL 01
PROJECT NUMBER	H1914
SCALE AT A1	1 : 100
APPROVED BY	Approver
DRAWN BY	Author
DATE	12/05/19
SHEET	DA203 REV 1

Submission to Planning Authority Notice

Council Planning Permit No.	PLN-20-633	Council notice date	23/09/2020
TasWater details			
TasWater Reference No.	TWDA 2020/01519-HCC	Date of response	08/10/2020
TasWater Contact	Anthony Cengia	Phone No.	0474 933 293
Response issued to			
Council name	CITY OF HOBART		
Contact details	coh@hobartcity.com.au		
Development details			
Address	40 BURNETT ST, NORTH HOBART	Property ID (PID)	5658661
Description of development	Demolition, 31 Multiple Dwellings, General Retail and Hire, Subdivision (Lot Consolidation), Alterations to Access (inc 42 Burnett St)		

Schedule of drawings/documents

Prepared by	Drawing/document No.	Revision No.	Date of Issue
Gandy & Roberts	19.0309 Concept Services Report	1	18/09/2020
BPSM Architects	H1914 Sheets DA100	3	03/05/19
BPSM Architects	H1914 Sheets DA102, DA103	3	12/03/19
BPSM Architects	H1914 Sheets DA200, DA201, DA202, DA203, DA204, DA205, DA206, DA207	4	12/03/19
BPSM Architects	H1914 Sheets DA400	3	12/06/19
BPSM Architects	H1914 Sheets DA401, DA500	3	12/09/19

Conditions

SUBMISSION TO PLANNING AUTHORITY NOTICE OF PLANNING APPLICATION REFERRAL

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 connection to the development must be designed and constructed to TasWater's satisfaction and be in accordance with any other conditions in this permit.
2. Any removal/supply and installation of water meters and/or the removal of redundant and/or installation of new and modified property service connections must be carried out by TasWater at the developer's cost.
3. Prior to commencing construction/use of the development, any water connection utilised for construction/the development must have a backflow prevention device and water meter installed, to the satisfaction of TasWater.

DEVELOPMENT ASSESSMENT FEES

4. The applicant or landowner as the case may be, must pay a development assessment fee of $1,139.79 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

Boundary Trap Area

The proposed development is within a boundary trap area and the developer will need to provide a boundary trap that prevents 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

Application Referral Cultural Heritage - Response

From:	Nick Booth
Recommendation:	Proposal is acceptable without conditions.
Date Completed:	
Address:	40 BURNETT STREET, NORTH HOBART 42 - 44 BURNETT STREET, NORTH HOBART ADJACENT ROAD RESERVE
Proposal:	Demolition, New Building for 31 Multiple Dwellings and General Retail and Hire, Subdivision (Lot Consolidation), Alterations to Access, and Associated Works
Application No:	PLN-20-633
Assessment Officer:	Michael McClenahan,

Referral Officer comments:

This site relates to two existing plots which face directly onto Burnett Street. The smaller of the two is a single storey masonry built residential property dating from the 1880's, whilst the larger is a large warehouse/light industrial property dating from the 1960's. The 1880's residential property at No.40 Burnett Street forms part of a pair on the Burnett Street frontage and largely mirrors two slightly earlier buildings of the same scale and general design that face onto Argyle Road. The four properties could therefore be seen as a coherent group and a small but distinctive residential scale enclave within the largely commercial surrounding area. However, whilst the properties facing onto Burnett Street have been identified for future heritage listing, only those facing onto Argyle Street are currently Heritage Listed under the Hobart Interim Planning Scheme. The site does not fall within a Heritage Precinct.

The proposal seeks the demolition of the 1880's property and the later 1960's warehouse, and the erection of a five storey residential block providing 31 Dwellings, along with underground parking and retail use at ground floor level.

As stated, the site sits outside of a recognised Heritage Precinct and is not individually Heritage Listed. The site is however identified as forming part of Hobarts Area of Archaeological Potential as set out in the Hobart Interim Planning scheme 2015. As such, the proposal must be considered against the relevant heritage provisions of the Scheme.

Archeology

This site is located within an area identified as being of historical archaeological potential. A Statement of Archaeological Potential, Impact Assessment and Method Statement has been prepared and submitted as supporting documentation by Praxis Environment, dated September 2020. The report is considered to be thorough in its assessment, sound in its methodology and to have been conducted by a suitably qualified practitioner.

It is reported that the site has been the subject of only limited development with early cottages built on the site of the warehouse in the early 1840's. This was followed soon after by a larger residential development on the site of the 1880's dwelling. However, both of these early developments were subsequently demolished, the first being replaced by the residential property in 1880, and the earlier cottages surviving until the mid-1960's when they were

demolished to make way for the current warehouse.

The report concludes that both of these earlier developments would not have been of significant size to warrant substantial footings or foundations and that given the degree to which both sites were redeveloped, little to no surviving features of either building is considered likely to have survived.

Given the above, the report concludes that the site is of no archeological potential and that should planning permission be granted, there is no indication that the site should be monitored during construction or subject to archeological consideration.

Based on the report and an examination of the Council's own records, it is considered that the recommendation is considered reasonable in this instance.

Conclusion

Whilst the demolition of the 1880's residential dwelling is considered highly unfortunate given its role in forming part a small and coherent residential enclave of later Victorian properties, it is considered that the proposal would comply with the limited heritage provisions of the planning scheme as they apply to the sites n question.

Nick Booth
Heritage Officer
10 November 2020

Application Referral Development Engineering - Response

From:	Cameron Cecil
Recommendation:	Proposal is unacceptable, however subject to design amendments or submission of additional information it may become acceptable.
Date Completed:	
Address:	40 BURNETT STREET, NORTH HOBART 42 - 44 BURNETT STREET, NORTH HOBART ADJACENT ROAD RESERVE
Proposal:	Demolition, New Building for 31 Multiple Dwellings and General Retail and Hire, Subdivision (Lot Consolidation), Alterations to Access, and Associated Works
Application No:	PLN-20-633
Assessment Officer:	Michael McClenahan,

Referral Officer comments:

SUMMARY:

- The application is for a multi-storey, residential apartment and commercial development at 40 & 42-44 Burnett Street, North Hobart.
- The existing buildings (the old Novus Windscreens shed and a residential type dwelling converted business use) on the properties are to be demolished.
- The proposed development will have seven levels including two basement levels for car-parking and storage; a ground floor with a 139m^2 commercial tennancy, additional car-parking, rubbish storage, foyer and lobby etc; and four levels of apartments comprising 3 one bedroom apartments, 16 two bedroom apartments, and 12 three bedroom apartments.
- Vehicle access into the site will be via a 5.8 metre wide access driveway off the southern side of Burnett Street, with the redundant cross-over at the northern end to be removed.
- A total of 61 car-parking spaces are proposed with 5 visitor and 6 resident/commercial spaces on the ground floor; and 25 residential spaces on each of the two basement levels.
- A provision for bicycle parking is proposed on each of the 3 parking levels.
- Due to space constraints it is proposed to link the parking levels with one-way ramps, and use traffic lights at the end of each ramp to control vehicle movements and prevent conflict.
- Adequate space for waste/bin storage has been included close to the vehicle entrance.

Discretions:
E5.6.1 - Existing road accesses and junctions (increase in vehicle movements)
E6.6.1 - Number of Car Parking Spaces
E6.6.3 - Number of Motorcycle Parking Spaces
E6.7.2 - Design of Vehicular Accesses (sight distance, ramp geometry and grades)
E6.7.4 - On-site turning

E6.7.5 - Layout of parking areas (parking space dimensions)
E6.7.6 - Surface treatment of parking areas (surface drainage not shown)
E6.7.10 - Design of bicycle parking facilities (not all within 30m of the main entrance)

PLANNING PERMIT INFORMATION:

In a council related engineering context, the proposal can be supported in principal subject to the following conditions and advice:

General Conditions:
ENG 1: Pay Costs
ENG 3A: Access & parking designed and constructed
ENG 3B: Access & parking designed prior to
ENG 3C: Construction certified
ENG 4: Access and parking constructed, sealed and drained prior to use
ENG 5: Number/class of spaces
ENG 5B: Parking space signage
ENG 6: Linemarking
ENG 8: Parking space user class and signage
ENG 12: Construction waste management plan
ENG 13: Waste management plan
ENG tr2: Construction traffic management plan

Advice:
Dial before you dig
Fees and charges
Building Permit
Plumbing Permit
Access
Redundant Crossovers
Work within the Highway Reservation
Road Opening Permit (Occupation of the Public Highway)
New Stormwater Connection

DETAILED ASSESSMENT:

E5.0 Road and railway access code

Clause for Assessment	AS	PC	Comments / Discussion
E5.5.1 Existing road accesses and junctions		Y	A1 - Road is not Cat 1 or 2 A2 - Speed is less than 60km/h **A3 - Increase in vehicle movements will be less than 40/day NOT MET** • The TIA estimates a maximum number of vehicle movements per hour (VPH) of 19 during the afternoon peak, and approximately 169 vehicle movements per day (VPD) for the site • The TIA suggests that the timing of the lights at the intersection of Argyle and Burnett Streets will provide sufficient gaps in the traffic on Burnett Street to enable relativey free flow of vehicles both in to, and out of the development site - Council's development engineer agrees with this assertion • The kerb parking along the section of Burnett Street adjacent to the development operates as a clearway during peak hours - this will also assist in the free flow

of vehicle movements from the site.

PERFORMANCE ASSESSMENT: SATISFIED
P3 Any increase in vehicle traffic at an existing access or junction in an area subject to a speed limit of 60km/h or less, must be safe and not unreasonably impact on the efficiency of the road, having regard to:

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

- The TIA estimates a maximum number of vehicle movements per hour (VPH) of 19 during the afternoon peak, and approximately 169 vehicle movements per day (VPD) for the site
- The TIA suggests that the timing of the lights at the intersection of Argyle and Burnett Streets will provide sufficient gaps in the traffic on Burnett Street to enable relativey free flow of vehicles both in to, and out of the development site - Council's development engineer agrees with this assertion providing use of the access is limited to a left turn in-left turn out type arrangement **CONDITION FOR LEFT TURN ONLY**
- The kerb parking along the section of Burnett Street adjacent to the development operates as a clearway during peak hours - this will also assist in the free flow of vehicle movements from the site.

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

- The TIA states: "The low number of private vehicle movements that will be generated by the development combined with the gaps in the traffic stream that will be generated by the upstream traffic signals means that the access to and from the development site will operate without any significant queuing or delay."
- Council's engineer agrees with the TIA, the (primarily) residential nature, and low number of vehicle movements generated by the development is unlikely to have much impact on the efficiency of the road network, or result in an unacceptable increase in risk to users.

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

- The proposed access type is appropriate for the development providing it is limited to a left turn in-left turn out type arrangement **CONDITION FOR LEFT TURN ONLY**
- It will operate as a private driveway and will be adequately recognised as such to other users including pedestrians.
- The width and other geometry is appropriate to the development.

(d) the nature and category of the road;

- The road is Council administered and is categorised as a major collector.
- The road operates as two lane/two way outside of peak times, and four lane/four way during peak times (the kerb parking is a clearway during peak hours)
- Vehicle speed is generally slow due to the proximity of the traffic lights at the corner of Burnett/Argyle

Taking into account the above, the nature and category of the road is acceptable in terms of the traffic generated by the proposed development and the access type proposed to be used.

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

- Vehicle speed is generally slow due to the proximity of the traffic lights at the corner of Burnett/Argyle
- The TIA suggests that the timing of the lights at the intersection of Argyle and Burnett Streets will provide sufficient gaps in the traffic on Burnett Street to enable relativey free flow of vehicles both in to, and out of the development site - Council's development engineer agrees with this assertion providing use of the access is limited to a left turn in-left turn out type arrangement **CONDITION FOR LEFT TURN ONLY**

(f) any alternative access to a road; **NOT APPLICABLE**

- No alternative access exists

(g) the need for the use;

- Additional housing is desperately needed in the greater Hobart area, and the ability to push development outwards is limited by terrain - the need for the use is high.

(h) any traffic impact assessment;

- A TIA has been completed by Milan Prodanovic which supports the development and proposed access arrangements.
- Council's development engineer agrees with the findings of the TIA

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

- Acceptable subject to conditions

Based on the above assessment and given the submitted documentation, the proposed access may therefore be accepted under Performance Criteria P3:E5.5.1 of the Planning Scheme.

E5.5.2 Existing level crossings			N/A
E5.6.1 development adjacent to roads and railways			N/A
E5.6.2 road and access junctions			N/A
E 5.6.3 new level crossings			N/A
E 5.6.4 sight distance at access and junctions			N/A - The SISD values in HIPS E5.6.4 are excessive and do not accord with the recommendations of Austroads or AS 2890.1. The sight distance has therefore been assessed under HIPS E6.7.2 (ie. AS 2890.1/Austroads)

E 6.0 Parking and Access Code

Clause for Assessment	AS	PC	Comments / Discussion
Clauses 6.6's are all to do with parking number assessment. These will be assessed by planner based on DE assessment of the following relevant clauses.			
Clause 6.6.1 number of car parking spaces		Y	• A total of 61 car-parking spaces are proposed with 5 visitor and 6 resident/commercial spaces on the ground floor; and 25 residential spaces on each of the two basement levels. • The AS of HIPS requires 67 spaces for the residential apartments (this includes 8 visitor parking spaces), and 5 spaces for the commercial tennancy (72 spaces total). • The proposal results in a deficiency of 11 car parking parking spaces. **PERFORMANCE ASSESSMENT: SATISFIED** ***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 RTA Guide to Traffic Generating Developments recommends a minimum of 1 space per dwelling for multi-storey apartment complexes, which equates to 31 spaces for the propsoed development. • Assuming 5 of the ground floor spaces are dedicated as visitor parking; 5 of the ground floor spaces are allocated to the commercial tennancy; and 1 of the ground floor spaces is made redundant and used for on-site turning; the number of parking spaces for residential use is 50. • Given 50 is well in excess of 31, the number of spaces is considered satisfactory as a performance based solution. **CONDITION FOR NUMBER OF**

SPACES, SPACE ALLOCATION, LINE-MARKING AND SIGNAGE

(b) the availability of on-street and public car parking in the locality;

- Burnett Street is four lanes wide – two lanes in each direction. The kerbside lanes are normally used for on-street parking, but no stopping 'clearway' restrictions apply during the peak periods on weekdays.
- The specific parking controls on the southern side of Burnett Street, in the vicinity of the development site, are as follows:
  - 'No Stopping', 7.30 – 9.00am and 4.30 – 6.00pm, Monday to Friday;
  - half hour time limited parking, 9.00 am – 4.30pm, Monday to Friday; and
- unrestricted parking at other times

- The number of kerb-side parking spaces is considered satisfactory to service the short term parking requirements of the commercial tennancy during the day, and allows for parking over-spill during the evening.
- There is no public parking with close proximity to the development site

(c) the availability and frequency of public transport within a 400m walking distance of the site;

The availability and frequency of public transport is excellent, noting:

- Metro operates regular bus services in the vicinity of the development site.
- Elizabeth Street is part of the Turn Up and Go (North) route which operates every 10 minutes Monday to Friday 7am – 7pm; every 20 minutes Saturdays 7am – 7pm; and every 30 minutes Sundays and Public Holidays 7am – 7pm.
- Service number 540 runs between Mount Stuart, North Hobart, West Hobart and the city centre. This service operates at approximately 40 minute intervals on weekdays with additional service during the peak periods.

(d) the availability and likely use of other modes of transport;

- Due to the site's favourable location, cycling, walking and uber are all realistic alternative forms of transport.

(e) the availability and suitability of alternative arrangements for car parking provision;

- Not applicable

(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;

- Council is unable to require a financial contribution without a Parking Strategic Plan. Not applicable.

(j) any verified prior payment of a financial contribution in lieu of parking for the land;

- None

(k) any relevant parking plan for the area adopted by Council;

- There is no relevant parking plan in the vicinity of this proposal. 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.

- Not applicable

Clause 6.7.1 number of vehicle accesses	Y		Number of access points will be no greater than 1.
Clause 6.7.2 design vehicle access		Y	• The kerb-side parking in Burnett Street inhibits vehicular sight distance. • Pedestrian sight distance is compliant. • Other than sight distance, all other aspects of the access are compliant. **PERFORMANCE ASSESSMENT: SATISFIED** ***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;* • OK - The kerb parking along the section of Burnett Street adjacent to the development operates as a clearway during peak hours hence sight distance will meet the Australian Standard during the most critical times. *(b) avoidance of unreasonable interference with the flow of traffic on adjoining roads;* • Not impacted by sight distances *(c) suitability for the type and volume of traffic likely to be generated by the use or development;* • OK - The kerb parking along the section of Burnett Street adjacent to the development operates as a clearway during peak hours hence sight distance will meet the Australian Standard during the most critical times. *(d) ease of accessibility and recognition for users.* • Not impacted by sight distance
Clause 6.6.3 number of motorcycle parking spaces		Y	• No motorcycle parking is proposed - this is considered acceptable because occupants of the apartments have the option of using their allocated car parking space/s for that purpose. • 6.6.3 is applicable for public and employee parking facilities.
Clause 6.7.3 vehicle passing	Y		OK
Clause 6.7.4 on site turning		Y	• Will be required on the ground level where parking is located for visitor and commercial use and may be full, leading to the need for a vehicle to be able to exit the site without having parked. • TIA recommends dedicating one of the parking spaces as a turning area **CONDITION FOR SPACE 11 TO BE A TURNING AREA ONLY**

Clause 6.7.5 layout of parking area		Y •	Discretion is required because plans are in concept only with only basic detail provided, however there is sufficient information to be confident that the design will meet all applicable standards and specifications following detailed design. **CONDITION FOR DETAILED DESIGN TO AUSTRALIAN STANDARD** **Car Parking Space Dimensions (AS2890.1 Fig 2.2 = 2.4x5.4m Class 1A):** OK - dimensions need to be shown **Car Parking Space Design Envelope (AS2890.1 Fig 5.2 300mm clearance on side):** OK - dimensions need to be shown **Headroom: (AS2890.1 Fig 5.3 = 2.2m clearance):** OK **Parking Space Gradient (5%):** OK **Aisle Width (AS2890.1 Fig 2.2 = 5.8m Class 1A):** OK **Garage Door Width & Apron (AS2890.1 Fig 5.4 = 2.4m wide => 7m wide apron):** N/A **B85 Turning Paths:** OK **Parking Module Gradient (manoeuvring area 5% Acceptable Soln, 10% Performance):** OK **Driveway Gradient & Width (AS2890.1 Section 2.6 = 25% and 3m):** DISCRETION - Discretion is required because plans are in concept only with only basic detail provided, however there is sufficient information to be confident that the design will meet all applicable standards and specifications following detailed design **CONDITION FOR 25% INSIDE WHEEL PATH** **Transitions (AS2890.1 Section 2.5.3 = 12.5% summit, 15% sag => 2m transition):** OK **Vehicular Barriers (AS2890.1 Section 2.4.5.3 = 600mm drop, 1:4 slope):** N/A **Blind Aisle Length (AS2890.1 Fig 2.3 = 6x spaces max if public):** OK **Blind Aisle End Widening (AS2890.1 Fig 2.3 = 1m extra):** OK **Circulation Roadways & Ramps:** DISCRETION - Discretion is required because plans are in concept only with only basic detail provided, however there is sufficient information to be confident that the design will meet all applicable standards and specifications following detailed design **CONDITION FOR 25% INSIDE WHEEL PATH**

Clause 6.7.6 surface treatment Only when a new hard stand area is proposed or new development is within a car park area.		Y	• Surface proposed is concrete, but drainage is yet to be shown and will need to be addressed in the detailed design
Clause 6.7.7 Lighting of parking area Planner and health unit to assess			Planner to assess
Clause 6.7.8 Landscaping Planner to assess			Planner to assess
Clause 6.7.9 motor bike parking			N/A - None proposed
Clause 6.7.10 bicycle parking		Y	• Discretion is required due to the parking areas on the basement levels being further than 30m from the entrance. **PERFORMANCE ASSESSMENT: SATISFIED** ***The design of bicycle parking facilities must provide safe, obvious and easy access for cyclists, having regard to all of the following:*** *(a) minimising the distance from the street to the bicycle parking area;* • The low number of vehicle movements to and from the residential parking area means the increase in risk to cyclists is within acceptable limits. *(c) providing clear sightlines from the building or the public road to provide adequate passive surveillance of the parking facility and the route from the parking facility to the building;* • Not applicable *(d) avoiding creation of concealment points to minimise the risk.* • Not applicable
Clause 6.7.11 bicycle end trip Planner to assess			Planner to assess
Clause 6.7.12 siting of car parking Planner to assess based on DE assessment of Clause 6.7.5 layout of parking area			Planner to assess
Clause 6.7.13 facilities for commercial vehicles			N/A
Clause 6.7.14 access to a road			OK

Clause 6.7.15 access to Niree Lane			NA

E 7.0 Stormwater

Clause for Assessment	AS	PC	Comments / Discussion
A1 (SW disposed to Public SW Inf via Gravity / P1 (onsite/pump)		Y	DISCRETION - Drainage not shown and will need to be incorporated during detailed design. However, drainage by gravity to the existing stormwater connection for the lot is feasible.
A2 (WSUD) /P2 (Mechanical Treatment)	Y		a) less than 600m2 b) less than 6 cars c) no subdivision
A3 (Minor SW System (a) 1:20 ARI (b) Runoff no greater than existing or able to be accommodated in Council SW System)	Y		a) will be designed for 20 year storm b) the existing public infrastructure constructed as part of the subdivision has sufficient capacity
A4 (Major SW System accommodates 1:100 ARI)			N/A

PROTECTION OF COUNCIL INFRASTRUCTURE

Council infrastructure at risk	Why?
Stormwater pipes	NO
Council road network	NO

URBAN DESIGN ADVISORY PANEL

MINUTES

5 NOVEMBER 2020

PLN-20-633 40 & 42-44 Burnett Street

Description:

The proposal is to demolish existing structures at 40 Burnett Street and 42-44 Burnett Street and construct a new seven storey building (two below ground floors and five above ground floors) that is primarily for 31 multiple dwellings. The ground floor is proposed to also contain commercial space with direct frontage to Burnett Street. The use of relevant floors is set out below.

- Basement level: Car parking – 25 spaces. Accessed via internal vehicle ramps.
- Lower ground level: Car parking – 25 spaces. Accessed via internal vehicle ramps.
- Ground level: Commercial tenancy, foyer and lift lobby, garbage room, services, car parking – 11 spaces (5 visitor and 6 tenant) accessed via enlarged crossover on the north western side of the site, adjacent to 48 Burnett Street.
- Level 1: Nine dwellings (1 x 1 bedroom, 5 x 2 bedroom, 3 x 3 bedroom).
- Level 2: Nine dwellings (1 x 1 bedroom, 5 x 2 bedroom, 3 x 3 bedroom).
- Level 3: Nine dwellings (1 x 1 bedroom, 5 x 2 bedroom, 3 x 3 bedroom).
- Level 4: Four dwellings (1 x 2 bedroom, 3 x 3 bedroom).

The building is proposed to have a height of approximately 18.4 metres to the top of its lift well.

Comment:

A previous proposal was presented as a pre-application presentation to the Panel on 27 August 2020. The Panel noted the changes made to the design since that presentation.

The proposed development is quite intensive and the Panel still held misgivings about the very small or non-existent setbacks from side and rear boundaries, including where the building overlooks the rear of two heritage listed cottages that front Argyle Street.

The Panel acknowledged that this part of the city is likely to be developed more intensively than exists at present, and that the proposed building may reasonably be considered in that context. The proposal may initially appear quite prominent, because of the relatively underdeveloped sites around it, but the passage of time is likely to change that.

Overall, the Panel regarded the proposed height of the building as reasonable. However, it did feel that the top storey and roof is un-necessarily complex in form and is likely to draw the eye and emphasise the building's height. The Panel would prefer a simpler and more recessive form for this storey.

While the development will be quite prominent from Argyle St and lower Burnett Street viewpoints, the Panel acknowledged that the varied architectural treatment to the north-eastern elevation has the effect of reducing the apparent - or visual - mass of the building. In addition, likely future development of some adjacent sites may further mitigate its apparent bulk.

The contrast in height and bulk between the neighbouring cottages (at 38 Burnett Street and 272 and 274 Argyle Street) and the proposed building is quite abrupt, however the heights permitted by the Scheme would seem to give this difference a degree of inevitability.

The Panel felt it was important to achieve an improved transition at and near street level, where this contrast can to some extent be alleviated. The Panel felt that the development could utilise some elements or characteristics of the cottage at Number 38 within the frontage of the new development, particularly at street level, and that the design and choice of materials along the street is of great importance.

One of the suggestions was the use of planter boxes with places to sit along the street level frontage, in particular along the property boundary and encouraging the use of brick or masonry in the ground floor elevation to provide stronger links with the extant residential cottages within the streetscape.

In discussing the proposed landscape elements, the Panel were concerned with ensuring the proper management and care of the proposed planter boxes on the upper level balconies and the provision of adequate size and appropriate irrigation and drainage. The Panel also felt that it would be beneficial if the proponent could demonstrate how the planter boxes will be successful.

A possible opportunity was identified at the rear of the development to create a deep planting space for a large tree to soften the scale of the building.

Although not something within the control of the proponent, the Panel would encourage planting of street trees to soften the impact of the building and make the street more attractive in this locale, particularly if it was to be part of a precinct wide street tree planting program.

As the building is to be essentially residential, it was felt that it would benefit the complex to give the residential entrance more prominence - to give it a design treatment which greets the residents and makes the entrance more apparent and welcoming, for example a change of paving and wall finishes, a seat, planting at ground or higher. This could also create a 'linkage' to the residential character of the cottage at no 38 Burnett Street. The elements or materials for the entry could possibly extend beyond the site boundary to include part of the public domain.

The Panel suggests that, should the Council approve the application, conditions and/or advice be included with regard to the provision of a schedule of finishes, and in particular a detailed design for the street level frontage, including the ground level façade, paving, landscape elements, street furniture, lighting, signage, etc, and details of the various balcony planter boxes.

URBAN DESIGN ADVISORY PANEL

MINUTES

27 AUGUST 2020

40 & 42-44 Burnett Street Pre-App

Description:

The proposal is to demolish existing structures at 40 Burnett Street and 42-44 Burnett Street and construct a new seven storey building (two below ground floors and five above ground floors) that is primarily for 31 multiple dwellings. The ground floor is proposed to also contain commercial space with direct frontage to Burnett Street. The use of relevant floors is set out below.

- Basement level: Car parking – 25 spaces. Accessed via internal vehicle ramps.
- Lower ground level: Car parking – 25 spaces. Accessed via internal vehicle ramps.
- Ground level: Commercial tenancy, foyer and lift lobby, garbage room, services, car parking – 11 spaces (5 visitor and 6 tenant) accessed via enlarged crossover on the north western side of the site, adjacent to 48 Burnett Street.
- Level 1: Nine dwellings (1 x 1 bedroom, 5 x 2 bedroom, 3 x 3 bedroom).
- Level 2: Nine dwellings (1 x 1 bedroom, 5 x 2 bedroom, 3 x 3 bedroom).
- Level 3: Nine dwellings (1 x 1 bedroom, 5 x 2 bedroom, 3 x 3 bedroom).
- Level 4: Four dwellings (1 x 2 bedroom, 3 x 3 bedroom).

Comment:

The property that is proposed to be developed is over two titles, in a Commercial Zone and suitable for mixed used development. The Panel notes that the streetscape has evolved over time and has properties of varying ages and styles of residential, commercial and semi industrial properties. The area is in transition with many sites having potential for further development and/or redevelopment.
The proposal requires the demolition of existing buildings on the site. One of these buildings is 'residential' in character. While the Panel is concerned with the loss of any residential property it accepts that this property is not currently in residential use and is not heritage listed. Its demolition will enable a new residential development of higher density to occur. The Panel accepts the demolition of the buildings currently on the site.

The Panel is of the opinion that the relationship between the proposed development and the adjacent properties at 38 Burnett Street and the heritage listed properties at 272 Argyle Street and 274 Argyle Street is a significant consideration.

URBAN DESIGN ADVISORY PANEL
MINUTES
27/08/2020

In regard to the single storey house at 38 Burnett Street the relationship and transitioning between this and the proposed new building creates a marked contrast in the streetscape.

While the Panel finds the overall height of the proposal to be reasonable, it considers that more could be done to better transition the apparent height and massing of the proposal to these neighbouring properties.

Consideration of ways to soften this transition through the use of setbacks, material changes and colour is encouraged.

It is also suggested that elements of the form and character of 38 Burnett be re interpreted and incorporated into adjacent parts of the Ground and First floor facades of the proposal to improve the transition. Further modulation of the façade to reflect the traditional streetscape pattern could also be considered.

Similarly some landscape works across the front of the building and in particular immediately adjacent to 38 Burnett Street would assist with the transition and reinforcement of the predominantly residential nature of the proposal and enhance the pedestrian experience. These elements could include low sitting walls, bike racks, bollards and planting.

The Panel encouraged the inclusion in the street elevation of a more detailed and accurate presentation of 38 Burnett St in order to better illustrate how the transition between the buildings will be achieved.

With regard to the Argyle Street properties the Panel was particularly concerned with the impact of the proposal on the amenity of these properties.
In order to retain a degree of visual privacy for the occupants and the neighbouring properties the Panel would encourage consideration being given to a landscape zone between balconies and the boundary and the balustrading to balconies on the first and second floors, in particular, being made opaque or solid.

On a final note the Panel discussed its reservations around the lack of setbacks at the rear of the property and therefore the potential for a future adjacent development of a similar scale having a significant negative impact on the amenity of the occupants of the rear apartments.

The Panel reminded the proponent that an Apartment Planning Code Scheme Amendment presently before the Tasmanian Planning Commission addresses this issue.

13 Urban Design Advisory Panel - Membership File Ref: F20/118199

Report of the Director City Planning of 11 November 2020 and attachments.

Delegation: Council

REPORT TITLE: **URBAN DESIGN ADVISORY PANEL - MEMBERSHIP**

REPORT PROVIDED BY: Director City Planning

1. Report Purpose and Community Benefit

1.1. This report seeks approval for the appointment of five members for the Urban Design Advisory Panel.

1.2. Three positions were advertised in *The Mercury* on 22 August 2020. The positions that are required to be filled is the position of the chair, a member with both planning and urban design expertise and a member who currently holds an academic position in urban design. As per the Terms of Reference, these roles are for a tenure of three years.

1.3. The nominations were reviewed by the Council at its meeting on the 12 October 2020. The Council requested the matter be deferred and re-advertised to enable all vacant positions to be filled.

1.4. The positions were re-advertised in *The Mercury* on the 21 October 2020.

1.5. Two positions were nominated by the Tasmanian Chapters of the Australian Institute of Architects and the Australian Institute of Landscape Architects as per the Terms of Reference, these roles are for a tenure of three years. In addition proxies were also nominated as allowed for in the Terms of Reference for the Panel.

2. Report Summary

2.1. The Council, at its meeting on 24 February 2020, resolved to seek expressions of interest in the positions for the chairperson, the member with both planning and urban design expertise and the member who currently holds an academic position in urban design be called and the current incumbents be invited to nominate for these positions.

2.2. As a result of the expressions of interest process, five nominations were received, one nominated for the position of chairperson. Four of the nominations also sought to be considered for the position of the member with both planning and urban design and zero applications for the member with an academic position in urban design.

2.3. After the Council, at its meeting on 12 October requested that further expressions of interest in the positions for the chairperson, the member with both planning and urban design expertise and the member who currently holds an academic position in urban design be called and the previous applicants nominations stand and did not require to reapply.

2.4. After the second expression of interest period, a further six nominations were received. These applicants applied for multiple positions within the panel.

2.5. The Tasmanian Australian Institute of Architects and the Tasmanian Australian Institute of Landscape Architects each nominated one person from each Institute.

2.6. The respective nominations are

2.6.1. Chairperson

2.6.1.1. Scott Bamford

2.6.1.2. Helen Norrie

2.6.1.3. George Wilkie

2.6.2. Member with Planning and Urban Design Expertise

2.6.2.1. Fiona Abercrombie-Howroyd

2.6.2.2. Scott Bamford

2.6.2.3. Lucy Burke-Smith

2.6.2.4. Trent Henderson

2.6.2.5. Ian James (current member)

2.6.2.6. James Jones

2.6.2.7. Genevieve Lilley

2.6.2.8. James Morrison

2.6.2.9. Leigh Woolley

2.6.3. Member with an Academic Position in Urban Design

2.6.3.1. Scott Bamford

2.6.3.2. Helen Norrie

2.6.3.3. George Wilkie

2.6.4. Member nominated from the Tasmanian Australian Institute of Architects

2.6.4.1. Keith Drew with both Andrew Shurman and Karen Davis as proxies.

2.6.5. Member nominated from the Tasmanian Australian Institute of Landscape Architects

2.6.5.1. Susan Small with Edwina Hughes as proxy.

2.7. A copy of all the nominations received are included in **Attachment A**.

2.8. Both the current Chair of the Urban Design Advisory Panel, Peter Curtis, and the member nominated by the Tasmanian Chapter of the Australian Institute of Architects, Jamieson Allom, will no longer continue as members. They have both been long standing members of the panel and their significant service to Council should be acknowledged.

Recommendation

That:

1. In respect to the nominee for the Urban Design Advisory Panel as chairperson with urban design and public administration experience the Council appoint:-

(i) Scott Bamford

(ii) Helen Norrie

(iii) George Wilkie

2. In respect to the nominee for the Urban Design Advisory Panel with both planning and urban design experience the Council appoint either:-

(i) Fiona Abercrombie-Howroyd

(ii) Scott Bamford

(iii) Lucy Burke-Smith

(iv) Trent Henderson

(v) Ian James (current member)

(vi) James Jones

(vii) Genevieve Lilley

(viii) James Morrison

(ix) Leigh Woolley

(x) Fiona Abercrombie-Howroyd

(xi) Lucy Burke-Smith

(xii) Trent Henderson

(xiii) Ian James

3. In respect to the nominee for the Urban Design Advisory Panel as person who currently holds an academic position in urban design.

(i) Scott Bamford

(ii) Helen Norrie

(iii) George Wilkie

4. In respect to the nominee from the Tasmanian Chapter of the Australian Institute of Architects the Council appoint:-

(i) Keith Drew with both Andrew Shurman and Karen Davis as proxies.

5. In respect to the nominee from the Tasmanian Chapter of the Australian Institute of Landscape Architects the Council appoint:-

(i) Susan Small with Edwina Hughes as proxy.

6. That the Lord Mayor on behalf of the Council formally thank both Peter Curtis and Jamieson Allom for their significant service as members of the Urban Design Advisory Panel.

3. Background

3.1. The Urban Design Advisory Panel (UDAP) was formed in October 2011 to principally provide independent urban design advice to promote good design and quality urban environment. The Panel has six members with one allocated to the State Architect, however, this position remains unfilled by State Government since 2011.

3.2. The Council, at its meeting of 24 February 2020, resolved to seek expressions of interest in the positions for the chairperson, the member with both planning and urban design expertise and the member who currently holds an academic position in urban design and the current incumbents be invited to nominate for these positions.

Nominations were also requested from the Tasmanian Chapters of the Australian Institute of Architects and the Australian Institute of Landscape Architects.

3.3. Due to the Covid 19 pandemic advertising of the positions were deferred till 22 August 2020. As a result of the subsequent expressions of interest process, five nominations were received, one nominated for

the position of chairperson. Four of the nominations sought to be considered for the position of the member with both planning and urban design. All five nominations meet the necessary qualification and experience for the respective positions.

3.4. Council reviewed the expressions of interest that resulted from advertising in *The Mercury* on 22 August 2020. At Council's meeting on 12 October it was requested that a further period of time for nominations be provided for the three positions. The positions were re-advertised in *The Mercury* on the 21 October 2020.

4. Proposal and Implementation

4.1. During the two nomination periods, Council received a total of three nominations for the position of chairperson, nine nominations for the member with planning and urban design expertise and three nominations for the member currently holding an academic position in urban design.

4.2. The respective nominations are

4.2.1. Chairperson

4.2.1.1. Scott Bamford

4.2.1.2. Helen Norrie

4.2.1.3. George Wilkie

4.2.2. Member with Planning and Urban Design Expertise.

4.2.2.1. Fiona Abercrombie-Howroyd

4.2.2.2. Scott Bamford

4.2.2.3. Lucy Burke-Smith

4.2.2.4. Trent Henderson

4.2.2.5. Ian James (current member)

4.2.2.6. James Jones

4.2.2.7. Genevieve Lilley

4.2.2.8. James Morrison

4.2.2.9. Leigh Woolley

4.2.3. Member with an Academic Position in Urban Design

4.2.3.1. Scott Bamford

4.2.3.2. Helen Norrie

4.2.3.3. George Wilkie

4.3. A copy of the respective nominations are included in **Attachment A**.

4.4. The Council is required to select the successful nominees.

4.5. Both the current Chair of the Urban Design Advisory Panel, Peter Curtis, and the member nominated by the Tasmanian Chapter of the Australian Institute of Architects, Jamieson Allom, will no longer continue as members. They have both been long standing members of the panel and their significant service to Council should be acknowledged.

5. Strategic Planning and Policy Considerations

5.1. The Urban Design Advisory Panel assists the Council in delivering the following strategies that are outlined in the Capital City Strategic Plan 2019-29

Pillar 7.2 focuses on development that enhances Hobart's unique identity, human scale and built heritage.

Pillar 7.2.5 Embrace opportunities to ensure new developments and redevelopments contribute to and reflect Hobart histories, heritage and culture.

Pillar 7.2.6 Advocate for the inclusion of public spaces and public infrastructure in large private developments.

The Urban Design Advisory panel assist Council in the delivery of these goals as it provides a "sounding board" for urban design policy that the City may wish to consider.

6. Financial Implications

6.1. Funding Source and Impact on Current Year Operating Result

6.1.1. The cost of sitting fees has been allocated within the Development Appraisal function budget.

6.2. Impact on Future Years' Financial Result

6.2.1. The cost of sitting fees will be allocated within the Development Appraisal function budget for future years.

7. Legal, Risk and Legislative Considerations

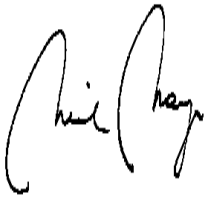
7.1. The UDAP is an advisory body only and does not make any statutory decisions. However, as an advisory panel it needs to have suitably qualified and experience members and the nominations received for the positions satisfy that requirement.

8. Delegation

8.1. The appointment of members of the Urban Design Advisory Panel for the position of chairperson with suitable urban design and public administration experience, the member with both planning and urban design expertise, and the member with an academic position in urban design is a matter for the Council to determine.

8.2. Council should also acknowledge the members nominated by each of the Tasmanian Chapters of the Australian Institute of Architects and the Australian Institute of Landscape Architects.

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: 11 November 2020
File Reference: F20/118199

Attachment A: Urban Design Advisory Panel - Nominations ⇩
Attachment B: Terms of Reference for Urban Design Advisory Panel - February 2020 ⇩

TERROIR

Hobart [redacted]
Nom Arch. Scott Balmforth CC1041T
Sydney
Melbourne
Copenhagen
www.terroir.com.au

Mr Neil Noye
Director of City Planning
Hobart City Council
GPO Box 503
Hobart TAS 7001
(sent by email; udappanel@hobartcity.com.au)

4 November 2020

RE: Confidential – Nomination to the Urban Design Advisory Panel

Dear Neil,

I wish to nominate for a position on the Hobart City Council's Urban Design Advisory Panel (UDAP). I have read and agree to the UDAP Terms of Reference. The following is provided in support of this nomination:

Introduction

I am the Hobart-based founding owner and Director of TERROIR, an architecture and urban design practice established in 1999 with offices in Hobart, Sydney and Copenhagen. TERROIR is known for our innovative, award-winning and internationally recognised strategic, master planning, public, commercial, community and residential projects.

I have a passion for building awareness of the unique qualities of Tasmania and specifically my home city of Hobart. I share the Council's objectives to heighten the quality and value of design in the urban realm, as demonstrated by the establishment of the UDAP in 2011.

I am firmly committed to our unique island capital city, and consistently champion in my work the values and influences of my upbringing in this place. My interest in the opportunity to hold a leadership role as a member of UDAP stems from a desire to give back to the community I am committed to both professionally and personally. I would bring a unique local-to-global outlook, recognised design expertise and draw on my national and international relationships and experience. As a born and bred Tasmanian, who lives in Hobart with my wife and five children, I am committed to the City's future.

Vacancies

I understand Council are seeking to fill three vacancies for a term of three (3) years, commencing on 23 November 2020. My experience and credentials enable me to nominate firstly for the role of member and Chairmanship, and if deemed unsuited for that role, I seek nomination for the other roles:

Member, and undertake the Chairmanship

This role requires experience in urban design and public administration. My credentials towards urban design are outlined elsewhere in this submission. In regards to public administration, the experience drawn from running a successful business that started in Hobart and now 21 years later is international is testament to my business and management acumen. Furthermore, my appointments to professional advocacy positions with public engagement is evidence of the standing I have in the public realm.

At 49 years of age, I am mid-career with already considerable experience gained. I present a capable and knowledgeable candidate for this very responsible position. I believe my appointment to this role would be well supported and respected by my peers.

Member, with both planning and urban design expertise

30+ years' experience, 21 years as a business leader, in the field of architecture and urban design. Throughout this time, I have gained planning experience in many State and International jurisdictions. My understanding of planning issues is also influenced by my wife's profession as a planner.

Member, who currently holds an academic position in urban design

Whilst not a full time academic, I have been an appointed Adjunct Professor at the University of Tasmania's School of Architecture since 2008. In that time, I have regularly participated in lectures, critic panels and other University activities related to urban design.

Furthermore, my architectural practice has – over 21 years - demonstrated a commitment to design practice and academia/research, such as;

- Fellow Founding Director Richard Blythe has gone on to now head up the School of Design at Virginia Tech in the USA, and;
- Fellow Founding and current co-Director Gerard Reinmuth has balanced the demands of practice with the role of Professor of Practice at the School of Architecture at University of Technology, Sydney.

Personal Attributes

As a leader in the design industry in Tasmania and business owner, I would bring a wealth of experience, knowledge and expertise to UDAP, including:

1. Experience with and appreciation of design-review panels;
2. An established presence in the field of design and an engaged local, national and international network;
3. A high level of professionalism;
4. Strong leadership and advocacy skills;

5. A passion for design advocacy, with a strong desire to build awareness of the value of good design;
6. Ability to gather feedback and provide innovative design insight.

Architecture, landscape architecture and urban design are my passion. In today's modern world – and of utmost importance in a post-COVID-19 future - design thinking can reveal the unique qualities of a place, its inhabitants or conditions. The place-based approach to projects I have led at TERROIR since 1999 is testament to this approach.

Academic and Professional Achievements

- Bachelor of Architecture, University of Tasmania (Hons 1st Class, 1996);
- Bachelor of Environmental Design, University of Tasmania (1992);
- Invited Masters by Practice degree from RMIT University [2007];
- Registered Architect in Tasmania and Victoria. Since 2008 I have been
- Adjunct Professor at the University of Tasmania's School of Architecture since 2008;
- Former Chapter Councillor of the Australian Institute of Architects on two occasions;
- Co-Creative Director of the Australian Institute of Architects' 2009 National Conference;
- Accomplished architectural and urban design author of TERROIR: Cosmop
- Accomplished architectural and urban design co-author of three books;
    - TERROIR; Cosmopolitan Ground (2007);
    - Third Spaces (2019);
    - Instruments (2019).
- Fortunate to present my work in public lectures in most Australian States and internationally, including the 2010 Other Islands Conference in the Canary Islands.

Practice Overview

I am an owner and Director of TERROIR Pty Ltd, established in Hobart and later Sydney in 1999 by Tasmanian-born and raised founding Directors. In 2009 the practice expanded internationally with the establishment of TERROIR ApS in Copenhagen (Denmark).

TERROIR projects have been featured in;

- A number of international exhibitions and publications including AV Monographs "20 international emerging architects" the Phaidon Atlas of 21st Century Architecture and the recent MMXX; Two Decades of Architecture In Australia;
- The Australian Pavilion at the Venice Biennale (2008 and 2010) and were featured in both the Danish and Australian pavilions for the 2012 Biennale;
- Exhibitions in Australia, Germany, the United States, Scandinavia, South Korea and China.

Awards

Recent and relevant state and international awards;

2020

- Australian Institute of Architects, Victorian Chapter Awards; William Wardel named award for Public Buildings and the Regional Prize for the Penguin Parade Visitor Centre.

2019

- The Chicago Athenaeum/The European Centre, International Design Award – Parks and Gardens for Penguin Parade Visitor Centre;
- The Chicago Athenaeum/The European Centre, International Design Award – Urban Planning for Koondrook Wharf;
- World Architecture Festival (Amsterdam), Winner Completed Buildings – House for Castle Cove House;
- World Architecture Festival (Amsterdam), Finalist Future Projects – Culture for Puffing Billy Railway Visitor Centre.

2018

- Australian Institute of Architects, Victorian Chapter Awards; Urban Design Award, Small Project Architecture Award and the Regional Prize for Koondrook Wharf;
- Australian Institute of Architects, Tasmanian Chapter Awards; Urban Design Award Commendation for University of Tasmania City Apartments (in association with FKA);

2017

- Australian Institute of Architects, Tasmanian Chapter Awards; Small Project Architecture Award Commendation for Princes Park Toilets;
- World Architecture Festival (Berlin), Finalist Future Projects – Culture for Penguin Parade Visitor Centre.

Local Government Experience

Leading many public buildings in Tasmania and Victoria over the last 21 years has provided insight to many Local Governments – wide-ranging experience that I will bring to UDAP for the Hobart City Council.

Local Governments I have engaged with;

- Hobart City Council
- Kingborough Council
- Huon Valley Council
- Glenorchy City Council
- Launceston City Council
- Burnie Council
- Glamorgan-Spring Bay Council
- Bass Coast Shire Council
- Hobsons Bay City
- City of Greater Geelong
- City of Greater Bendigo
- Surf Coast Shire
- Gannawarra Shire
- Campaspe Shire
- Mornington Peninsula Shire
- Murray River Shire
- Rural City of Wangaratta

Design Review Panel Experience

Hobart City Council's initiative to establish UDAP is unique in Tasmania, and I congratulate Council for valuing the input of independent design professionals providing advice promoting good design and a high quality urban environment.

Notwithstanding this current limitation on Tasmanian design panels, I will bring experience from direct engagement on multiple occasions with other design review panels;

- Sullivans Cove Waterfront Authority' Design Review Panel; multiple co-presentations;
    - Tasmanian Museum and Art Gallery Masterplan (2007/08, with JPW Architects);
    - Institute of Marine and Antarctic Studies (2009/10 with JWA Architects);
    - Elizabeth Street Pier Forecourt urban design (2007 with Oculus).
- City of Sydney's Design Advisory Panel; presentation of invited design competition submission for multi-residential projects in Zetland and Green Square, and;
- Office of the Victorian Government Architect's Victorian Design Review Panel; I have personally led the preparation and delivery of seven (7) formal presentations in the last 4 years, for significant projects;
    - Penguin Parade Visitor Centre ($58M, completed 2019);
    - Puffing Billy Railway Visitor Centre ($20M. under construction – completion early 2021);
    - Geelong Waterfront Safe Harbour Project ($40M. Ongoing).

Advocacy

I am a respected member of the local and international architecture community, having served on numerous select committees and panels. Relevant appointments include;

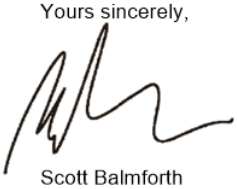
- 2020 nominated by the Tasmanian Chapter of the Australian Institute of Architects to represent the industry in a workshop for the Premiers Economic Social Recovery Advisory Council (PESRAC) in Burnie in late October.
- 2018/19 appointed by the National Council of the Australian Institute of Architects to a national panel of Architects to review major procurement practices, due to my extensive experience with procurement methods. This subcommittee produced Guidelines for EOI and RFT for architectural services, which identifies best practice methods in public sector and educational institutions that commission architectural services.
- 2015/16 appointed by the Tasmanian Chapter of the Australian Institute of Architects to assist Kingborough Council in their architectural selection process for the new Kingborough Hub on the site of the former Kingston High School. Kingborough Council adopted all recommendations and convened a 2-stage EOI/Design Competition process. The completed building received the Tasmanian Chapter's highest Architecture Award for Public Buildings in 2020, and has been shortlisted in the National Awards.
- 2011 founding Steering Committee member of the Forum for Urban Design Excellence (FUDE) Tasmania. Convened by the Hobart City Council's Executive Manager City Design, it's goal was to promote the establishment and recognition of urban design excellence at a professional level in Tasmania. FUDE was partly a forerunner to UDAP which was established in late 2011.

Referees

Available on request.

I have a passion for the advocacy and quality of Hobart's built environment, and the capacity to contribute towards the UDAP *Purpose* (as outlined in the UDAP Terms of Reference). I would be honoured to be considered for a position on the UDAP.

Yours sincerely,



Scott Balmforth
Director, TERROIR

From: Helen Norrie
To: UDAP Panel
Subject: UDAP expression of interest
Date: Tuesday, 3 November 2020 11:48:28 AM
Attachments: image001.png
CV norrie 2020.pdf

Dear Neil,

I would like to nominate for the Urban Design Advisory Panel academic position. I would also be interested in the role of Chair of this Panel.

Please see my CV attached. Please let me know if you need any other information.

Best wishes,

H

Dr Helen Norrie
Ph.D. B.Arch. (Hons) B.Env.Des
Masters of Architecture Course Coordinator
Leader RUSL | Regional Urban Studies Laboratory
Architecture & Design | Technology, Environments & Design
University of Tasmania
IC–213, Architecture & Design Building, Inveresk Campus
[redacted]
UNIVERSITY of TASMANIA | Architecture and Design
CRICOS 00586B

We acknowledge the palawa/pakana peoples of lutruwita, the traditional owners of the land upon which we work and live.

curriculum vitae

dr helen norrie

[redacted]

Dr Helen Norrie is a Senior Lecturer in the School of Architecture & Design at the University of Tasmania, and an architectural critic and commentator, contributing regularly to a range of national and international architecture and design journals. Helen is actively involved in the Tasmanian design community through projects that showcase the state's best design practices.

Helen established the Regional Urban Studies Laboratory (RUSL), a collaborative design research project that engages directly with local government authorities to explore urban issues for regional cities and towns. RUSL develops collaborative research between academics and students, bridging the teaching-research nexus through the investigation of core urban issues, which span across the disciplines of architecture, urban design, landscape architecture and planning.

In 2014 Helen was the Creative Director of the Australian Institute of Architects national conference, curating a programme of 20 leading international architects to examine the expanding role of the architect in differing social, political and economic environments. MAKING 2014 explored the way architects connect with communities, facilitate change, and challenge the status quo and offering an alternate vision. The conference was attended by 1100 delegates from across Australasia.

Since 2015 Helen has collaborated with Cave Urban Architects to develop collaborative design research into Bamboo Agritecture - exploring the intersection of architecture and agriculture - working with the Tasmanian Institute of Agriculture and bamboo specialists in Vietnam, Cambodia and Indonesia to develop the. This has included the design and construction of a series of prototypes for bamboo cattle shelters in remote and regional communities in the Vietnamese highlands.

Helen is one of the founding members of the Food Innovation Group at the University of Tasmania, working together with the UTAS Northern Transformation Project to integrate food systems into the built environment of the new campus at Inveresk.

academic qualifications

2014 PhD Urban Narratives: Museums and the City; University of Melbourne
1993 Bachelor of Architecture (Hons); University of Queensland
1988 Bachelor Design Studies; University of Queensland

professional qualifications

1998- Lecturer – School of Architecture & Design – University of Tasmania
coordinating design + research studios in Bachelor of Env. Design + Masters of Architecture
1998- Visiting academic
1998 various national and international universities in Australia and Scotland
2014 external examiner University of Queensland architectural design programme
1996- Architectural critic and commentator - national and international professional journals
1984/98 Architectural practice - Brisbane, London and Glasgow

competitions

2013 CAPITheticAL competition
shortlisted in international competition to celebrate centenary of Canberra
2011 Living Cities Design competition
speculative ideas for future urban environments
2006 Hobart Waterfront International Design Competition
speculative ideas for Sullivans Cove, Hobart

professional awards

2019 Planning Institute of Australia – Award for Cutting Edge Research and Teaching
for collaborative design research with City of Hobart
2009 Planning Institute of Australia – Urban Design Plans/Ideas Award
for Designing a Better City Framework
Launceston City Council with UTAS School of Architecture & Design
1996 RAIA Award for Riversleigh Fossil Museum and Visitors Centre
Davis and Josephson – Brisbane (part of project ream)
1994 RAIA Award for Customs House Refurbishment, Brisbane
Robert Riddell Architects – Brisbane (part of project ream)
1992 RIBA Award for Graduate Business School, Glasgow Reiach + Hall – Glasgow (project team)
1990 UK National Competition for Bennachie Visitors Centre, Scotland
special commendation (with Iain Campbell)

creative research

2004- Exhibition curator + creative works
- 2012 sea stories – curation
  installation of collaboration between four artists/designers
- 2009 un_packing architecture: beyond style and fashion - Tasmanian Architecture
  Tasmanian Museum and Art Gallery, Hobart, as part of Design Island
- 2008 Spatial Origami installation with Laboratory for Visionary Architecture (LAVA)
  as part of Design Island
- 2004/8 various exhibitions of student urban design projects
- 2015-9 bamboo AGRITECTURE – various built project in Tasmania, Vietnam + Indonesia

2014 Creative Director 2014 National Architecture Conference
with Adam Haddow and Sam Crawford

2015- Bamboo Agritecture – collaborative design research with Cave Urban Architects, Tasmanian Institute of Agriculture, National Institute of Animal Science, Vietnam

collaborative urban research

2004- collaborative urban design projects at the UTAS School of Architecture & Design developing speculative propositions for sites in Launceston and Hobart
projects use Gehl Architects research methods and ideas for urban spaces

2008- Regional Urban Studies Laboratory (RUSL) - collaborative research projects working with local and state government
- 2010 Launceston City Council: Urban Fabric Analysis
- 2010/11 projects with the Office of the State Architect and
- 2011 projects with Hobart City Council and Glenorchy Art and Sculpture Park (GCC)
- 2013/4 projects with Meander Valley Council, Launceston City Council, Glamorgan Spring Bay Council + Monash University Art Architecture + Design
- 2010 working with Gehl Architects and Launceston and Hobart City Councils on *Public Space Public Life* - leading to the Hobart Inner City Action Plan by HCC

collaborative urban research projects

Working with the City of Hobart, Dr Norrie developed the The City of Hobart and University of Tasmania Architecture & Design Internship was established in 2012. This program provided a unique model of engagement between the Council and the University that facilitates collaborative design research into a range of urban and cultural issues that are directly related to the physical environment of the city..

The City of Hobart Architecture & Design collaborative offers diverse multi-disciplinary Work Integrated Learning (WIL) experiences for students, and develops collaborative research through:

- **Collaborative Research Studios** as part of coursework for the Advanced Design Research (ADR) studio of the final year Master of Architecture (MArch) programme
- **Internship Programme** where students work directly with UTAS academics + City of Hobart staff on collaborative research that relates directly to current and future Council issues
- **Collaborative research** exploring planning, urban design, cultural + economic development

Since 2012, this collaborative research project has involved:

- 15 staff from 5 departments have collaborated in the development of research:
  - City Infrastructure; Arts and Culture; Community Development; Open Spaces; Architectural Projects + Urban Design.
- 108 UTAS undergraduate and postgraduate students/graduates
  - 66 M.Arch students involved in 11 coursework projects
  - 42 M.Arch or B.Env.Des students/ graduates in 21 internship projects
    - 6 projects extended M.Arch design research
    - 15 projects developed through internship

The collaborative research has produced a design reports for each project, and has informed ongoing projects, particularly: Arts and Culture (Children in the City, Creative Spaces), Architectural Projects (City Hall +100) and City Infrastructure (Pedestrian Environments: Evolve- Fluxus, 430 @ Melville). A range of academic outputs have also been produced, which present projects ideas and critically reflection on the process of collaborative design research.

- 18 design research reports as part of Internship Projects
- 3 book chapters/sections
- 2 x refereed journal article
- 8 x refereed conference papers

collaborative urban research projects detail

2012/9 Collaborative urban design research projects

* Projects as part of City of Hobart and University of Tasmania Summer Urban Research Intern Program

2012/3 4 coursework projects (25 students) 2 internships projects (4 interns)

City as Culture — **Arts and Culture**
Speculating of different methods of integrating culture into the experience of the city to at which reinvigorate Hobart's CBD.

Social Hubs — **Community**
An investigation of four local areas within the Hobart city centre as potential social hubs for the interaction of communities.

***City as Campus** — **City Design**
Investigating possibilities for the integration of the university in the city as the UTAS campus grows.

***Beaumaris Zoo** — **Open Spaces**
Examining past, present and future uses for the Beaumaris Zoo on the Queens Domain.

2013/4 3 coursework projects (21 students) 3 internships projects (6 interns)

***Navigate | ICAP+** — **City Design**
Expanding urban legibility and developing ideas outlined in the Inner-City Action Plan (ICAP).

***Dorney House** — **Open Spaces**
Consolidating research into the future use of the Dorney House at Porter's Hill.

***Children in the City** — **Arts & Culture**
Investigating ideas to foster the engagement of children and teenagers in the city.

2014/5 2 coursework projects (9 students) 3 internships projects (6 interns)

Social Hubs| Greater Hobart — **Arts + Culture**
Expanding ideas of Social Hubs from 2012 developing an understanding of social hubs across Greater Hobart, by drawing together comparative information on neighbouring municipalities.

City as Campus — **City Design**
Extending the 2012 project, examining the potential impact of new UTAS developments on the CBD, particularly ACIPA and Melville Street Housing.

***Creative Spaces** — **Arts and Culture**
Auditing + cataloguing current and potential spaces for cultural and creative activities in the city.

***Queens Domain Playscape** — **Open Spaces**
Developing design ideas for a playscape on the summit of Queens Domain

***Pedestrian Corridors** — **Strategy and Governance**
Assessing the current condition of walkability in the inner city, developing ideas for improvement.

2015/6 1 coursework projects (5 students) 2 internships projects (6 interns)

City vs Nature — **UTAS scoping project**
Exploring the relationship between the natural landscape and the settlement patterns, providing a broader understanding of interrelated issues between Hobart and surrounding municipalities.

***City Hall** — **Design Services**
Exploring future uses of City Hall, speculative ideas + an audit of cultural venues in the inner city.

***Evolve – Fluxus City** — **City Infrastructure**
Mapping urban spaces and speculating on the impact of new projects on pedestrian experience, including the 2016 Pedestrian Count - revisit 2010 Gehl Architects Public Space, Public Life Study.

2016/7 1 coursework projects (6 students) 4 internships projects (7 interns)

UMAS — **UTAS scoping project**
Scoping project to understand the potential of a University Museum of Art and Science for UTAS, and consider how UMAS could act as a civic catalyst.

*** 430 @ Melville** — **City Infrastructure**
Drawing on the Pedestrian Corridors (2014/5) + Fluxus City (2015/6) Intern projects to consider the impacts of this development on surrounding urban spaces and the culture of the city.

*** Creative Spaces II** — **Arts & Culture**
Extending the 2014/5 Creative Spaces project, to audit facilities currently available for a range of community and cultural events spaces available for cultural and social events across the city.

*** Community Engagement** — **Arts & Culture**
Understanding different modes of community engagement, drawing on existing practices at City of Hobart, UTAS and international best practice, to develop a tool kit for community engagement.

* **Northern Transit Corridor** — **City Infrastructure**
Exploration of the Glenorchy to Hobart transit corridor as an urban space, considering the connection to the broader context through visualizations of speculative ideas for sites.

2017/8 **4 internships projects (7 interns)**

*** Street furniture manual** **City Infrastructure**
Developing a street furniture manual that includes an inventory of current street furniture, identifying maintenance issues, and also developing ideas for future.

*** City as CampusCity Infrastructure**
Investigating the impact of the relocation of the campus from Sandy Bay to city, continuing several previous projects on city/campus engagement.

*** Expanding City** **City Infrastructure**
Exploring how the city centre might expand over the next 50 years, examining potential growth within the existing city limits and exploring the implications for movement and connectivity.

*** Housing Hobart City Infrastructure**
Investigating the opportunities for new housing models in Hobart, examining design and planning frameworks that have enabled and/or limited opportunities

2018/9 **4 internships projects (7 interns)**

*** Underutilised sites | Before + After** **City Infrastructure**
Extending the "Expanding City" project from 2017/8 and documenting and analyzing the changing city, speculating on future patterns of development and growth

*** Digital Content Curation** **Arts + Culture**
UTAS Architecture & Design and Media explore models for the curation, commissioning and licensing of digital content for the new UTAS/City of Hobart screen in Elizabeth Street

collaborative urban research outputs

This research has resulted in the following publications.

3 x Book chapters

- Norrie, Helen. 2015. "Regional Urban Studies Laboratory: Engaging in Collaborative Research with Policy Makers." In J. Moloney, J. Smitheram, & S. Twose (Eds.), *Perspectives on Architectural Design Research* (pp. 54-56). Baunach, Germany: AADR Art, Architecture and Design Research.
- Fraser, M., Allan, P., Menz, P., Norrie, H., Oliveira, F., & Psarra, S. 2015. "What Matters: Everyday Life and the Collective Round Table." In J. Moloney, J. Smitheram, & S. Twose (Eds.), *Perspectives on Architectural Research: What Matters, Who Cares, How* (pp. 60-65). Baunach, Germany: AADR Art, Architecture and Design Research.
- Norrie, Helen. 2018. "Transformative participation: examining spatial agency + building social capacity through design research." In *Transforming Pedagogies and the Environment: Creative agency through Contemporary Art* ed. Professor Marie Sierra + Professor Kit Wise. Champaign, Illinois: Common Ground Research Networks, 115-37.

2 x Refereed journal article

- Norrie, H. & Abell, J. 2016. "Collaborative Design Research: linking universities with government policy-makers." In *Make, Mistake, Journey: Practice-led Research and Ways of Learning Networking Knowledge Journal of the MeCCSA postgraduate network*, 9(3).7
- Norrie, Helen, and Eliza Holcombe- James. 2016."Civic Innovation: Regional Universities as Transformative Partners." In *Project to Practice: Innovating Architecture AASA 9th International Conference* 65-59. Sydney: Association of Architecture Schools of Australasia.

8 x Refereed conference papers

- O'Byrne, K., & Norrie, H. 2013. "The City as an Urban Playground." Paper presented at the 6th Annual International Urban Design Conference, Sydney.
- Marelja, M., & Norrie, H. 2013. *Teenagers and the City.* Paper presented at the 6th Annual International Urban Design Conference, Sydney.
- Owen, C., & Norrie, H. 2013. *Advanced Design Research: exploring the teaching research nexus.* Paper presented at the 7th Annual Conference of the Association of Architecture Schools of Australia, Melbourne.
- Norrie, H., Englund, R., Stoklosa, T., & Wells, D. 2014. "Survival and Revival of Rural and Regional Towns." Paper presented at the Australian Regional Development Conference, Albury
- Seadon, J., & Norrie, H. (2014). "Round House / Glass House: J Esmond Dorney at Porter Hill, Hobart." Paper presented at the Translation" Proceedings of the Society of Architectural Historians of Australia and New Zealand, Auckland.
- Norrie, H. 2014. "Regional Urban Studies Laboratory (RUSL): engaging universities in collaborative design research with government policy-makers." Paper presented at *Architectural Design Research Symposium* in Venice. Wellington: Victoria University.
- Norrie, Helen, & Eliza Holcombe- James. 2016. "Civic Innovation: regional universities as transformative partners." Paper presented at Project to Practice: Innovating Architecture AASA 9th International Conference Sydney
- Julif, Toby, Megan.J. Keating, Helen Norrie, Zoe Veness, and Svenja J. Kratz. 2017 "Praxis Now: Frayling's 'Research in Art and Design 24 Years On." Paper presented at *ACUADS* 1-14. Canberra, ACT.

selected publications urban research

Clark, Geoff, and Helen Norrie. 2009. "Affording Sustainable Housing." Paper read at 5th International Conference of the Association of Architecture Schools of Australasia 2009: Sustainable Theory/Theorizing Sustainability, at Wellington.

Marelja, Mia, and Helen Norrie. 2013. Teenagers and the City. In *6th Annual International Urban Design Conference*. Sydney.

Norrie, Helen. 2002. "Museums, Object, Context: Buildings and Projects by Sverre Fehn." Paper read at Additions to Architectural History: XIXth Annual Conference of the Society of Architectural Historians of Australia and New Zealand, at Brisbane.

Norrie, Helen, and Geoff Clark. 2008. "Theory and Practice." *Architectural Review Australia* no. 106:46.

Norrie, Helen. 2009. "Sustainable Cities: Planning, Development and Design". Paper read at 5th International Conference of the Association of Architecture Schools of Australasia 2009: Sustainable Theory/Theorizing Sustainability, at Wellington.

Norrie, Helen. 2013. *Urban Narratives: Museums and the City*, Faculty of Architecture, Building and Planning, University of Melbourne, Melbourne.

Norrie, Helen. 2014 (publication pending). "Regional Urban Studies Laboratory (RUSL): engaging universities in collaborative design research with government policy-makers." In *Architectural Design Research Symposium*. Wellington: Victoria University.

Norrie, Helen, Rachel Englund, Timothy Stoklosa, and Dominic Wells. 2014. Survival and Revival of Rural and Regional Towns. In *Australian Regional Development Conference*. Albury

Norrie, Helen. 2015. "Beyond the Big City Limits." *Architectural Review Asia Pacific* 141: 94.5

Norrie, H. 2015. "Regional Urban Studies Laboratory: Engaging in Collaborative Research with Policy Makers." In J. Moloney, J. Smitheram, & S. Twose (Eds.), *Perspectives on Architectural Design Research* (pp. 54-56). Baunach, Germany: AADR Art, Architecture and Design Research.

Norrie, Helen and Eliza Holcombe-James. 2017. Civic Innovation: Regional Universities as Transformative Partners. Paper presented at the Project to Practice: Innovating Architecture AASA 9th Annual Conference, Sydney.

Norrie, Helen. 2017. "A Regional Overview." Architecture Victoria Autumn: 6-7.

Norrie, H. 2018. "Transformative participation: examining spatial agency + building social capacity through design research." In *Transforming Pedagogies and the Environment: Creative agency through Contemporary Art* ed. Professor Marie Sierra + Professor Kit Wise. Champaign, Illinois: Common Ground Research Networks, 115-37.

O'Byrne, Katherine, and Helen Norrie. 2013. "The City as an Urban Playground. In *6th Annual International Urban Design Conference*. Sydney.

Owen, Ceridwen, and Helen Norrie. 2013. Advanced Design Research: exploring the teaching research nexus. In *7th Annual Conference of the Association of Architecture Schools of Australia*. Melbourne.

Seadon, Joel, and Helen Norrie. 2014. Round House / Glass House: J Esmond Dorney at Porter Hill, Hobart. In *Translation" Proceedings of the Society of Architectural Historians of Australia and New Zealand*, edited by Christoph Schnoor. Auckland: SAHANZ Unitec Auckland.

Norrie, Helen. 2015. "Vibrant urban environments: some thoughts", The Material City: Density and Design in Contemporary Australian Architecture, Dry Press Publishing, R Ringer (ed), Horsley Park, Australia, pp. 474-475.

Norrie, Helen. 2017. "A Regional Overview", *Architects Victoria*, Autumn 00.6-7.

Norrie, Helen. 2019. "Reframing the Regional Conversation." *Architecture Australia*, January-February, pp 41-51.

publications urban research + history

Norrie, Helen. 2002. Museums, Object, Context: Buildings and Projects by Sverre Fehn. Paper read at Additions to Architectural History: XIXth Annual Conference of the Society of Architectural Historians of Australia and New Zealand, at Brisbane.

Norrie, Helen. 2009. "Sustainable Cities: Planning, Development and Design." Paper read at 5th International Conference of the Association of Architecture Schools of Australasia 2009: Sustainable Theory/Theorizing Sustainability, at Wellington.

Clark, Geoff, and Helen Norrie. 2009. "Affording Sustainable Housing." Paper read at 5th International Conference of the Association of Architecture Schools of Australasia 2009: Sustainable Theory/Theorizing Sustainability, at Wellington.

Power, Jacqueline and Helen Norrie. 2017. "Australian triumphal arches and settle colonial cultural narrative", *Fabrications,* 27 (1) pp.71-99.

Norrie, Helen. 2018. "Implications for practice 'Research/Industry Connections", Overview Report: Cultural Value in the Regions Symposium, 30-31 October, Queen Victoria Museum and Art Gallery, Inveresk, pp. 128.

publications design research + pedagogy

Norrie, Helen. 2002. Integrated Teaching Curriculum for Design Studio, Building Technology, History and Theory. In *ANZAScA: The Modern Practice of Architectural Science: From Pedagogy to Andragogy*. Geelong.

Norrie, Helen. 2014. "Regional Urban Studies Laboratory (RUSL): Engaging Universities in Collaborative Design Research with Government Policy Makers." In *Architectural Design Research Symposium, 2014*, edited by Jan Smitheram, Jules Moloney and Simon Twose, 116-19. Venice: Victoria University Wellington.

Norrie, Helen. 2003. Bridging the Needs of International Direct Entry Students. Paper read at Teaching Matters, at University of Tasmania, Hobart.

Norrie, Helen, and Kerry van den Berg. 2003. International Direct Entry: Architecture Bridging Programme. Paper read at Internationalising the Curriculum Symposium, at University of Tasmania, Hobart.

Norrie, Helen, and Geoff Clark. 2008. "Theory and Practice." *Architectural Review Australia* no. 106:46.

Owen, Ceridwen, and Helen Norrie. 2013. Advanced Design Research: exploring the teaching research nexus. In *7th Annual Conference of the Association of Architecture Schools of Australia*. Melbourne.

Norrie, Helen and Abell. 2016 "Collaborative design research: linking universities with government policymakers", Networking Knowledge, 9 (3) pp. 117.

bamboo agritecture

Norrie, Helen, and Harriet Elliott and Philipa Grainger, Nici Long, Jed Long and Tracey Woods. 2017. "Dynamics of bamboo design and build collaborations", Journal of Public Space, 2 (3) pp. 93102.

Norrie, Helen, Jed Long and Emma Hall. 2018. "Agritecture: engaging with the environmental and ecological economy of bamboo in Vietnam", 11th World Bamboo Congress Proceedings, 14-18 August, Xalapa, Veracruz, Mexico, pp. 112.

exhibitions + catalogues + creative works

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Mr Neil Noye
Director City Planning
City of Hobart

3 September 2020

[redacted]

Dear Mr Neil Noye

Re Expression of Interest in the Role of Chairman
Urban Design Advisory Panel

I have read the Invitation for Nominations to fill the role of a member and to undertake the Chairmanship of the Urban Design Advisory Panel.

Please accept, my personal request for consideration to be appointed to this position.

As you know I was a foundation member of UDAP and attended every meetings of the board until my retirement for employment with the City of Hobart.

I have attached a copy of my Curriculum Vitae for your reference.

The role of UDAP is of particular value at this time as there are significant demands from the development industry applying for permission to construct important infrastructure, commercial offices, apartments and hospitality projects in the City Centre.

UDAP provides an important forum, where developer teams are offered opportunities to discuss their projects with a qualified and experienced panel.

Thank you for this opportunity

Your faithfully

George Wilkie

[redacted]

Curriculum Vitae

George Cooke Wilkie
[redacted]

Current

Author and Design Consultant

Recent until 5 May 2019

Executive Manager City Design
Hobart City Council

Responsible for the Urban Design, Architectural Design and the Management and Superintendence of Projects outlined in the Inner City Action Plan and the addenda projects added thereto.

When appointed to this role in 2010 it was my responsibility to work with the Directors of Infrastructure, Planning and Economic Development to prepare the Inner City Action Plan, the first stage of the Inner City Development Plan and in response to the report by Gehl Architects, Hobart;
A City with People in Mind, November 2010.

Member – City of Hobart, Urban Design Advisory Panel

Chair – City Action Planning Team

Convenor – Forum for Urban Design Excellence – Tasmania
A representative forum for the advancement of urban design in Tasmania.
Members include the University of Tasmania, the Tasmanian State Architect, Australian Institute of Architects, the Australian Institute of Landscape Architects, the Planning Institute of Australia, Consult Australia, the Building Designers Association, Tasmania and the Hobart City Council.

Assessor – Building design awards 2011, Building Designers Association, Tas.

November 2007 to November 2010

Manager Architectural Projects
Hobart City Council

Responsible for the provision of architectural and landscape architectural professional services to the Council. Projects included completion of the Long Beach Seawall and Public Recreational Park project, project management and contract administration of the Council Office Annex upgrade, designer and project manager for the additions to the Domain Tennis Centre, design architects for the Huon Road Bushland Administration offices, the Franklin Square public toilets upgrade and many smaller projects.
Asset Maintenance Manager for all buildings owned and operated by the Council.

Certificate of Achievement– High Performance Leadership Training Course
Hobart City Council & Griffith

Until November 2007

Senior Partner
Wilkie Interiors Architects Planners
Leura 2780 NSW

Projects include:
Chapel, Offices & Mausoleum complex at Liverpool General Cemetery, 2007
A modern chapel able to accommodate over 100 mourners. It is fitted with a sophisticated audio-visual system that can play and record a wide range of visual material plus provide a voice and music audio system.
The chapel is acoustically designed and air-conditioned to allow quality use of a 600 pipe organ.
A modern air-conditioned reception room with a food and beverage kitchen is provided for after service gatherings.
The management of cemetery trust has modern public reception facilities, workstation equipped offices and staff facilities.
Under the chapel, reception and office facilities there is a mausoleum containing 23 family vaults (ranging in capacity from 9 to 20 caskets). The vaults are accessed by two basilica style naves finished in polished stone and incorporate a sanctuary.

Other architectural projects:
Chapel, Offices and Crematorium complex for Richmond (NSW) Cemetery
Site Design, Chapel, Offices and Crematorium for Leura Lawn Cemetery
Chapel and Crematorium for the Moss Vale General Cemetery
Commercial/Industrial Master Plan & Building Design, Egan Industrial Estate
Commercial/Industrial Design for Shaw Developments
Retail/Warehouse Complex Design for St Vincent de Paul Society, Katoomba
Multiple Residential Design, Documentation and Superintendence Projects
Interior Design and Office Fit-out Project for Roche Diagnostics
Design of major project for Kennards Self Storage at Penrith
Design of Office Additions for Total Construction Pty Ltd
Design & Documentation, major office fit-out for FMK Norwest Park, Sydney.
Design & Documentation, significant additions to Heritage residence Leura

The majority of the projects require detailed analysis of the NSW Environmental Planning and Assessment Act, the NSW Heritage Act, LGA Local Environment Plans, LGA Development Control Plans, Bushfire Legislation, Codes and Conditions.

In residential projects, all designs were assessed under the NSW BASIX environmental system, specifically emphasis on energy and water efficiency and environmental impacts. All projects in NSW require Statements of Environmental Effects or Environmental Impact Statements; these are produced in house at the practice.

The BMCC is surrounded by the Blue Mountains World Heritage National Park and many precincts and buildings in the upper mountain villages – Wentworth Falls, Leura, Katoomba, Blackheath and Mt. Victoria have a significant number of heritage listed items, streetscape and landscape protections.

In 2000 we received a heritage citation from the City of Lithgow for Innovative Heritage Building Design, for adaptive reuse of stables at Meads Farm (previously the Kerosene Inn c 1860), Little Hartley.

Academic Career

Program Director
Faculty of Design Architecture and Building
University of Technology NSW

Experience includes:
Director of Interior Design Degree Program
This position required:
Administration of the four-year fulltime Interior Design Program
Membership of the Faculty Management Committee
Membership of the Faculty Board
Membership of the Faculty Board of Examiners
Member of (and sometime chair of) the Interior Design, Heads of Program Association
Chair of Interior Design Program meetings
Chair of the Course Review Panel
Management of the Program Staff, including the Program Assistant, six fulltime academic staff members, up to twenty part-time lecturers and two resource (library) staff.
Management of the Interior Design Program Budget
Directing the Interior Design Course
Preparing regular course reviews
Development of research programs
Overseeing the quality of the teaching and learning activities of the program to meet the requirements of the over 200 students studying at any one time
Reviewing course content, delivery and assessment
Ensuring all students were provided with the correct information to understand and decide their progress through the course
Counsel students requiring assistance for any reason
Maintaining an outreach program to maintain sound relationship with the professional and industry bodies associated with interior design
Membership of the NSW Heritage Network.
Membership of the Design Institute of Australia

Ensured that all information was correct when provided to prospective applicants through published documents, Internet sites and secondary school course advisors
Assessed the quality and quantity of applicants to ensure suitable entry standards
Ensured that disadvantaged applicants were provided with opportunity to gain entry to the program

The Interior Design Program has offered students sound major study in the requirements of the interior design profession and a wide range of minor study options. Minor studies included; production design (in association with the Australian Film, Television and Radio School), Production Design for Theatre, Furniture Design, Photograph and associated studies.
A number of international exchange programs were developed during my directorship, particularly with Germany and the United Kingdom.

Senior Lecturer - Interior Design
During the time spent at UTS (and the Sydney College of the Arts- prior to amalgamation with UTS), I prepared courses, ran studios and assessed students in all years of the design component of the interior degree course.
During my directorship the students achieved high design standards, employment rates on graduation were high and many graduates have become partners and directors of major interior design practices.
Students from my studios have won many student and other design competitions, the most significant of these was a commendation in the Darwin Parliament House Competition.

Senior Lecturer - Interior Technologies
Building and services technologies are an important component of a modern Interior Design course. I developed and taught courses in the construction and fit-out technologies required to document commercial office designs, hospitality including accommodation and food services designs, retail and shopping precincts designs, residential dwelling and apartment designs…

Senior Lecturer - Conservation & Heritage Interior Design
Many interior design commissions require the adaptive reuse of heritage-listed buildings. I actively developed and conducted courses in the conservation and intervention processes required to ensure quality outcomes in this field.

Visiting Lecturer - Conservation & Heritage –
Masters Program, Property Management
This course required communicating to students, who are predominately employed in the property development industries, the attitudes and methodologies required to sympathetically work with heritage listed properties, to achieve commercial viability while maintaining the community's requirements to retain the heritage values of the subject properties.
Students are provided with lectures, studies and activities that develop their skills in; understanding heritage controls, preparing heritage assessments and preparing the necessary applications to the control authorities.

Lecturer - Land Economics
University of Western Sydney
The Hawkesbury Agricultural College (University of Western Sydney) had a long history in educating students to work in the real property valuation profession. The Land Economy course, of which I was a foundation member, extended the role of the property valuer to a pro-active member of the property development industry. The course provided studies that combined the knowledge of valuation with a wider knowledge of development planning, this moved the role of the profession from placing a value on an existing property, to working with client bodies to determine with a degree of economic accuracy the commercial value of proposed developments.

Architectural and Construction Management Career, NSW

Managing Director, Interior Design
Cann Architects

Responsibilities:
To manage the Interior Design departments of Cann Architects, in the Sydney, Perth, Brisbane, Gold Coast and Cairns Offices.

Cann Architects was a large architectural practice that was established in Perth and had expanded to maintain practices in Sydney, Brisbane, the Gold Coast and Cairns.
My role was to establish a parallel multi-state interior design practice.

My time with Cann was a sabbatical experience for one year. It was a highly rewarding experience and allowed me to work on large projects throughout Australia.

Manager, Design and Construction
Australian Safeway Stores

Responsibilities:
To negotiate with real estate companies and building developers, to prepare the design briefs, employ and supervise architectural, engineering and other consultants, to administer the building and fit-out contracts, for all of the Companies supermarkets and warehouses in Sydney.

Australian Safeway Stores Ltd was the Australian arm of the second largest food retailer and manufacturer in the USA.
It had an established presence in Melbourne and aimed to move into the Sydney Market.
I was charged with designing and building the Sydney supermarkets and supporting warehouses.
Safeway was at the cutting edge of supermarket design and was responsible for many of the design features still taken as representing supermarket shopping in Australia. The stores were the most energy efficient of all the major operators.

Early Career in Architecture, Victoria

Architectural Designer – Residential apartments
D J Ryan Developments Pty Ltd

Partner Architect – Residential and Industrial Design and Documentation
John P Hammond Jr. Pty Ltd

Design Architect – Commercial Offices, Industrial Complexes and Warehouses
Paynter and Dixon Pty Ltd

Architectural Designer – Residential dwellings, townhouses and apartments
McLean Brothers, Builders

Architectural Assistant – Design and documentation of Mt Tom Price, WA.
Peter Goodman and Associates

Architectural Assistant – John Baird Architect
Residential design and documentation

Publications

George Wilkie, Building Your Own Home, New Holland (1984 to Present Ed 2011)

George Wilkie, Alterations and Additions to Your Home, Lansdowne (1998)

George Wilkie, Practical Garden Planning, Child & Associates (1990)

George Wilkie, Do it yourself, Weldon (1991)

Education & Qualifications

Architectural Fellowship Diploma
Royal Melbourne Institute of Technology
Studied at RMIT for five years fulltime and three atelier years
Completed the NSW Board of Architects registration examination in 1973.

Registered Architect NSW – Registration No. 3667 – 17June 1975

Registered Architect, Tasmanian Board of Architects –

Accredited Building Practitioner, Tasmania, Architect, No. CC4907 L

Associate of the Royal Australian Institute of Architects –
26 September 1977 - Registered Number 10377

Graduate Diploma in Town and Country Planning, University of Sydney
6 April 1981

Graduate Diploma in Education, Sydney Teachers College, University of Sydney
1 May 1981

Associate (Design Education) of the Design Institute of Australia
Serial Number 299 – 22 August 1985

Courses in AS 4000 Contract by Standards Australia

Courses in BASIX NSW Department of Planning and Infrastructure

Numerous Continuing Education Units for the NSW Board of Architects registration requirements

Other experiences

International Union of Architects,
Conference of Architecture and People,
Oxford, United Kingdom

Special Consultation Conference,
City of St Petersburg,
Russian Federation

Regular commentator on radio stations 2GB (with Mickie DeStoop) and ABC 702 (with Sally Loane), speaking and responding to questions on architecture, interior design and heritage.

Weekly contributor, for 5 years, to the property section of the Sydney Morning Herald, writing articles on residential architecture and home construction.

7 September 2020

The General Manager
Hobart City Council
GPO Box
HOBART 7001 Tasmania

Dear Sir

Vacancies - Urban Design Advisory Panel (the Panel), City of Hobart

I refer to your advertisement in *The Mercury*, dated 22 August 2020, for nominees to fill vacancies on the abovenamed Panel. I wish to be nominated for the General Vacancy, "(O)ne nominee to fill the role of member, with both planning and urban design expertise."

I note the Terms of Reference for the Panel (HCC, 16/123, Feb 2018), which state that the Panel should provide

- Independent urban design advice promoting good design and a high quality urban environment.
- Advice to applicants on significant development in the central city prior to the lodgement of an application for a planning permit.
- Advice to the Council on formal planning applications for significant developments, limited to compliance with relevant urban design provisions of the Council's planning schemes.
- Urban design advice to the Council as it sees necessary on appropriate urban design controls and on both City of Hobart and privately initiated relevant planning scheme changes and
- Urban design advice to the Council on significant City of Hobart capital works projects.

Firstly, may I commend the Panel on its work since its inception in 2011, a period which has seen rapid development on an unprecedented scale over the previous twenty years. Development applications to the City of Hobart have ranged from small scale inner urban infills to large inner-city proposals significantly outside the parameters of the Tasmanian Planning System.

While I note the Panel's considerations are limited to the relevant urban design provisions of the planning scheme applicable for a site, it is also noted that the Panel needs to draw on broad urban design principles in order to provide advice to the City Planning Committee. In my view, this system works and there is manifest evidence of this over the last few years. Advice from the Panel has allowed proponents to modify their proposals as appropriate prior to formally lodging applications. Notable examples are the Palace Hotel, 28 Elizabeth Street, Fragrance Hotel, 2-6 Collins Street, and the redevelopment of Civic Square.

I recognise and understand that there is an important role for grass roots community involvement in the development of the City of Hobart and I note that, as there has been an escalation in the number and complexity of development applications, there has also been an incremental growth in vested interest groups. I wish to make it clear that I am a planning professional who is completely independent of any community-based groups that might have an interest in proposals that may come before the Panel for its consideration. This enables me to offer the City of Hobart the highest level of integrity when considering matters of public interest.

With over 20 years' experience in both the Tasmanian public sector and as a consultant, as detailed on my *Curriculum Vitae*, I also offer detailed knowledge of the Tasmanian Planning System and the broader policy environment, which are informed by best practice principles of urban design and land use and transport planning.

I believe that I would make a credible and rigorous contribution to the Panel's work, and I look forward to an opportunity to discuss this General Vacancy with you or your nominee further.

Yours faithfully

Fiona Abercrombie-Howroyd
Abercrombie-Howrovd and Associates
[redacted]

Encl

Curriculum Vitae

Name Fiona Abercrombie-Howroyd
Director, Abercrombie-Howroyd and Associates

Address [redacted]

Phone
e-mail

Qualifications Master of Public Administration, UTas (2002).
Diploma, Australian Institute of Company Directors, (2003)

Education The Friends' School, Hobart
Rosny College.

Current enrolment (deferred) Graduate Diploma, Environmental Planning, UTas

Summary of experience

- Academic role in post graduate urban planning program at University of Tasmania
- Principal author of studies, reports, papers, business cases and policy for local, State and Commonwealth governments
- 20 years' experience in land use planning, transport, infrastructure, energy efficiency, world heritage and natural resource management
- Management roles in the Departments of Infrastructure Energy and Resources, Treasury and Finance, and Premier and Cabinet, Tasmanian Government
- Highest level project management experience at intergovernmental levels
- Presentations and speaker at seminars, conferences and workshops for the Tasmanian government at State, national and international levels
- Consultant to peak bodies and governments on policy and technology standards for Intelligent Transport Systems (ITS)
- Co-convenor (with Planning Institute of Australia/UTas) of the biennial Abercrombie Lecture, Tasmania, 2006 – current.

Referees

[redacted]

Artwork: *'Late night chat is filled with dreams'*. Yayoi Kusama (2009), Whitney Museum of American Art ©

Career History

August 2019- current
Casual Lecturer, School of Geography and Spatial Sciences, University of Tasmania.

August 2017-January 2018
As Director, Abercrombie-Howroyd and Associates

- Developed a comparative analysis of Hobart against Australian capital cities and international cities against geopolitical and spatial indicators to enable detailed discussion with officers and elected officials from the City of Hobart.
- Reviewed outcomes of public consultation on Modules 1-4 of the City of Hobart Transport Strategy
- Developed Table of Contents for a draft Transport Strategy for the City of Hobart.

April -September 2016
Director, Abercrombie-Howroyd and Associates contracted by Hobart City Council to develop framework for City of Hobart's Transport Strategy 2018-2030 and draft Module 1, Freight, Port and Air, as template for public consultation. This template was used for all further consultation documentation.

August to November 2015
As student in Graduate Diploma, Environmental Planning, UTAS, completed a professional placement at the Hobart City Council. Project: scoping and a draft Table of Contents for a Transport Plan for the City of Hobart.

Oct 2010 – June 2014
Manager, Major Initiatives, Office of Energy Planning and Conservation, DIER.

- Managed policy and projects in renewable energy, alternative fuels (transport), climate change, energy efficiency.
- Principle author, *Tasmanian Oil Price Vulnerability Study 2012* for the Tasmanian Government (ISBN 978-0-646-91434-3).
- Established and managed King and Flinders Islands Renewable Energy Fund, $1m over 4 yrs. http://www.tasenergyheating.com/-solar-hot-water.html
  http://www.visitflindersisland.com.au/flinders-island-clean-green-airport-shuttle/

July 2007 – May 2010
Assistant Director, Forest Policy, DIER.

- Authored Tasmanian Govt component of Australian Govt reports to World Heritage Committee (UNESCO) 2005-2009 on Tasmanian Wilderness World Heritage Area.
- Management of Secretariat for Environment and Resources Heads of Agency and coordination of relevant issues for whole of government.
- Management of *Tasmanian Community Forest Agreement* (Tasmanian and C'wealth funding totaling $221m). Management of annual reporting to C'wealth on expenditure and implementation for whole of government.
- Review Team for 2nd Tasmanian Regional Forest Agreement Review 2008, with Reviewer, John Ramsay.

Aug 2005 – June 2007
Senior Policy Analyst, Policy Division, DPAC

- Provision of Whole of Govt policy advice on land use planning, natural resources, infrastructure, transport, energy, world heritage, and climate change.
- Tasmanian Government representative on COAG Climate Change Working Group and National Emissions Trading Taskforce
- Management of the *Tasmanian Community Forest Agreement*, reporting on expenditure and budgets.

- Team leader assessing annual Budget submissions from Government Agencies (DoE, DIER).

Jan – Aug 2005
Senior Policy Analyst, Local Government Division, DPAC
- Key Performance Indicator Report for Tasmanian Local Government 2003-04
- Development of an evaluation framework for five year review of KPIs.

Nov 2003 – Dec 2004
Project Manager, Land Transport Safety, Dept of Infrastructure Energy and Resources.
Introduction of regulations on Driving Hours Record for heavy vehicle industry in Tasmania.

Apr – May 2004
Acting Manager, Ministerial Liaison Unit, Dept of Infrastructure Energy and Resources.
Aug 2002 – Nov 2003
Senior Project Officer, Business Case to redevelop the Motor Registry System [MRS], for Tasmanian Government.
Inter-Agency Steering Committee team delivered a Business Case to Cabinet to redevelop the MRS to deliver "whole of government" outcomes. A $24.5m project over seven years.

Oct 2001 – Jun 2002 Assistant Director, Office of the Tasmanian Energy Regulator, Dept of Treasury and Finance.
- Stages 1-3 pipeline construction licences, licensing framework for Duke Energy under the *Gas Act 2000*; establishment, publication and monitoring of standards and codes for gas entities
- Licensing of Woolnorth Wind Farm Stage 1 and conversion of Bell Bay Power Station
- 12 concurrent public consultations for licences and codes
- Planning and policy for entry into National Electricity Market for distribution and retail
- Development of draft licensing framework for Joint Advisory Panel on Basslink
- Management of the Gas and Electricity Customer Consultative Committees
- Management of the Tasmanian Electricity Code and derogations process.

July 1999 – Oct 2001 Project Manager, National Intelligent Access Project (IAP), DIER and Standing Committee on Transport.
The IAP is a nationally consistent program to monitor heavy vehicles through in-vehicle telematics/GPS. Delivery to market is via an innovative public/private partnership model. The Project was developed in DIER and successfully transferred to Austroads in 2001 for implementation, final feasibility being accepted by Australian Transport Council in 2003. https://www.onlinepublications.austroads.com.au/items/AP-R223-03

Sep 1998 - Jul 1999 Policy Adviser, Aviation and Transport Logistics, DIER.

Affiliations/memberships
- Planning Institute of Australia (Tasmania)

Consultancies
- Contracted by Hobart City Council to develop project documentation and Module 1 for the City of Hobart Transport Strategy 2018-2030, from January 2016 to January 2018.
- Consulted to Intelligent Transport Systems Australia and Victorian Govt on national policy required to establish a national Centre of Excellence for ITS.

Presentations and papers
- Spatial Planning Program, Royal Town Planning Institute Annual Conference, London, June/July 2005
- Panelist, Australasian Fleet Managers Association Conference, Hobart, May 2003

- Paper presented in Technical Program at International Road Federation World Congress, Paris 2001
- Adviser to OECD, Paris, 2001 on Intelligent Transport Systems
- Workshop, Department of the Environment Transport and the Regions, London, 2001
- Australian delegate, International Standards Organisation, Cologne, 2001.

Professional Development

- DIER Senior Management Training Program 2010 - 2014
- Occupational Health and Safety course, TAFE, May 2008
- Certificate, Advanced Benefit Cost Analysis, University of Queensland, 2004
- "Managing Up", Searson Buck, 2004
- Certificate, Effective Negotiations (ENS), 2004
- Certificate, Thomsett Business Systems Analysis, 2003
- Certificate, Private /Public Partnerships University of Queensland, 2000

LUCY BURKE-SMITH

ARCHITECT & HERITAGE CONSULTANT

[redacted]

Lucy is a registered architect with specialist experience in built heritage and post graduate qualifications in heritage conservation. She has over 17 years experience in the management of delivery and management of complex, large-scale conservation and infrastructure projects and extensive experience as a participant in, and leader of, multidisciplinary teams. In addition Lucy has over 14 years demonstrated experience in public administration through senior management roles in government. During her time in government Lucy was responsible for ensuring quality design and conservation outcomes for the significant heritage property portfolio's of The Rock's and Port Arthur Historic Sites.

PROFESSIONAL EXPERIENCE

Purcell Architecture
Associate
2017 - present
Leadership role within the practice. Responsible for the co-ordination and delivery of a broad portfolio of architectural, masterplanning and heritage consultancy projects for Commonwealth, State, Local Government and private clients. Asia Pacific representative on the Purcell Board of Trustees.

Port Arthur Historic Sites Management Authority (PAHSMA)
Conservation Manager
2013 - 2017

Senior management role. Responsible for conservation and management across three of the historic sites forming the Australian Convict Sites World Heritage Listing. Project Managed the delivery of the Penitentiary Precinct Conservation Project and Port Arthur Visitor Centre.

Sydney Harbour Foreshore Authority (SHFA)
Heritage Architect
2006 - 2013

Senior management role. The SHFA managed over 100 heritage listed places within The Rocks heritage precinct. Responsible for the conservation management of this portfolio on behalf of the government, inclusive of State Agency Heritage Guidelines. Part of this role included delegated authority from the NSW Heritage Council for the determination of applications under the NSW Heritage Act 1977. Consultation and engagement with project proponents to ensure quality design and conservation outcomes for this significant urban precinct.

NSW Government Architects Office
Graduate of Architecture
2004 - 2006

Project Lead and support on a range of architectural, urban design and conservation projects for State Government Agencies.

NSW Public Works
Graduate Program
2003 - 2004

Rotation through State Government departments inclusive of Project Management roles and as Assessment Officer at the NSW Heritage Branch.

EDUCATION

Registered Architect
Tas ARB No. 898, NSW ARB No. 8242
Grad Cert Heritage Conservation
University of Sydney
BArch Hons 1
University of Newcastle
BSc (Architecture)
University of Newcastle

COMMITTEES AND PANELS

Australian Institute of Architects (Tas) Awards
Jury Chair 2020
Purcell Employee Ownership Trust
Board of Trustees (current)
Cascade Female Factory Design Competition
Competition Advisor 2017-2018

PUBLICATIONS, CONFERENCES AND TEACHING

Sessional Lecturing (USYD) Masters of Conservation
New Design in Old Settings 2019
Australia ICOMOS Conference
Penitentiary Precinct Conservation Project 2015
Architecture Bulletin
Provoke 2018
Ambitions 2016

SELECT PROJECTS

Bridgewater Bridge
Lead consultant in providing strategic heritage advice to State Growth. This advice seeks to manage and monitor the potential impacts of an upgrade to the Bridge across the complex features of the Bridgewater Crossing inclusive of the convict built causeway and existing and previous bridges.
Client: Department of State Growth, Tasmania

Treasury Complex and Public Buildings, Hobart
Lead author for a Conservation Management Plan for the Treasury Complex and Public Buildings, prepared in collaboration with ERA Planning. The CMP which is intended to inform future feasibility studies, and adaptive re-use thus ensuring long term conservation throughout any future development.
Client: Department of Treasury and Finance, Tasmania

Morwell Power Station and Briquette Factory, Morwell, Victoria
Lead author of a Conservation Management Plan (CMP) for the state heritage listed Morwell Power Station and Briquette Factory, located in amongst a collection of post-war industrial power generation sites in the La Trobe Valley. The CMP will provide a detailed understanding and practical significance assessment of remnant structures that enabled power generation and production of coal briquettes to assist future management, conservation and use of the site, including the identification for change and development.
Client: Gippsland Infrastructure

Cascade Female Factory Historic Site, Hobart
Provision of professional advice and management of the multi-staged international design competition. This included management of the competition Jury in accordance with AIA Competition Guidelines and State Government procurement considerations. Development of the functional brief was undertaken in consultation with PAHSMA. Following the award of competition Purcell were retained to provide continued support to ensure that the design development retained integrity against the functional and budget objectives with ongoing client side review of design development.
Client: Port Arthur Historic Sites Management Authority (PAHSMA)

Port Arthur Penitentiary Conservation Project, Tasmania
This project was awarded the prestigious UNESCO Asia Pacific Award for New Design in Heritage Context. The project sought to stabilise the symbolic Port Arthur Penitentiary with minimal intervention to the heritage fabric and values of the place. The developed solution stands as an exemplar and one that UNESCO cites as a 'vocabulary being clearly of its own time yet deferential to the iconic historic building'.

Bridgewater Bridge (Source: Libraries Tas)

Treasury Complex and Public Buildings (Source: Purcell)

Morwell Power Station and Briquette Factory (Source: Purcell)

Port Arthur Penitentiary (Source: PAHSMA)

Last Printed: 7/9/20

[redacted]

Monday, 7 September 2020

Mr N Heath
General Manager
City of Hobart
GPO Box 503
HOBART TAS 7001

Attention of Mr Neil Noye
Director City Planning

Dear Mr Heath,

APPLICATION FOR POSITION – URBAN DESIGN ADVISORY PANEL

For the Attention of Mr Neil Noye

I wish to register my nomination for the City of Hobart's Urban Design Advisory Panel.

I am passionate about the connection to place that is obtained through people remaining and engaging with that space. Within an urban environment this is achieved with quality urban design that engages a diverse spread of people and fosters a safe and inclusive public space.

I am a Registered Planner with the Planning Institute of Australia with over fifteen years working in the Tasmanian Planning System, the majority of which has been as a Local Government Planner at Kingborough or Huon Valley Councils. I have gained a sound understanding of the importance of good public policy through working as both a statutory and strategic planner and whilst coordinating the Planning and Development Unit at Huon Valley Council. As can be seen by my attached Curriculum Vitae, I have had considerable experience with public space design, particularly in the context of understanding how individuals and a community can form an attachment to a space which has the potential to foster economic development for the businesses surrounding and associated with that space.

Trent Henderson
[redacted]

My extensive experience working as an urban planner is strengthened by my academic research within this field. Throughout my academic career there has been as strong focus on the community's sense of place and how development and design can impact both negatively and positively on such an attachment. I have since obtained a Master of Environmental Planning with a core focus on urban design and place attachment, utilising the development opportunities for Kingston Central Business Area as a study focus. My master's degree has been supplemented with a Graduate Certificate of Urban Design, further exploring in detail urban design principles. Additionally, my recent completion in of a certificate in Busines Sustainability Management, from the University of Cambridge explored the economic opportunities that present themselves through focusing on and implementing the United Nation's Sustainable Development Goals, particularly for generating local development and reinvigorating local economies. These sentiments are driving core principles behind placemaking currently voiced from urbanist thinking for new local economic focus post COVID-19 and the impact this will have on how urban space will now be used.

Peoples' connection to the place, specifically within the urban environment, is a core passion of mine that sees me constantly researching and engaging in the field as a matter of course, which keeps me up to date with smart cities principles, safety by design and equitable access concepts to name but a few. As such, I know that I would be an asset to the City of Hobart's Urban Design Advisory Panel. My experience as a local government planner along with previous professional Board Membership, especially with the Local Government Professionals Australia (Tasmania), and my advisory role for the University of Tasmania Master of Planning Course Advisory Committee, means I am eminently suitable for the advisory role and have a strong understanding of the requirements of Council.

Please find attached my curriculum vitae that details my experience and knowledge for the advisory position.

I look forward to discussing the position with you or your representative as soon as possible. I can be contacted anytime on either my mobile [redacted] or via emai[redacted]

Yours sincerely,

Trent Henderson (RPIA)

Last Printed: 7/9/20

Curriculum Vitae

Trent Jason Henderson

[redacted]

Professional Membership & Experience:

Registered Planner of the Planning Institute of Australia (RPIA)

Associate Member of the International Council on Monuments and Sites (Australian ICOMOS)

Member of Local Government Professionals Australia	**since 2015**
- Corporate Member	July 2020 to Current,
- Board Member Local Government Professionals Tasmania	Oct 2019 to June 2020,
- President Southern Branch Tasmania	Sept 2019 to June 2020,
- Secretary Southern Branch Tasmania	2016 to 2019
- Tasmanian Representative – LGPA National Research Committee	Sept 2015 – Sept 2016.
- Won the 2015 Australasian Local Government Managers Challenge.	

Board Member of Immaculate Heart of Mary Catholic School **since 2016**

June 2020 to Current – Red Seal Urban & Regional Planning – Principle Planner, own Town Planning Consultancy.

October 2019 to Current – University of Tasmania Master of Planning Course Advisory Committee Member

September 2017 - Residential Representative for New Town Retail Precinct Upgrade – City of Hobart, Project Action Team member.

May 2016 to June 2020 – Senior Planning Officer - Huon Valley Council

- Lead and coordinate Huon Valley Council's Planning and Development Services Unit,
- Member of Council's Major Projects Committee,
- Provide in-house planning advice for the *Huonville & Ranelagh Master Plan*,
- Coordinate land use planning and development engineering services,
- Development, maintenance and review of Council's Planning Scheme, land use strategies and related policies,
- Assess planning applications, planning scheme amendments, and related matters,
- Advise developers, community members, Councillors and internal staff on planning and development engineering matters,
- Represent Huon Valley Council at the Appeals Tribunals and other public planning forums,
- Lead, mentor and oversee statutory and strategic planners and development engineer,
- Other Council roles – Contact Officer, Mental Health First Aider,

January 2010 to October 2015 – University Research Associate, School of Geography & Environmental Studies, University of Tasmania

- This position involved working with academic research staff on the analysis of Planning Policy at international, federal, state, and local government levels with a particular focus on planning design policies for regional development and how individuals and a community can form an attachment to a place through such Planning Policy.

March 2006 to May 2016 – Planning Officer – Kingborough Council

- Planning Officer for ten years in a position that covered both strategic and statutory aspects of planning. Council roles included Acting Senior Planner, and involvement in:
  - Numerous development applications, particularly Telecommunication Towers or applications involving a community asset plus assessment or design impact on public space,
  - Represent Kingborough Council at the Appeals Tribunals and public planning forums,
  - Take the New Urbanist inspired Kingston Green Master Plan and draft initial provisions for the Specific Area Plans within the Interim Planning Scheme 2015, whilst maintaining the urban design principles of New Urbanism,
  - Take the Former Kingston High School Site Master Plan prepared by Consultants and draft the initial Specific Area Plans provision for the Kingborough Interim Planning Scheme 2015, whilst maintaining the pedestrian and play based objectives of the master plan,
  - With Councils Sport & Recreation Planner undertake a Municipality survey of public open space and develop the base for a strategy & contribution policy,
  - Working with Council's Sport & Recreation Planner, Urban Designer, and various Developers to negotiate, design, and implement the following new public parks,
    - corner Dianella Drive & Burwood Drive Blackmans Bay,
    - corner Incana Road & Hyssope Road Margate,
    - corner Sunsail Street & Space Court Snug,
    - open space layout in Whitewater Creek subdivision development,
    - plus, numerous revamps and trails,
  - Inaugural member of the Significant Tree Advisor Panel.

August & September 2007 – Secondment with Heritage Tasmania

- Secondment part of the Kingborough Council's review of cultural heritage policy.

June 2005 to March 2006 – Place-maker - Female Factory Historic Site Ltd.

- Co-ordinated over 100 volunteers along with schools, government and private industry groups for an historic re-enactment of the arrival in Hobart (1829) of the first principle female convict ship *Harmony*, with the aim of initiating community engagement and promoting the importance of the convict women's heritage site and the initial European Settlement of Australia as part of the process for listing the site as a UNESCO World Heritage Site.

August 2005 to March 2006 – Consultant Field Researcher – Myriad Research Consultancy

August 2005 to March 2006 – Consultant Market Researcher for Taste of The Huon (Inc.)

2005 – Facilitator at Community Workshops – The Channel Enterprise (Inc.)

- This event involved engaging the local Woodbridge community in the establishment of a Charter of Community Values at the Woodbridge: Tourism and Development conference and facilitated workshops on tourism, development and the planning system.

2005 - Field Researcher – Events Tasmania

Formal Education:

2019 Business Sustainability Management – Institute for Sustainable Leadership, University of Cambridge

- Sustainability challenges & opportunities, leadership & effective change management, through addressing climate change & implementing the United Nation's Sustainable Development Goals.

2014 Graduate Certificate of Urban Design – Deakin University

- Completed areas of study: Urban Perspectives, Managing Change & Innovation, Interdisciplinary Planning & Design, Urban Ecologies, Advanced Project Management, Research Methodology, and Built Environment Integrated Project.

2009 Master of Environmental Planning

- School of Geography and Environmental Studies at University of Tasmania
- Field of research: Cultural Landscape and community attachment to place. Research paper explored the hypothesis of whether an authentic attachment of place can be established through good urban design policy, focusing on Kingston Central Business Area and the opportunities with the former high school redevelopment.

2007 Graduate Diploma of Environmental Planning (course work)

- School of Geography and Environmental Studies at University of Tasmania
- Areas of study: Sustainable Land Use Management, GIS Analysis, Natural Area Management, Environmental Impact Assessment, Conservation Management Planning, Protected Area Management, Ecosystem Conservation, plus Leadership, Influence & Dispute Resolution

2005 Bachelor of Arts with Honours

- The School of Geography and Environmental Studies, University of Tasmania
  Thesis Title: *The Impact of Tourism and Development on the 'Sense of Place' of Small Communities: Case Study of Woodbridge, Tasmania.*

2003 Bachelor of Arts - University of Tasmania

Majors: Geography & Environmental Studies, English Literature.
Minors: History, Politics & Policy.

Additional Professional Qualification & Experience:

Regularly attended workshops/seminars hosted by PIA and other professional organisations such as ICOMOS, AILA and LGPro.

Aug 2020 -	***The New Local – Building Resilient & Regenerative Places***, 4-part place-making webinar workshop, by Gilbert Rochecouste & Michael Shuman from *Village Well*
2017 -	Mentored a combined Kingborough Huon Valley team at LG Pro Tasmania Management Challenge
2016 -	Affiliated Researcher Peter Underwood Centre for Educational Attainment
2016 -	Climate Change – Chifley Business School & Planning Institute of Australia
July 2015 -	Joint presented at the 2015 Local Government Professionals Research Symposium
June 2015 -	**Won the Australasian LG Professionals Australia Management Challenge**
Sept 2014-	Erosion & Sediment Control on Construction Sites – Cert L2 QLD TAFE
June 2012 -	GIS and Census Data Analysis, University of Melbourne
July 2011 -	GIS Analysis for Planners, University of Melbourne & PIA
2011 -	**Legislation & Governance** - Chifley Business School & PIA
July 2010 -	Construction Induction, Workplace Standards Tasmania (White Card)
April 2010 -	**Urban Design** - Chifley Business School & Planning Institute of Australia
Feb 2010 -	**Place-making Workshop** with David Engwicht
Nov 2006 –	**Risk-based Land Use Planning** – Emergency Management Australia
Oct 2005 -	Thematic Interpretive Workshop - Professor Sam Ham, Idaho University and Tourism Tasmania.
July 2005 -	Industry Skills in Tourism, Statement of Attainment, Southern Training, Employment & Placement Solutions.

References

[redacted]

From: Ian James
To: Records Unit
Subject: Nomination to the Urban Design Advisory Panel
Date: Thursday, 27 August 2020 6:38:39 PM

To:
The General Manager
Hobart City Council

Re:
Recently advertised 'Invitation for Nominations to the Urban Design Advisory Panel'

Dear Sir

I wish to re-nominate as a member of the Urban Design Advisory Panel with 'both planning and urban design expertise'.

I was initially appointed to a 2 year term with the panel in May 2018 and I trust that my input to the panel has been of assistance in promoting better urban design outcomes within the City of Hobart. I have thoroughly enjoyed the opportunity to be involved in what is an interesting time in the city's development and am keen to continue for a further 3 year term.

I have more than 40 years professional experience as an urban designer, mostly within local government, which can be summarised as follows:

- 1977 Associateship in Architecture, WA Institute of Technology.
- 1977 – 1994 Employed at the City of Perth Planning Department as urban designer and subsequently as Manager of the City's Urban Development Unit.
- 1994 – 1999 Private practice Ian James Urban Design.
- 1999 – 2017 Employed at the City of Fremantle as Strategic Urban Designer.
- 2018 – 2020 Member Hobart Urban Design Advisory Panel.

I have had considerable experience in all areas of urban design, including preparation of:

- Strategic urban design and development plans.
- Planning and design policies and guidelines.
- Planning scheme amendments.
- Concept designs for city places and local centres.
- Managing design consultancies and architectural competitions

I consider that I can bring useful experience and skills to the UDAP, particularly:

- Extensive urban design understanding and experience in the planning and development of cities.
- Previous involvement in a design advisory committee dealing with architects and applicants for major developments.
- Provision of urban design comment to elected members on major developments.
- Close collaboration with town planners and other design professionals.

- Considerable understanding and experience with planning schemes and other planning frameworks.

I can be contacted by phone on [redacted] if you require any further information.

Yours sincerely
Ian James

Sent from Mail for Windows 10

GHDWOODHEAD

2 Salamanca Square
Hobart TAS 7000
Australia
[redacted]
GHD Pty Ltd
ABN 39 008 488 373

Neil Noye
Director of Planning
Hobart City Council
Hobart Town Hall
Tasmania 7000

Our ref:
Your ref:

4 Nov 2020

Dear Neill,

Nomination - City of Hobart Urban Design Advisory Panel

Further to the above, please find attached my CV in support of a nomination .

An obvious motivation in the role as a member of the City of Hobart Urban Design Advisory Panel is in the making and improving of Hobart as a vibrant place - to improve the quality and worth of architecture and urban design, and thereby, the city.

I am inspired by the public worth in architectural or urban design expression when it is combined with spatial intelligence, structural integrity, coupled with environmental and social responsibility.

I completed RMIT's Master of Architecture program in 2000. As an invited postgraduate stream and research cluster, the program focussed on reflective, practice-based research, under the tutelage of RMIT's Leon van Schaik who, describing me as a 'true innovator' and has also promoted my work as 'having a beguiling sense of place and purpose'.

Prior to the RMIT higher degree, I held a full-time position as Lecturer in Architecture for 5 years at the University of Tasmania (1992-97) in Launceston.

Since that time, I have gained diverse experience in complex and awarded projects in Hobart, Sydney, Melbourne, Brisbane, Adelaide and Canberra.

Serving as President of the Australian Institute of Architects (Tasmania) during 2007-2009, I was instrumental in the appointment of Peter Poulet, as Government Architect (later overturned, after my departure, by later elected representatives and government). I also accepted an appointment as an Adjunct Professor at the University of Tasmania between 2008 and 2011.

I have attended schools of architecture as a visiting critic or guest lecturer at RMIT, University of Melbourne, UTS, Newcastle University, UTAS, Monash University, and University of South Australia. I delivered a national lecture tour for the AIA on the Quality of Architectural Documentation in 2013.

I have sat on a number of design award panels and industry committees including the AIA, Board of Architects, Tasmania, Tasmanian Architectural Narratives, Hobart Lord Mayors Economic Development Forum, Tasmanian Building Industry Council and the Property Council of Australia

I have over 30 years of applied professional experience in a wide range of architectural settings, at all scales, complexities and phases of projects, from small/bespoke to major capital works projects in Australia.

As a founding principal of Jones Moore Architecture (in 2015), my work includes the preparation of a functional design brief of 40,000m2 for the National Gallery of Victoria's NGV Contemporary project and a Master Plan Study for Heide Museum of Modern Art. Recent work includes the design of a new performing arts centre for Camberwell Girls Grammar School.

Jones Moore Architecture was established as a design-based practice, underpinned by over twenty years of experience and contribution to a broad range of innovative, diverse, significant and award-winning projects, undertaken during employment and collaboration with national and international practices.

Conceived as an opportunity to align design value with client/project objectives in a more direct, agile, responsive and collaborative way, Jones Moore Architecture's approach is grounded in creative connection, engagement and interaction with landscape and all levels of human experience – cultural, public, social and individual – to deliver innovative and sustainable master planning, feasibility, design and place-making solutions.

After several collaborations with GHD, I was appointed as Design Director and Director of Architecture with GHDWoodhead in 2018, to augment an architectural studio in the Hobart office of GHD and was recently promoted to the role of civic, community and justice National Sector Leader.

My work has required a demonstrated practical knowledge of issues influencing project concept framing, inputs to business case development, preparing major project functional briefs for important civic projects, capital works, planning and design intervention.

While understanding the issues and dynamics related to build-ability (construction planning, investment, budget control, project management systems and the relationship between asset management, capital investment and market pressures), I also understand the general application, terms and relationships of acts and environmental planning instruments and processes. I recognise and promote the significance of public space and urban design, in terms of block and precinct infrastructure planning, individual/group building design and spatial requirements.

My extensive practitioner experience includes social, physical, economic, environmental and political overlays – with considerations of performance, safety, risk and contractual responsibilities. I offer wide, end-to-end practice expertise and extensive knowledge and experience in urban design, master planning and architectural design across civic, educational, hospitality, institutional, judicial, industrial, infrastructure, commercial and residential sectors.

Regards

4th November 2020

Director of Architecture
GHD Pty Ltd

James Jones

James brings wide expertise to all projects and endeavours – offering extensive knowledge and experience in urban design, master planning and architectural design across public, educational, hospitality, institutional, judicial, industrial, infrastructure and residential sectors.

During an earlier tenure at the Australian & New Zealand practice of Architectus, James formed the Design Directorate, with Lindsay & Kerry Clare, for the international competition winning design for Queensland's Gallery of Modern Art, developing the formative ideas for the acclaimed gallery, with Architectus Sydney colleagues, Geoffrey Way and Petrina Moore.

James first returned to his native state of Tasmania in 2003 to lead the highly awarded Henry Jones IXL Redevelopment project with Morris-Nunn & Associates (MNA) in 2003. Later as a Director of Heffernan Button Voss Architects (HBV), James was the recipient of various state and national awards including the prestigious AIA Robin Boyd Award 2010 for the Trial Bay House and the AIA National Bluescope Steel Award 2008 for the Aurora Energy Operations Centre.

Returning to Architectus as Design Principal of the Sydney and Melbourne offices during 2010-2015, James played a significant role in many award-winning school and tertiary projects, as a member of the winning SAANA/Architectus team for new $450M Sydney Modern project (Art Gallery of New South Wales) and contributed to a wide range and scale of complex and significant civic, infrastructure and residential projects.

As a Principal of Jones Moore Architecture, his work has included preparation of a functional design brief for the National Gallery of Victoria's NGV Contemporary project and a Master Plan Study for Heide Museum of Modern Art.

James was appointed as Design Director and Director of Architecture with GHD Woodhead in 2018 and is the civic, community and justice national sector leader. He continues as a director of Jones Moore Architecture for current projects, alongside his partner, Petrina Moore.

He completed RMIT's Master of Architecture practice-based research program (by invitation) in 2000. RMIT's Leon van Schaik has described James as a 'true innovator' and has described his work as 'having a beguiling sense of place and purpose'.

James served as President of the Australian Institute of Architects (Tasmania) during 2007-2009 and also accepted an appointment as an Adjunct Professor at the University of Tasmania 2008-2011.

[redacted]

QUALIFICATIONS

- Master of Architecture (by invitation) RMIT University 2000
- Graduate Diploma of Architecture TSIT 1984
- Bachelor of Arts Environmental Design TCAE 1980
- Registered Architect Tasmania 1988-2017
- Registered Architect Victoria 2013-2017
- Registered Architect New South Wales 2017
- Accredited Building Practitioner - Architect Tasmania 2004-2017

EMPLOYMENT HISTORY

- Direcctor of Architecture - GHDWoodhead 2018 - 2020
- Principal - Jones Moore Architecture 2015-2020
- Design Principal - Architectus 2010-2015
- Director - HBV Architects 2005-2010
- Associate - Morris Nunn & Associates 2003-2005
- Associate - Architectus 2001-2002
- Senior Project Manager - City of Sydney 1999-2000
- Senior Architect - UTS Property Development Unit 1998-1999
- Lecturer/Sessional Studio Lead - UTAS 1988-1997
- Principal - James Jones Architect 1988-1998
- Architectural Assistant - Various 1980-1986

AFFILIATIONS + PROFESSIONAL ROLES

- Member Property Council of Australia (2018-2020)
- Member Australian Institute of Architects (AIA) 1979-2017
- Member Association for the Development of Design Tasmania 1988-97
- Member Board of Architects Tasmania 2007-2008
- Member Hobart Lord Mayors Economic Development Forum 2007-2008
- Building Industry Professional Education Steering Committee 2007-2008
- Founding Member Hobart Architectural Co-operative 1980-1984
- Tasmanian Building and Construction Industry Council 2007-2008
- Chapter Councilor AIA Tasmanian Chapter 1997, 2007-2010
- National Councilor AIA 2007-2008
- President AIA Tasmanian Chapter 2007-2008
- Adjunct Professor School of Architecture UTAS 2008-2011
- Studio Critic UTS (Winston Barnett & John DeManincor) 2012
- Studio Critic RMIT University (Jeremy McLeod & Stuart Harrison) 2012
- Studio Critic RMIT University (Paulo Sampaio) 2012
- External Examiner 5th Year UTAS School of Architecture (Owen) 2007
- First Cohort External Examiner Monash School for Architecture 2012
- Studio Critic Monash School for Architecture (Nigel Bertram) 2014
- Jury Member RAIA Tasmanian Chapter Architecture Awards 1997
- Jury Member Engineers Institute of Australia Awards 2007
- Jury Member National Houses Awards 2012
- Jury Member (Houses) AIA Vic Chapter Architecture Awards 2013
- Jury Chair AIA Tasmanian Chapter Architecture Awards 2016
- Jury Chair Triennial Award AIA Tas Chapter Architecture Awards 2016
- Significant Architecture Committee AIA 2016-2017
- Organising Committee AIA Tas Architectural Narratives Bruny 2017
- Internship Program School of Architecture & Design UTAS 2017

James Jones

PROJECT EXPERIENCE

DIRECTOR OF ARCHITECTURE– GHDWOODHEAD 2018-2020

- **Hunter Street Campus Study -** UTAS
- **Masterplan -** The Hutchins School
- **Newnham Campus Masterplan Study** - UTAS
- **State Facilities Masterplan** - TasNetworks
- **Burnie Courts Redevelopment** - Department of Justice
- **Collections, Research and Access Functional Brief -** TMAG
- **Public Spaces Masterplan City Site -** TMAG

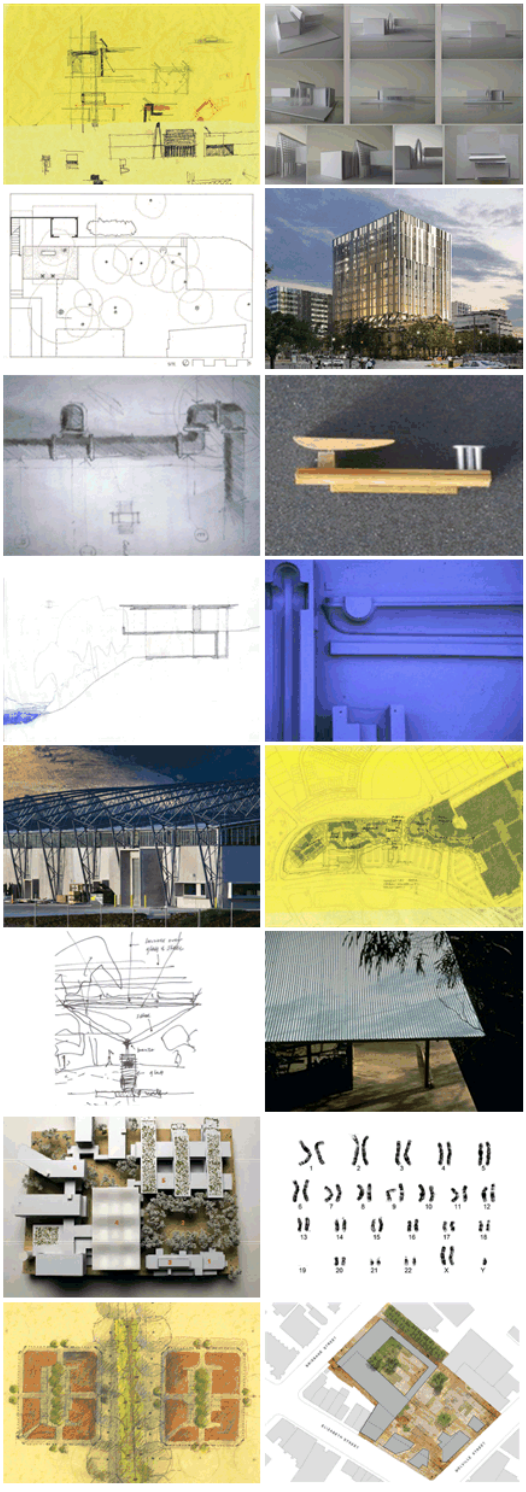
PRINCIPAL – JONES MOORE ARCHITECTURE 2015-2020

- **Wilcannia Cultural Centre -** BAAKA Corporation
- **Performing Arts Music & Drama Centre -** Camberwell Girls Grammar
- **Residential Club** - Villawood Properties (with Six Degrees)
- **Town Centre** - Villawood Properties (with Six Degrees)
- **Heide MOMA Masterplan Study** - SGS Economics & Creative Victoria
- **Functional Design Brief NGV3** - National Gallery of Victoria
- **Devonport Waterfront Hotel Design** - Finalist (with Architectus + TCL)
- **Riversdale Gallery Competition** (with Room 11 & Openwork)
- **Dandenong Art Gallery Design Brief** - City of Dandenong
- **Student Accommodation** RMIT Village & CLV (with ADH)
- **Kingston Community Hub Design Competition** (with ADH)
- **Petrol Station** - Villawood Properties (with Six Degrees)
- **Courtyard House** - Patricia Sabine

DESIGN PRINCIPAL – ARCHITECTUS 2010-2015

- **Sydney Modern** AGNSW (with SANAA)
- **Central Courtyard Masterplan** - Macquarie University
- **Mixed Use, Business School** - Macquarie University
- **Academic Space Utilisation Stu**dy - Monash University
- **Multi-Residential Design Competition** – City of Sydney
- **Mixed Use Development Melbourne Central** – GPT
- **Arts West Faculty of Arts** - Faculty of Arts, UoM (with ARM)
- **Adelaide Courts Precinct PPP Submission** – CBus Consortium
- **William Macmahon Ball Lecture Theatre** - Faculty of Arts, UoM
- **Ringwood Campus Masterplan Review** - Tintern Schools
- **Project Research NGV** - SSGS Economics & Planning & Arts Victoria
- **Retail Expansion Chirnside Park** - GPT Group
- **Middle School** - The Tintern Schools
- **Carlton Connect Feasibility** - University of Melbourne
- **Melville St Student Accommodation** Shortlisted Finalist - UTAS
- **School Administration + Chapel** - Korowa Anglican Girls School
- **The Mandeville Centre** - Loreto Toorak
- **Gipson Commons** - St Michael's Grammar
- **Flinders Street Station Design Competition** - Major Projects Victoria
- **Overseas Passenger Terminal Masterplan** – Sydney Ports
- **Green Square Library Competition** – City of Sydney
- **High Court Security Reviiew for New Entry** – High Court of Australia
- **Sustainable Industries Education Centre** (with MPH Architects)
- **Future Proofing Schools International Competition** – UoM
- **St Kilda Junction Multi-Residential Development** – Rice Consortium
- **West Ryde Boiler House Adaptive Re-use** – Sydney Water

James Jones



PROJECT EXPERIENCE continued

ASSOCIATE - ARCHITECTUS

- **Queensland Gallery of Modern Art** (Winning International Competition Entry & Awarded Project) – Arts QLD + QAG
- **Centenary of Federation Place Design Competition** (Winning National Competition Entry)– NPCP - ACT Government
- **City Administration Centre Design Competition** – (Winning Competition Entry & Awarded Project) City of Wuhu (China)

DIRECTOR - HBV ARCHITECTS 2005-2010

- **Mornington Training Centre** – Aurora Energy
- **Beirut Arts & Culture International Competition** (with Way + Room 11)
- **State Office Fit-out** - Aurora Energy
- **Civic Feasibility Study** - City of Glenorchy (with SMG & Hassell)
- **State Office Redevelopment** - RACT
- **Insurance State Office Fit-out** - RACT
- **The Priory Country Lodge** - Van Diemen Hotel Group Limited
- **State Logistics Store** – Transend Networks
- **Hobart Waterfront International Design Competition** (with Breathe)
- **Aurora Energy Operations Centre** Cambridge – Aurora Energy
- **Trial Bay House** – Robson Jenkins
- **May's Beach House** - Calvert
- **Valleyfield Adaptive Re-use** - Warner
- **Dynnyrne House** - Clements
- **Sandy Bay House** - Groom

ASSOCIATE - MORRIS NUNN & ASSOCIATES 2003-2005

- **Islington Hotel** - Van Diemen Hotel Group Limited
- **West Hobart House** - Edwards Middleton
- **IXL Redevelopment** – Vos Group
- **Henry Jones Art Hotel** – Vos Group
- **IXL Apartments** – Vos Group
- **Aboriginal Art Gallery** - Art Mob
- **St Helens Art Gallery** - Avery
- **IXL Reception, Restaurant & Long Bar** – Vos Group
- **Saffire Resort Design Competition** - Federal Hotels
- **Fly Fishing Lodge** Brady's Lake

SENIOR PROJECT MANAGER - CITY OF SYDNEY 1999-2000

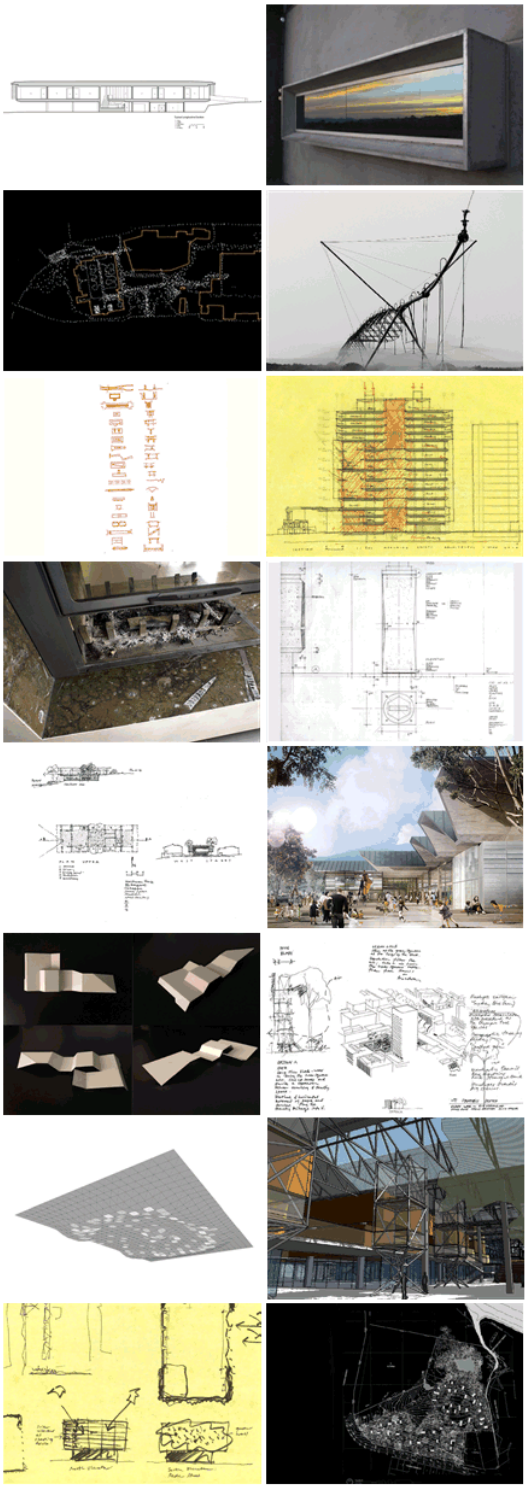
- **Museum of Contemporary Art** Pre-Design Studies
- **Prince Alfred Park Strategy** Plan
- **Sydney Olympics 2000** Public Transport Wayfinding Sign Strategy
- **Underground Infrastructure** GIS Pilot Study

ARCHITECT - UTS PROPERTY DEVELOPMENT UNIT 1998-1999

- **Development Brief** Ku-ring-gai Campus
- **Urban Design Strategy Broadway** Campus
- **Outline Master Plan** Blackfriars Campus
- **Sculpture Installation** Alun Leach Jones
- **Design Guidelines Review** University Buildings
- **Sign Standards Review** University Buildings

[redacted]

James Jones



PROJECT EXPERIENCE continued

LECTURER - UNIVERSITY OF TASMANIA 1992-1997

- **Design Studio Coordinator** 4th Year Architecture
- **Design Studio Coordinator** 5th Year Architecture
- **Building Technology** Lecturer
- **Communications** Lecturer
- **Timber Research** and Teaching Strategy
- **Lecture Forum** Coordinator
- **Exhibitions** Coordinator

PRINCIPAL - JAMES JONES ARCHITECT 1988-1998

- **Museum of Australia Design Competition** - NCPC
- **Andrew Boy Charlton Pool Design Competition** - SHFA
- **Cradle Mountain Waterfall Valley Bushwalkers' Pavilion** - NPWS
- **Eco Tourism Consultancy** - The Bundanon Trust
- **Salamanca Place Historic Street** Reconstruction - City of Hobart
- **Hobart Mall Redevelopment Design** - City of Hobart
- **Bus Shelters** - City of Hobart
- **Hollybank Design Competition** (with Rosevear + Lutrell)
- **Sandy Bay Urban Design Study** - City of Hobart
- **North Hobart Townscape Project & Exhibition** - City of Hobart
- **Westbury Urban Conservation Study** - Tamar Planning Authority
- **Cataract Gorge #2 Urban Wall - A Future Urbanity** - UTAS
- **Studio Alterations, Offices, Workshops** - Dept of Architecture, UTAS
- **Sculpture Studio** - Briant
- **Pottery Studio** - Richardson
- **Houses** - Various

ARCHITECTURAL ASSISTANT - VARIOUS 1980-1986

- **Calwell Primary School** (Canberra) - Barry McNeill Architect
- **Calvin Christian Primary School** - Barry McNeill Architect
- **Queenstown High School Addition** - Heffernan & Viney Architects
- **Battery Point Ellerslie Apartments** - Heffernan & Viney Architects
- **Kingston Aged Care** - Heffernan & Viney Architects
- **Sorell Library** - Bush Parkes Shugg & Moon Architects
- **Glenorchy ANZ Bank** - Bush Parkes Shugg & Moon Architects
- **Tasmania Police Headquarters Design Brief** - Dept of Construction

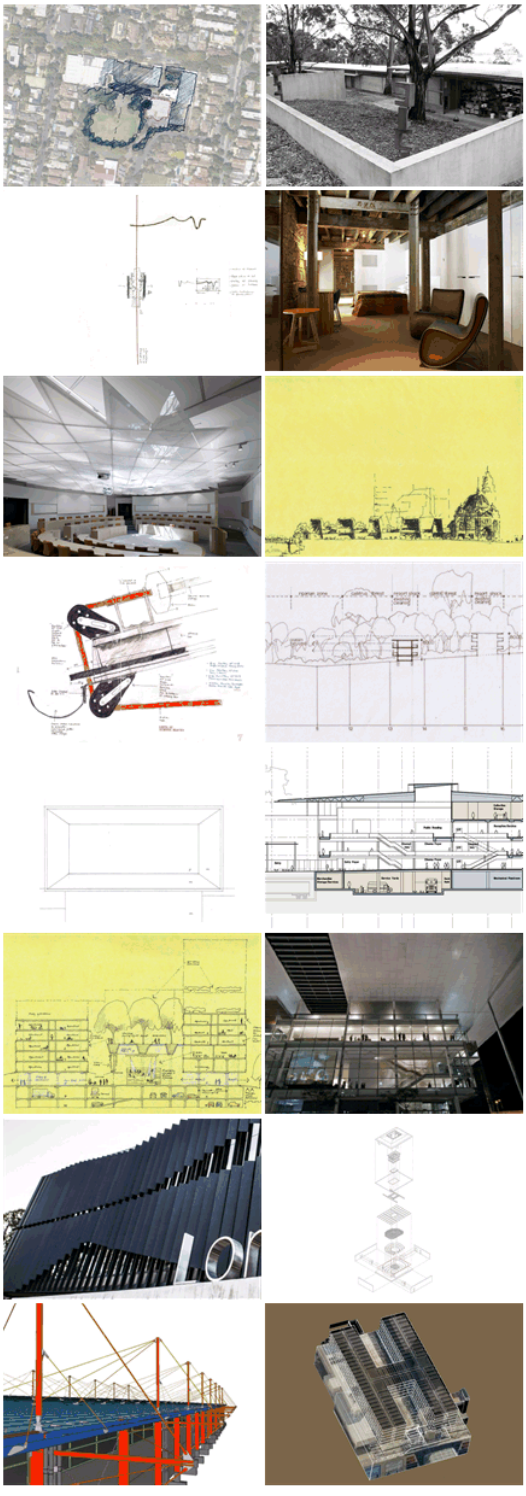
AWARDS

INTERNATIONAL AWARDS

- World Architecture News Education Awards Finalist 2015
  Tintern Middle School (Architectus)
- World Architecture Festival Inside Awards Winner 2014
  SIEC SA TAFE: 2014 (MPH + Architectus)
- Future Proofing Schools Competition Winner 2012
  University of Melbourne (Architectus)
- Architect Selection Design Competition Winner 2001
  Queensland Gallery of Modern Art (Architectus)
- Wuhu City Administration Centre Competition 2001 (Architectus)
- RIBA + UIA International School Design Competition Finalist 1988
  Birmingham UK (with Rosevear & Woolley)

[redacted]

James Jones



NATIONAL AWARDS

- Kingston Community Hub Design Competition 2nd Place 2016
- Education Award AIA 2016 The Mandeville Centre (Architectus)
- Interiors Award AIA 2014 SIEC SA TAFE: (MPH + Architectus)
- Australian Interior Design Awards Finalist 2014 WMBT (Architectus)
- Houses Award 2011 Trial Bay House (HBV)
- Robin Boyd Award AIA 2010 Trial Bay House (HBV)
- Colorbond Award AIA 2008 Aurora Operations Centre (HBV)
- Architecture Award RAIA 2007 GoMA (Architectus)
- Special Jury Award RAIA 2005 IXL Redevelopment (MNA)
- Cent. of Federation Place Competition 1st Place 2001 (Architectus)
- Design Award CHASA 1994 Hollybank Forestry Centre
- Design Award CHASA1994 Waterfall Valley Bushwalkers Shelter

STATE AWARDS

- Education Award Victoria AIA 2017 The Gipson Commons (Architectus)
- Education Award Victoria AIA 2016 The Mandeville Centre (Architectus)
- CEFPI Award - Commendation 2014 - Lecture Theatre (Architectus)
- Interior Award AIA 2014 SIEC SA TAFE: (MPH & Architectus)
- CEFPI Award 2014 SIEC SA TAFE: (MPH + Architectus)
- James Blackburn Triennial Award AIA 2012 Trial Bay House (HBV)
- Esmond Dorney Award AIA 2010 Trial Bay House (HBV)
- Colorbond Award AIA 2010 Transend Primary Store (HBV)
- Commercial Award AIA 2010 Transend Primary Store (HBV)
- Colorbond Award AIA 2008 Aurora Operations Centre (HBV)
- Commercial Award AIA 2008 Aurora Operations Centre (HBV)
- Henry Hunter Award AIA 2008 IXL Redevelopment (MNA)
- John Lee Archer Award AIA 2007 IXL Redevelopment (MNA)
- Heritage Award AIA 2006 Edwards Middleton Residence (MNA)
- Heritage Commendation AIA 2006 Islington Hotel (MNA)
- Public Buildings Award AIA 2005 IXL Redevelopment (MNA)
- Heritage Award AIA 2005 IXL Redevelopment (MNA)
- Interiors Award AIA 2005 IXL Redevelopment (MNA)
- Environmental Award, 2005 Australian Timber Design Awards (MNA)
- Urban Design RAPI North Hobart Townscape Project 1991
- Hollybank Forestry Centre Design Competition 1991

LECTURES + EXHIBITIONS

- Documentation in Detail, AIA Seminar Hobart + Launceston 2017
- Integrated Logistics Conference Brisbane 2015
- Next Gen Learning Spaces & Pedagogy TEMC Cairns 2014
- Student Housing Forum Melbourne 11-12 June 2014
- Unintended Consequences Uni of SA - Masters Speaker Series 2014
- National Architecture Awards Exhibition Canberra 2010
- Abundant Australia Venice Architecture Biennale Exhibition 2008
- The Dilemma of Museums of Modern Art - lecture (RAIA/SCWA) 2007
- Role of the Architect MBA State Conference 2007
- States of Mind National Architectural Conference - Hobart 2004
- Designing the Highline, New York 2003
- Uni of Newcastle Department of Architecture Invited Lecture 2002
- UQ Summer Symposium Stradbroke Island 2002
- Portraits of Place RAPI Conference Adelaide 1995

[redacted]

James Jones

PUBLICATIONS + REVIEWS

- Colquhoun, P *Sandcastles - Australia's Greatest Coastal Homes* Universal 2017
- *'Ideas Meet Here' - Ten Years of GOMA* 2016
- *'50 - Cladding a Nation'* Steel Profile Issue 125 Nov 2016
- Gillam, R *'Hovercraft' - Tintern Middle School* Steel Profile 2015
- Beck, H & Cooper *Clare Design: Works 1980-2015 'Without White Ropes'* Uro Editions 2015
- Bertram, N *Tintern Middle Schools* Architecture Australia Jan/Feb 2015
- Rosewarne, M (Ed) *Places for Learning - Contemporary Design in Education* CEFPI 2014 pp 87-88
- Goad, P *William Macmahon Ball Theatre* Artichoke 2014
- Friedman, A *Innovative Houses - Concepts for Sustainable Living* L King Publications 2013 pp 146-49
- Giles, N *Art Smarts, Brisbane* Monocle Magazine Issue #75 pp 151 - 155
- Dewhirst, D *From The Ground Up – 20 Stories of a Life in Architecture* 2014
- Jones, J *J H Esmond Dorney Fort Nelson House (1978) Revisited* Houses Magazine, Feb 2012
- Tackle, G *Best Contemporary Country Houses* Think Publishing 2011 pp 184-187
- Stube, K & Parken, D *Inspire - Australian National Architecture Awards 2010* Trial Bay House pp 87-89
- Stube, K & Parken, *D Inspire-Australian National Architecture Awards 2010* Transend Primary Store, pp 214
- *The Australian Financial Review Nov 2010* Robin Boyd Award for Residential Architecture – Houses pp 36
- Ryan, J *ABC Radio National 'By Design'* Trial Bay House Interview 30 Nov 2010
- Ogilvie, F *ABC Radio The World Today 'Tasmanian House judged Australia's best'* 29 Nov 2010
- Citation *Robin Boyd Award for Residential Architecture* Trial Bay House AA, Nov/Dec 2010
- Citation *Esmond Dorney Award for Residential Architecture* Houses, AIA Monograph Sunday Tas Jun 2010
- Citation *Award for Commercial Architecture* AIA Monograph Sunday Tasmanian Jun 2010
- Citation *Colorbond Award for Steel Architecture* AIA Monograph Sunday Tasmanian Jun 2010
- Bernstone R *Transend Primary Store* Steel Profile Issue 107 Nov 2010
- Green, L *Top 50 Rooms Collector's Edition* House & Garden Trial Bay House pp 130-131 Nov 2010
- Ancher, J *Trial Bay House* 'Houses' Australian Residential Architecture & Design Issue 76, 2010
- Harrison, S *Houses in the Sun* Trial Bay House, Thames & Hudson
- Jones, J *Encyclopaedia of Australian Architecture* 2010 Citation Craig Rosevear Architects
- Wallace M, & Stutchbury S *Place Makers - Contemporary Queensland Architects* QAG 2009 pp 124
- The Australian Financial Review Magazine Nov 2008; National Colorbond Award for Steel Architecture pp 76
- Citation *National Colorbond Award for Steel Architecture* Aurora Operations Centre AA Nov/Dec 2008
- Durbach, Frost, Lewin, Thompson & Warner *Abundant Australia Exhibition Catalogue* AIA 2008 pp 123
- Jones, J *'Cranbrook: Tasmanian Architectural Narratives'* Architecture Australia, July/August 2007
- Jones, J *'Without White Ropes' Queensland Gallery of Modern Art* UME 21, Summer 2007 pp 2-13
- Beck, H & Cooper J *Queensland Gallery of Modern Art* UME 21 Summer 2007 pp 2-13
- Jackson, D *Queensland Gallery of Modern Art* Architecture Australia, Mar/Apr 2007 pp 54-63
- Price, J *Pilgrim's Progress* Queensland Gallery of Modern Art Monument Issue 76 Dec 2006/Jan 2007
- Beck, H & Cooper J *GoMA-Story of a Building* Queensland Art Gallery 2006
- Jones J *'More Talk About Buildings'* Downtown Simon Cuthbert CAST 2005 pp 8-10
- Farrelly, E *'Elegant Sheddery'*, Architecture Australia, Architecture Media Jan 2005 pp 31-32
- Van Schaik, L *The Practice of Practice* - School of Architecture & Design RMIT 2003
- Beck, H & Cooper, J *Suber House* UME 15, Summer 2002 pp 68
- University of QLD Dept. Architecture *Architecture Interacting: 'Sketch as Weapon'* Summer Symposium 2002
- Jones, J *'The Idea So Stripped'* Master of Architecture by Project Catalogue RMIT 2000.
- www.timber.org.au/architecture Suber House FWPRDC Melbourne 2000
- Spence, R *'Bush Shack'* The Architectural Review London Apr 1995 pp 71
- Galfetti, G G *Casas Refugio - Private Retreats* GG Barcelona 1995 pp 114-117
- Moore, P & Jones, J *'Contemporary Buildings in Wilderness'* Eco Design Vol 111 no 1 London1994
- Spence R *'House, Image or Essence'* The Architectural Review London Apr 1990 pp 87-93
- Jones, J *Hollybank Forestry Centre* Exedra Deakin University Vol 6 No 1 1995 pp 19-21
- Jones, J *Waterfall Bushwalkers' Shelter* Exedra Deakin University Vol 6 No 1 1995 pp 22-24
- Atherton I *Constructing Space Contemporary Art in Tasmania* CAST Hobart Winter 1994 pp26-29
- Luscombe, D & Peden, A *Picturing Architecture* Craftsman's House Hong Kong 1992 pp 80-81
- Rees, B & Penny, T: *The Emerging Architect 2* Architecture Australia Aug 1990 pp 58-62

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JAMES MORRISON - CURRICULUM VITAE

November 2020

James Morrison is an experienced architect who has been in practice since 1987 and is recognized for his innovative and creative design and detailing skills. He has an enduring interest and commitment to sound urban design for liveable cities borne out by urban design examples undertaken by Morrison & Breytenbach Architects, to contemporary educational architecture and to Environmentally Sustainable Design (ESD). As well as expertise and specialist skills in energy efficiency and ESD, James brings significant experience in the Green Building Council of Australia Green Star accreditation system, having achieved Tasmania's only two 6 – star Green Star As-Built Accredited buildings to date (the Sustainability Learning Centre (SLC) and University of Tasmania Inveresk NRAS Student Accommodation). As an active member of the Association for Learning Environments Australasia (ALEA), he chairs the Tasmanian branch and regularly attends national and international conferences to keep abreast of current pedagogy, research and design of learning environments.

James's all-round architectural expertise includes design, documentation, and contract administration He has applied this talent for innovation to good effect within his role as project designer and principal in Morrison & Breytenbach Architects. His commitment to environmentally sustainable design and energy efficient outcomes is well evidenced in the practice's project outcomes.

PROFESSIONAL

Morrison & Breytenbach Architects Pty Ltd

Director / Business owner / Principal design & project architect

QUALIFICATIONS

Bachelor of Architecture 1987, University of Cape Town

Bachelor of Architectural Studies 1982, University of Cape Town

Accredited Green Star Professional (2009)

REGISTRATION

Registered Architect Tasmania, 2001 BoA Tas, Reg. No. 510

Registered Architect Victoria, 2004 BoA-V, No. 16248

Registered Architect (ARB) United Kingdom, No. 057397C

BUILDING PRACTITIONER LICENCE

(Tas) Building Practitioner Accreditation No. CC1005U

PROFESSIONAL MEMBERSHIPS

Australian Institute of Architects

Association of Consulting Architects

Learning Environments Tasmania (LEA)

INDUSTRY POSITIONS

Learning Environments Tasmania (LEA) - Tasmanian Chair 2015 - current

Tasmanian Chapter AIA ESD Past Committee Member

JURIST

Tasmanian Chapter AIA Annual Awards Jurist - 2010

PRACTICE OF ARCHITECTURE

AUSTRALIA

1998 – current Morrison & Breytenbach Architects Pty Ltd, Director

1992 – 1998 James Morrison & Yvette Breytenbach Architects – Principal Partner

UNITED KINGDOM

1989 -1991 Furness Associates Cambridge UK, project architect for University of Buckingham library, campus development, university residence

SOUTH AFRICA

1987 - 1989 Van Der Riet & Cooke Architects, Cape Town Architectural graduate on University Western Cape Law Faculty, university residence

Leigh Woolley
Architect
Urban Design Consultant

M.Arch (RMIT) BA (Env. Des) Grad.Dip Arch. FRAIA
Adjunct Professor Architecture and Design UTAS

Leigh has over thirty five years professional experience as an architectural and urban design practitioner, author and educator. He established his own practice in 1987, having previously worked in the public and private sectors in architecture and urban design in Tasmania, SE Asia and the UK. He also worked for a time with the Architectural Press in London as an architectural journalist.

As the principal of Leigh Woolley Architect + Urban Design Consultant he provides design and consultancy services to private clients and all levels of government, within architecture and associated design disciplines, particularly urban design. His work seeks to re-view and re-engage the landscapes of urban society through the practice of architecture and urban design. He is the recipient of numerous professional design awards across these disciplines. He is regularly asked to write and lecture about his work, to participate in design competitions and provide critical review of developments, frequently against guidelines he has developed. In particular he uses the case study of Tasmanian settings to advance his research.

He was the recipient of a Churchill Fellowship in 1999 considering the effectiveness of urban design policies in port cities with strong topographies. He received an Australian Urban Design Award in 2019, the citation described his work as 'an exemplary approach to urban design research at a city scale'.

He has been a member of professional design review panels including the Built Environment Committee of the University of Tasmania and the Sullivans Cove Design Panel. He has appeared as an expert witness before VCAT (Victoria) and RMPAT (Tasmania) planning courts of appeal, and has been a panel member on RPDC Projects of State Significance assessments.

Since 2008 he has been an Adjunct Professor in the School of Architecture and Design UTAS. He has been an invited lecturer to conferences inside and outside Australia and has been a (part time) lecturer in Architecture and Urban Design. His articles and public lectures have been critically reviewed and he is regularly asked to comment on architecture and urban design matters. His photography is held in state and national collections and is part of his working method, a means he suggests of 'interrogating' place. The national award winning publication 'Architecture from the Edge' (with Barry McNeill) was published in 2002.

His architecture, which has been published nationally and internationally, has been described by Leon Van Schaik, architectural critic and Innovation Professor of Architecture at RMIT as: 'a story of a triumph of a meticulous practice that has worked from the Tasmanian condition'.

He practices from Hobart.

Professional design awards include:

PIA, AIA, AILA :
Australian Urban Design Award 2019
Advocacy, Leadership and Research
PIA National Awards :
Commendation - 2020
Best Planning Ideas - Large Project
RAIA Presidents Award :
2018
RAIA Triennial Award :
2000, 2003
RAIA (Merit Award):
1992, 1994, 1995, 1997, 1998, 2000, 2004
RAIA (Commendation):
1989, 1996, 2003, 2006
RAPI / PIA Planning awards / commendations:
1989, 1992, 1994, 2000, 2003, 2007, 2009, 2011, 2013, 2017, 2019
RAIA/ RIBA endorsed competitions:
1989 (2nd) 1991 (1st), 1995 (1st)
Churchill Fellowship: 1999

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Some papers / articles include:

'**Maintaining Intelligible topographies - shaping density in Central Hobart**'
International Urban Design Conference, Hobart, Tasmania, November 2019
'**Orientation + Outreach : Aligning urban futures**'. Paper: UIA World Architects Congress, Seoul Sept. 2017
'**Placing Tasmania : natural ground for urban design**'
'Urban Voices' Celebrating urban design in Australia, 2013
'**Sheltering Human Presence – revealing place through urban design practice**'. April 2012
International Urban Design Conference. University of Nottingham, UK.
'**Harbouring Design – Reclaiming margins in port cities**'
Historic Environment Vol. 22 No. 2 July 2009
ICOMOS National Conference: 'Challenge and Change in Ports and their cities'. (November 2006)
'**The topography of public life**'. Exhibition catalogue. October 2008
'**Working across scales – Common ground for Tasmanian design**'.
National Public Art Conference. October 2005
'**Articulating the Edge: Spatial Prospecting to Build Topography**.'
Masters Exhibition and publication: Fitzroy 2004
The Practice of Practice 2. Education in the realm of design RMIT 2010
'**Negotiating margins, Reclaiming Peripheries: The 'wilderness' imperative in Architecture + Urban Design**'
UIA 2002 XXI World Congress of Architecture, Berlin 2002
'**Urban Design and Wild Nature: Reconsidering edge cities'**.
Leo Port Annual Lecture, University of Sydney 2003
'**Urban Nature and City Design**'. Island Magazine 84 2001

Curriculum Vitae

Oct 2020

Qualifications:

Master of Architecture (R).
RMIT, Melbourne 2004
Graduate Diploma of Architecture
TCAE (now UTAS). 1980
Bachelor of Arts (in Environmental Design)
TCAE (now UTAS). 1974

Professional Affiliations:

Fellow, Royal Australian Institute of Architects. (from 1986) Councillor 1997-8
Chair, RAIA Tas. Chapter Design Awards Jury 2005
Member RAIA National Urban Design Policy Review 2008 - 2011
Member, North Hobart Advisory Committee, Hobart City Council (93-6)
Member, Urban Design Group, London. (from 1983)
Chairperson, Hobart Architectural Co-operative inc. (1984-6)
Representative, Tasmanian Board of Architectural Education (1982-5)
Member, Board, Tasmanian School of Art, Uni of Tasmania (1985-91)
Member, Built Environment Committee, University of Tasmania (2004 – 14)
Member, Sullivans Cove Design Panel, (2005 - 11)
Adjunct Professor, School of Architecture and Design UTAS (2008 – 2019)

Awards:

Australian Urban Design Awards 2019 - Winner Building Height Standards Review Project
PIA National Awards: Commendation 2020
RAIA Tas Chapter Presidents Award 2018
Australian Urban Design Awards 2016 - shortlist (with John Wardle Architects) Macquarie Point Masterplan
Churchill Fellowship - awarded 1998 - tenable 1999
James Blackburn Award for Residential Buildings
RAIA Triennial Design Award (2000) for Dunne Residence - 1997
RAIA Triennial Design Award (2003) for Bennison Read Residence - 2000
Merit Award - RAIA Design Awards - New and extended Buildings (1995)
Merit Award - RAIA Design Awards - Residential (1992, 1994, 1997, 1998, 2000, 2004)
BHP Colorbond Steel Award – Bennison Read House (2000)
Commendation, RAIA Design Awards - Residential (1989) (1996) (2003)
Commendation, RAIA Design Awards - Commercial (2006)
First prize, Wapping Medium Density Housing Competition (1995) (with Eastman Heffernan Walch + Button)
First prize, Hollybank Forest Training Centre Competition (1991) (with Travalia, deGryse, McNeill)
Second Prize, UIA, RIBA Birmingham City Council, UK International Design Competition (1989) (with Jones and Rosevear.)
RAPI. Planning Institute of Australia, Commendations (1989, 1992, 1994, 2000, 2009, 2017)
Awards (2002, 2007, 2011, 2013, 2019)
National Award: Research and Scholarship (2003) (with McNeill)
Commendation, Sullivans Cove Ideas Competition (1986)
Research Scholarship in Urban Design, University of Tasmania (1995 - 7)
Selected Delegate - InterDesign 95 - ICSID International Design Forum (1995)
Arts Tasmania Bursary - Domus Academy Winter School RMIT (1992)
Britain Australia Vocation Exchange Student 1977. London.
Tasmanian Representative, Australia - China Society Study Tour Peoples Republic of China, 1973.
Various photographic awards including; Royal Horticultural Society, National Trust - Heritage 1982, 83, 84, 87.

Professional Experience:

April 1985 to present.
Self employed Architect, Urban Design Consultant.

Architecture

Dunne Alterations - West Hobart 2017- 2020
Morgan Dwelling - Midway Point 2016 - (ongoing)
Bennison Read Alterations/ Additions 2012
Given House, Marion Bay, Tasmania 2010 (unbuilt)
Andrews House, Taroona, Tasmania 2009 (unbuilt)
Dawson - Damer Alterations/Additions, Davey Street, Tasmania 2008 (unbuilt)
Egan House Alterations/Additions, Woodbridge, Tasmania 2007
Andrews House, Shelley Beach, Tasmania 2007 (unbuilt)
Andrews House, Spring Beach, Tasmania 2006 (unbuilt)
McDonald Dwelling, Dolphin Sands, Tasmania (since 2005)
Ellis House, Hays Flat, South Australia 2005 (unbuilt)
Buckland House, Richmond, Tasmania 2005 (unbuilt)
Café/ Tourist facilities – Woodbridge Tasmania 2004
Crocker House – Arthurs Lake Tasmania 2003
Clark House additions – West Hobart 2002 -3
Morgan House – Swanwick Freycinet Peninsula 2002
Vertigan Residence Alterations/additions – Mount Nelson Tas. 2001-2
Vaughan House and Workshop – Taroona, Tas. 2001
Turner House - Coles Bay. Tas. 1999 - 2000
Bennison / Read House - West Hobart 1999
Archer House - Whale Beach 1998 - 9
Morgan House - New Town 1997 - 8
Saltmarsh / Kelly House House, Battery Point 1997- 8
Touber/ Sullivan Alterations/ Additions - Sandy Bay 1996-7
Jetty Road Holiday Housing - Coles Bay 1995- 6 (unbuilt)
McCafferty Holiday Home -East Coast Tas. 1994- 5
Dunne House Alterations/Additions - Glenorchy 1995-6
Ferry Shelter/ Precinct design - Kangaroo Bay 1993-4
Hollybank Forest Training Centre - Lilydale, N.Tas. 1991-4
Kerr House alterations, New Town 1993-4
Russell House extension - Battery Point 1991-3
Thompson House addition – Dynnyrne 1992
Jackson Town House - Sandy Bay 1991
Ashwood House - Lauderdale 1989- 90
Woolley House addition - W. Hobart. 1988

Urban Design and Planning

Expert witness RMPAT / VCAT, for public and private clients since 1995.

Urban design advisor : UTAS Southern Futures - Central Hobart Masterplanning Project _ from November 2019

Consultant: from Jan 2019 : Queens Domain Context Study for the University of Tasmania

Urban design advisor : Northern Transformation Project Inveresk and West Park.
UTAS + JWA from July 2018

Principal Consultant: from Nov. 2017
Building Height Standards Review Project
Hobart City Council

Urban Design Principles. Re:set vision
Macquarie Point Development Corporation 2017

Principal Consultant: from July 2016
Building Height Performance Criteria Review
Hobart City Council

Principal Consultant: from Oct 2015
Bellerive Bluff Precinct Urban Design Framework
Clarence City Council

Principal Consultant: from July 2015
Hobart Civic Square Masterplan
Hobart City Council

Consultant: from April 2015
ACIPA Site Development Plan
University of Tasmania

Urban Design Advisor: from Nov. 2014
Macquarie Point Development Authority, Tasmania

Consultant: August 2014
IMAS Cove Floor Principles
UTAS

Consultant: February 2014
West Park Burnie, Urban Design Principles UTAS

Consultant: September 2013
Central Hobart Framework
UTAS

Consultant: July – Dec 2013
Glenorchy Central Area Review
GCC (with Inspiring Place)

Consultant: June 2013
Urban Design Principles, ACIPA project, Hobart
UTAS

Consultant: January 2013
Urban Design Principles, Inveresk, Launceston, UTAS
UTAS

Consultant: October 2012
Urban Design Principles, Melville Street, Hobart
UTAS

Consultant: June 2012
Urban Design Framework, Elwick Bay, Wilkinsons Point GCC

Consultant: March 2012
Urban Design Principles / assessment – Cadburys Peninsula GCC

Consultant: Nov 2011
Urban Design Framework, 601 Brooker Highway
GCC

Consultant March / July 2011
Statement of Significance, Concrete Aprons.
Sullivans Cove SCWA

Consultant January 2011
'View Code' scoping paper + assessment
SCWA

Consultant September 2010
Revised Site Development Plan
Princes Wharf No. 2 (IMAS) UTAS

Consultant May 2010
Review SDP / CP Princes Wharf 1 + 2, (2000)
UTAS

Principal Consultant 2008
Highfield House Pre Feasibility Study
DHHS, Housing Tasmania

Principal Consultant 2005/ 6
Urban Design Standards / Implementation Project
City of Hobart. Tasmania

Consultant 2006 / 7 (2009)
Kangaroo Bay Urban Design (with Inspiring Place)
City of Clarence, Tasmania

Consultant 2006
Wilkinson's Point Urban Design Framework
(with Inspiring Place)
City of Glenorchy, Tasmania

Principal consultant 2004
Heritage Council of Tasmania
Central Launceston Urban design guidelines

Principal consultant 2004
Heritage Council of Tasmania
Central Hobart Urban design guidelines

Principal Consultant 2003
Urban Design Principles Project
City of Hobart. Tasmania

Principal Consultant 2002-3
West Hawthorn Morphology Study
Strategic Planning Department, City of Boroondara.
Melbourne, Victoria

Urban Design Consultant 2002
Public use assessment Princes Wharf No.1 (with Rees) Department of State Development, Hobart
City Council, Hobart

Principal Consultant 2002
Kew Cottages. Site Precinct (Morphology) Study
Urban and Regional Land Corporation, Melbourne, Victoria

Expert urban design witness (VCAT) 2002
Multi unit development, 115 Cotham Road, Kew,
for the City of Boroondara. Melbourne, Victoria

Consultant 2001- 2
Tooronga Village Precinct/ Cotham Road sites
Strategic Planning Department, City of Boroondara. Melbourne, Victoria

Consultant 2001
Porter Hill Urban Design and City image assessment
Regional subdivision assessment for the Hobart City Council

Consultant (with Shelton) 2000
Gardiners Creek/ Tooronga Road Precinct
Urban Design Study and Framework, City of Boroondara, Melbourne

Principal Consultant 2000/ 2001
Department of State Development, Wapping Implementation Committee
Precinctual guidelines and Site development plans
Parcels 4 + 5, Wapping, Hobart

Consultant 2000
Site Development Plan Princes Wharf 1/2 , Sullivans Cove (with Shelton)
Department of State Development, Hobart

Adviser / Specialist Consultant 1998
Premier and Cabinet and Resource Planning and Development Commission
To assess project of state significance- Oceanport p/l, Princes Wharf, Hobart

Principal Consultant 1997- 8
North Hobart Design Guidelines for Private Development
Hobart City Council

Consultant 1996
Urban Forests Strategy, Hobart Metropolitan Area (with deGryse + others)

Princes No1. Redevelopment proposal, Sullivans Cove, Hobart (with EHW+ B)

Wapping Redevelopment, Hobart. Additions to outline dev. plan (with McNeill)

Consultant 1994-5
Denton Corker Marshall Pty Ltd (Singapore)
KKIP New Town Conceptual Development Plan, Sabah, Malaysia
Urban Design and Planning consultant

Principal Consultant 1994-5
Feasibility Study "The Springs" Mount Wellington, Tasmania
Tourism accommodation and Interpretation centre

Sub Consultant 1995
Resource Design and Management p/l
Jetty Area Master Plan - Coffs Harbour NSW
Critical review / guidance - Urban design structure plan

Consultant 1995
Radburn Housing Stock Analysis and Design Review, Rokeby
DCHS. Housing Services Division

Sub consultant 1994
Landscape strategy : Tasman Highway / Davey Street / Entry to City of Hobart
Sullivans Cove Development Authority

Consultant - 1993
Glenorchy Urban Program Group, (for Dept. Community / Health Services

Building Better Cities , Tolosa St. Glenorchy- Site Development and Planning

Consultant - 1993
TPSA Proposed Development Feasibility Study
Tas. Public Service Association, Molle Street, Hobart.

Principal Consultant - 1992
Hobart City Council - North Hobart Townscape Project
Community consultation, Urban Design Guidelines & Management Plan

Consultant -
City of Clarence - Medium density housing - Design Guidelines Assessment and Brochure

Consultant- 1993
Department of Construction (Tas.)
Elizabeth College Urban design Guidelines- Technology wing

Sub - Consultant - 1992
Environmental Impact Assessment - Telecom (DOTAC) Review of Broadcasting facilities on Mt. Wellington

Consultant - 1992
Department of Construction (Tas)
Drysdale House (Hobart) Hospitality College - Precinct Study

Consultant - 1990-1
Hobart City Council - Hobart Central Area strategy - Townscape / Urban Design study and topic paper.

Consultant - 1991
Beaconsfield (Tas.) Townscape Study.
Public participation /Townscape assessment and design guidelines.

Sub-consultant - 1990
New Norfolk Council - Glebe Road Development Plan. Urban Design and architectural guidelines.

Sub- consultant 1990
Denton Corker Marshall p/l, London
Development proposals/ guidelines

Consultant - 1990
Clarence City Council - Bellerive Village Image Study

Consultant - 1989
City of Glenorchy Housing Manual - design application. Planning Appeal documents.

Sub -consultant - 1988
City of Glenorchy Housing Stock assessment Study.
Case Study analysis and application.

Principal consultant - 1987
Sullivans Cove Development Authority. Hobart
Sullivans Cove Urban Detail and Bi-Centennial Walking Trail Study.
Spatial Analysis and Design Manual.

Sub - consultant - 1987
Denton Corker Marshall p/l Tsuen Wan Area 35, Hong Kong.
Urban design analysis proposals and working paper.

Sub- Consultant - 1986
River Derwent Management Plan - Site analysis / design proposals.

Consultant - 1985-6
Hobart City Council - Heritage Listings Study.
Conservation and Buildings register Analysis

Graphics :

Consultant -Clarence Council -
Interpretation information and design 1994
Signage Strategy/ Guidelines 1992-3
Regional Tourism Signage Design 1986
Planning Scheme Exhibition / graphics 1989
Consultant - Hobart City Council -
Battery Point Planning Scheme Exhibition 1986
Hobart Rivulet Linear Park 1988-9
Interpretive environmental signage and brochure.
Consultant - Forestry Commission Tasmania 1990
Signs Manual for all Commission sites.

Photographics :

Commissioned work for select architectural clients, govt. agencies and publications.
Architecture from the Edge - The twentieth century in Tasmania (2002) Montpelier Press. McNeill (author) Woolley (photographer). Photographs have also been published in combination with urban design studies and reports produced by the author including KKIP, Sabah, Malaysia (1995), State of the Environment Report, Tasmania (1996) Arch. Review - Australia (1997) Architectural Review (UK) (1998), Architecture Australia (1999, 2007, 2014) Tasmanian Life (2007) Sullivans Cove Waterfront Authority (2005, 2007, 2008, 2010) RAIA (2010, 2012, 2014) Selected images acquired by the Mitchell Library, Sydney, Hobart City Council, Hobart.

Lecturing /public speaking:

Numerous lectures to professional + public audiences: Recent public lectures include:

November 2019 : Speaker : International Urban Design Conference , Hobart, Tasmania

April 2019 : Invited speaker : Churchill Fellows National Convention, Hobart. Presentation / paper : 'Maintaining intelligible topographies'.

September 2017 : Paper : 'Orientation + Outreach: aligning urban futures' UIA World Congress of Architects Seoul, Korea

November 2016 : Scaling Hobart : Urban Form of the City Centre _ RAIA / UTAS

February 2015: Joske Interdisciplinary Colloquium UTAS: 'Human Complexity'

August 2014: 'Whose City?' Writers Centre, Public Forum / speakers series

March 2014: Convenor : Tasmanian Architectural Narratives, Bruny Island, Tas.

April 2012: 'Designing Place' International Urban Design Conference, Nottingham UK

January 2012: Interdisciplinary Colloquium UTAS: 'Human Presence'

March 2011: Keynote speaker: PIA National Congress, Hobart

January 2010: Tasmania: Culture and Environment Workshop UTAS

January 2010: Interdisciplinary Colloquium UTAS : 'Human Hope'

June 2009: Launch/ review 'Famous Reporter # 39', Hobart

Sept 2008: Invited speaker, Premiers Fuel Summit. Launceston, Tasmania.

May 2007: Principal presenter. Conversation in the Cove

Paper : 'Harbouring Design' SCWA. Hobart
November 2006 Invited speaker, 'Challenge and Change' Australia ICOMOS Conference, Fremantle WA

August 2005 Invited speaker,
Claiming Ground National Public Art Conference, Hobart

April 2005 Keynote speaker
The Built Environment – the next 10 years. National BDA conference

April 2004 Invited speaker
'States of Mind' Conference National Architecture Students Conference

November 2002 Invited keynote
Leo Port Lecture University of Sydney, NSW

July 2002 Selected Speaker
UIA Berlin 2002 XXI World Congress of Architecture, Berlin

March 2002 : Invited presenter.
Wild Cities/ Urbane Wilderness Symposium, Launceston, Tas.

Speaker: International Cities and Town Centres Conference. Hobart. Sept 2000

March '99. 'Millstone to Touchstone : The Business of Place in Tasmania'. Hobart

Speaker: April 1997. Second International Symposium of Asia-Pacific Architecture.
'The Making of Public Place' East West Centre Uni. of Hawaii, Honolulu

Invited national speaker:
Morphe 97 Biennial Architectural Students Conference Geelong, July 1997

Convenor : Urban Design in Tasmania Seminar for Commonwealth
Dept. Housing and Regional Development. Jan-Feb 1996

Academia:

Part- time lecturer:
University of Tasmania, School of Urban Design/ Architecture
Design Studio 1985 - 1990
Urban Design/Planning Elective Studio 1988 - 96
Visiting assessor and studio critic. 1985-98

Adjunct Professor School of Architecture and Design UTAS (2008 – 17)

General:

2015 January Invited participant. Interdisciplinary Colloquium 5. On 'Human Complexity', Hobart

2014 September Travel / study: France, Spain, Japan. Urban design initiatives

2014 May Conference/ study: Oxford University, UK. 'Modernism v Brutalism - 20c British Architecture'.

2013 May Travel / study: Japan, China, UK, France. Urban regeneration

2012 April/ May Travel / study/ conference: Germany, UK, Switzerland, Czech Republic, Japan Paper: 'Sheltering Human Presence' Nottingham, UK

2012 January Invited participant. Interdisciplinary Colloquium 4. On 'Human Presence', Hobart

2011 National Urban Policy / Urban Design Protocol: RAIA State Representative.

2010 January Invited participant. Interdisciplinary Colloquium 3. On 'Human Hope', Hobart

2010 May / June Travel/ study: Denmark, France, UK. Civic waterfronts

2007 April / Sep. Invited participant: 'About Face 07 ' National Architectural Design Competition.

2006 JuneTravel/ Study UK / Italy. Ongoing analysis of civic space within port cities.

1999 April / July Churchill Fellowship: Analysis of port cities with strong topographies including Wellington, San Francisco, Seattle, Vancouver, Halifax, Montreal, Oslo, Bergen,+ UK

1990 May/Aug. Travel / study / work (London) Vancouver+, Victoria+, London, Helsinki+, Singapore. Investigation of urban design initiatives in regions similar to Tas. (+)

1986 Jan/ Feb. Travel/ study. U.K., Italy, Hong Kong. Investigation medium density housing.

1981- 1985 Assistant Architect / Planner Urban Design Officer (from 12/82) Department of Planning and Development, Hobart City Council.

1983 June- Nov. Travel / study: United Kingdom, Europe United States of America, China, Japan. Particular investigation within U.K. and U.S.A. of local government approaches to conservation planning, urban infill, waterfront re-development and design review of historic precincts.

1980 Consultant; National Parks and Wildlife service. Analysis of National Estate site Kangaroo Bluff Battery - conservation and management guidelines.
Report; Kangaroo Bluff- Bastion of the Derwent.

1980 Graduate Diploma of Architecture (TCAE) Architectural Thesis - The Urban Image- Architecture as Communication.

1979-80 Architectural Assistant, Department of Housing and Construction. Hobart Police Headquarters Brief Team. Report; Image Study of Tasmanian Police Perceptions.

1978 Assistant News Editor: The Architects Journal - London. UK.

1977 Architectural Assistant- Properties Services Agency, Croydon, UK. Member of team planning and documenting government facilities.

1977-8 Study/ Travel - Europe, USSR, USA.

1977 Project Officer; Community Youth Support Scheme, Walkabout Workshop Project, Glenorchy , Tasmania. Formulation and management of community design project for disabled and unemployed people.

1976-7 Editor/ publisher - Tasmania Free Press, Hobart. Community based newspaper with emphasis on local urban issues.

1975-77 Architectural Assistant - Howroyd and Forward, Architects, Hobart.
Architectural documentation and analysis.
Studies of National Estate sites and buildings.

1974 B.A. (Environmental Design) - Major Study: Evolutionary Paths and Environmental Awareness.

1973 Study Tour to Peoples Republic of China.

Assistant: Department of Architecture and Planning. Hobart City Council.

1971-3 Student, School of Environmental Design, Tasmanian College of Advanced Education.Hobart, Tasmania.

1953 Born Hobart, Tasmania.

Publications:

In addition to studies and reports published from the fore mentioned, articles and refereed papers have been published in Architectural Review (U.K.) Architecture Australia, Architectural Review Australia, The Architects Journal, (UK) ,'Island' Literary Journal, 'Houses' magazine, Architecture Bulletin (NSW), Archetype, Commonplace Exhibition catalogue, National Urban Design Proceedings RAIA, and Historic Environment (June 2009). Placing Tasmania, in: Urban Voices - Celebrating Urban Design in Australia (2013)

Conference proceedings/ articles: Designing Place: International Urban Design Conference Nottingham, UK. Resource Architecture: UIA World Congress of Architecture Berlin 2002 (Birkhauser), Claiming Ground, National Public Art Conference, Wild Cities/ Urbane Wilderness, (Launceston, Tasmania), 'Challenge and Change - in ports, their towns and cities' ICOMOS (Fremantle), 'The Making of Public Places' (Hawaii), Eco Design Conference papers (Melbourne, Victoria).

Reviews of work have been published in Architectural Review (UK), Architecture Australia, The Bulletin, Architecture from the Edge, (McNeill/ Woolley, Montpelier Press 2002), Picturing Architecture (Luscombe 1992, Craftsman House), Contemporary Houses Down Under (Crafti, Images, Melbourne 2006, 2009) Mastering Architecture (Leon van Schaik, Wiley, London 2005) 'About Face' (Sydney 2007) Practice of Practice 2 (RMIT 2010) National television, National Radio and local newspapers.

Leigh is listed in the Australian Encyclopedia of Australian Architecture (ed. Goad and Willis) Cambridge University Press 2012.

Exhibitions:

Civic Square Hobart Masterplan, Public Exhibition HCC Dec 2015 – Jan 2016

Un-Packing Architecture. TMAG Hobart May 2009

Venice Biennale Contributor Australian Exhibition 'Abundant', Venice 2008

'Model, Model' RAIA Tas. Chapter Exhibition, Hobart 2008

'About Face' 2007 Invited Competition and Exhibition, Sydney 2007

'Articulating the Edge: Spatial prospecting to build topography'. Masters exhibition / Examination, The Artery, Fitzroy May 2004

UIA XXI World Congress of Architecture, Poster Exhibition, Berlin, July 2002

'Architecture from the Edge – The Twentieth Century in Tasmania' – Hobart 2002

Windsor Court Housing Competition. Hobart, February 2002

40 UP Australian Architecture's Next Generation - Sydney 1999, Berlin - 2000

RAIA Awards program - State and National 1990 - 2004

Wapping Housing Competition , Hobart Dec 95 - Feb 96

InterDesign Workshop Exhibition. Tasmania 1995

North Hobart Townscape Project Exhibition Town Hall Hobart 1992

Hollybank Design Competition Exhibition. Hobart/ Launceston 1991

Birmingham Int. Design Competition -July '89 (Birmingham and London- 1989 - 90)

International Antarctic Centre Competition - Hobart / Sydney 1989

Taylor Square Ideas Competition - Sydney 1987

Sullivans Cove Ideas Competition. Hobart / Launceston, 1986

Hobart Conservation Study - 'Safegarding our heritage' (HCC) 1982

Hobart Architecture (1900-1945) , Hobart Arch. Co-op 1982

' Lost Hobart ' Hobart Architectural Co-operative. 1981

'A glimpse of China' - photographic exhibition. Hobart 1974

From: Genevieve Lilley
To: UDAP Panel
Subject: Urban Design Advisory Panel - nomination
Date: Wednesday, 4 November 2020 12:19:29 PM

Hi Neil

After considering this, I'd like to nominate myself as a potential candidate for the UDAP

The reason for this is because as well as sitting on Chapter Council at the Institute of Architects (who've urged lots of us to apply), I also sit on the Tasmanian Heritage Council (for more than three years), and also chair the Works Committee for Heritage Tasmania (which I've done for 2.5yrs).

I just thought it might be helpful to have someone sitting on the panel who can be a link between HCC's process and the HT process. There always seems to be a lot of hysteria around what HT does/doesn't do, and frankly there are a lot of times when HT can't do anything except comment within a very limited framework (ie the listed bit). I know there are currently rumblings from the AIA about the disjunct between HCC's heritage advice and HT's advice, and I think that if the UDAP could have both perspectives included at the table, this presents a pretty unified front to all applicants, particularly developers

My roles on these other bodies would mean there are times when I join the discussion but possibly can't vote, but I still think my input could be valuable. I do a lot of consulting and writing and judging as well as practising - last year I advised Burnie Council on their appointment process for the architect for their new major arts centre, and helped the RAST select their architect for the Hobart Showgrounds redevelopment. I sit on the AIA National Heritage Committee and the Tasmanian AIA Enduring Architecture Taskforce and the Open House committee. I am particularly interested in adaptive re-use, infill and regeneration - the tricky issues (I have a rural property at Cradle Mt in which I've restored old buildings for re-use). I don't do a lot of work in Hobart (besides Ten Lives Cat Centre and alterations to a few small local-heritage-listed houses) so its extremely unlikely that any of my work would come for assessment before the panel.

Hobart has only been my home for the last 7 years, but its an exceptional city. I think its immediate future (the next decade) is critical, while it grapples with increased interest/population/development. I'd love to be involved and help shape it somehow. It may not be that I'm an appropriate fit, but just in case I could contribute usefully, I enclose my CV

Please don't hesitate to contact me if you have any queries or need other information or references

Thanks
Genevieve Lilley
B Arch (Hons) AIA
gl@genevievelilley.com

Genevieve Lilley Architects Pty Ltd

[redacted]

Nominated architect
TAS#CC6119J NSW# 7494

[redacted]

Have a look at our Cradle Mountain House, now a holiday rental
https://www.airbnb.com.au/rooms/16678799

Genevieve Lilley Architects [redacted]

Curriculum Vitae

Genevieve Lilley

B Arch (Hons) AIA

ARB # 7494 TAS#CC6119J

About

Genevieve Lilley graduated from the University of Sydney in 1991 with the University Medal and left Australia soon after under the auspices of the two-year Marten Bequest. She lived briefly in Spain and Italy before settling in the UK, where she worked for 8 years with renowned British architect, Sir David Chipperfield, on a variety of public, private and retail commissions. In her time there, she worked on numerous civic projects, including projects in the UK (including the Natural History Museum, and the River & Rowing Museum at Henley on Thames), in Italy (Dolce e Gabbana shops worldwide), and in Germany (the Neues Museum competition in Berlin and the Grassimuseum in Leipzig). Genevieve established her own practice in London in 1999 in Sydney in 2005, and moved to Hobart in 2013.

Her practice specializes in a range of small to medium scale projects, generally characterized by their quirkiness, and usually involving the adaptive re-use of existing buildings (both historic and modernist). She sits on the Tasmanian Heritage Council (a position held since 2016), and has chaired the Works Committee for Heritage Tasmania since 2017. She sits on the Australian Institute of Architects Tasmanian Chapter Council, the AIA's 20thC listing/recognition taskforce (at state and national level), and the Open House Committee.

Genevieve has taught architecture and construction at universities in Bath UK, Sydney, Tasmania and Newcastle for many years and has also been a guest speaker, critic and external examiner and competition judge on many occasions. She sat on the AIA NSW Awards jury in 2009 and 2011, the DIA National Awards in 2015, and chaired the AIA Tasmanian Awards Jury in 2017. In October 2019, she was appointed by Burnie City Council to assist in the selection of the architect for their new $13m art gallery, and also by RAST to assist in the appointment of a masterplan architect for their Hobart showground site.

Genevieve's design work has featured in publications including the Sydney Morning Herald, Inside Out Magazine and Vogue Living. She has written for the Fifth Estate, the Architectural Review, Architecture Australia, Houses Magazine and Artichoke. Her awards include the Board of Architects of NSW Medal 1991, the Sir John Sulman Prize (design) 1990 & the CHL Turner Memorial Prize (design) 1990.

Professional Qualifications

Registered as an architect in Tasmania 2013, registered in NSW 2006

Completed AACA Exam in Architectural Practice 2005

Registered as an architect with the ARB, 1997 (UK)

Completed RIBA Part III through the RIBA Education Department, June 1997 (UK)

Awards

Architecture

- First class Honours, University Medal 1991, University of Sydney
- Board of Architects of NSW Medal 1991
- Sir John Sulman Prize (design) 1990
- CHL Turner Memorial Prize (design) 1990

Jewellery

- JAA Award for Best Opal design 2008
- JAA Award for best opal design 2006, also runner-up with 2nd piece in same category 2006

Current/past Roles

- Member of the Tasmanian Heritage Council 2016 - present
- Chair of the Works Committee for Heritage Tasmania 2017 - present
- Chapter Councillor for the AIA Tasmanian Chapter 2017- present
- Member of the NSW Heritage Committee 2016 - 2019
- Chair of the Board of Living Room Theatre 2013- 2019
- AIA National Heritage Committee (and state AIA Enduring Architecture Taskforce since 2017)
- Member of the AIA National Gender Equity Committee 2017-2019
- London Diocesal Advisory Committee as advisor on contemporary architecture 2001-2002

Teaching

- External Examiner, University of Tasmania 2014, 2008, 2007
- Final year design studio, University of Sydney 2009, 2008, 2007, 2006, 2005, 2004
- Final year design studio, University of Newcastle 2011, 2010
- Guest critic UNSW, UTS 2009

Writing

- Houses Magazine: Review of Benn & Penna's practice September 2020 https://architectureau.com/articles/benn-and-penna/
- Houses Magazine: Review of Studio Takt's Cloud House March 2020
- https://www.scribd.com/article/454331890/Cloud-Cottage-By-Takt-Studio
- Houses Magazine: Review of Terroir's Castle Cove House October 2019
- Artichoke: Review of Supercontext's Balgowlah 'Substation kindergarten' June 19
- Architecture Australia: Review of Liminal's 'Freycinet Pavillions' November 2018
- Houses Magazine: Review of Fergus Scott's' practice March 2017
- Houses Magazine: Review of Collins & Turner's Balmoral House February 2017
- Houses Magazine: Review of Andrew Burges' North Bondi House October 2016
- Houses Magazine: Review of Benn & Penna's Surry Hills House July 2016
- Houses Magazine: Review of Eva Marie Prineas' practice June 2016
- Houses Magazine: Review of Nobbs Radford practice April 2016
- Architecture Australia: Review of David Boyle Marrickville '3 Houses' Nov 2015
- Houses Magazine: Review of Tim Greer TZG project November 2015
- "The Terrace House – Reimagined for the Australian Way of Life", Thames & Hudson, Oct 2015
- Architecture Australia: Review of Fugitive Structures at SCAF September 2015
- Houses Magazine: Review of David Boyle Marrickville house September 2015
- Houses Magazine: Review of Virginia Kerridge house Kensington July 2015
- Houses Magazine: Review of Prineas project July 2015
- Houses Magazine: Review of Co-Op Annandale House May 2015
- Houses Magazine: Practice profile Carter Williamson March 2015

- Houses Magazine: Hannah Tribe, McMahon's Pt house Feb 2015
- Architecture Australia: Platform Profile on Welsh and Major, Jan 2015
- Houses Magazine: Profile on the work of Tobias Partners Dec 2014
- "The Forever House – Time-Honoured Australian Homes", Thames & Hudson Oct 2014
- Houses Magazine: Review of Balmain House by Candelapas October 2014
- Houses Magazine: Review of Lindfield House by Andrew Burges July 2014
- Houses Magazine: Review of Hunters Hill House by Arkhefield Feb 2014
- Houses Magazine: Review of Fern Tree House by McGlashan Everist May 2013
- Houses Magazine: Review of Balmain House by Melocco/Moore July 2013
- Houses Magazine: Review of Balmain House by Innovarchi May 2012
- Architecture Australia 'Detail' March 2013
- Architectural Review/Australian Design Review 'Boomerang Beach House' April 2010
- The Fifth Estate, articles July/Aug/Oct/Nov 2009, March 2010
- Art Review for Michael Reid Art March 2006

Jewellery Design (as Venerari)

Since 2004 she has been a designer/director for the Sydney-based jewellery business, Venerari, which specializes in modern jewellery using coloured gems. Although the Strand Arcade store closed in 2013, she continues to design bespoke modern jewellery commissions for clients around the world. She was awarded the JAA Award for Best Modern Opal design in 2006 and 2008

Cradle Mountain House for Holiday Stays

In 2011, she purchased 104 acres of rare alpine rainforest between Moina and Cradle Mountain. She has slowly restored a sawmiller's cottage into the most successful self-catering Airbnb in the area. She is therefore passionate about the north-west of the state and closely follows all development in the region

https://airbnb.com/h/cradlemountainhouse

Press

Architectural only

- Sydney Morning Herald Domain "Lake Macquarie Dream Home Hidden away" by Trish Croaker about Lake Macquarie/Summerland project, 31.08.14
- Sydney Morning Herald Domain "Treasuring the Landscape of the Past' by Trish Croaker, about Queens Park house, 22.02.13
- Sydney Morning Herald Domain "Rear window – Home & Away Design Trends', by Stephen Crafti on Hurlstone Park house, 07.06.13
- Sydney Morning Herald Domain "Hemmed in House Now Flooded With Light" by Trish Croaker about Birrell St House, 14.10.12
- Sydney Morning Herald Domain "Human Evolution" by Stephen Craft on Sutherland St house, 03.05.11
- Sydney Morning Herald Domain "Classic in a New Light" on Glebe house, 01.08.09
- Sydney Sun-Herald "Stripped to the Bones" on Cascade St house, 15.7.07

About interiors

- Inside Out, Jul 06
- Vive profile by Kirsty Munro, Jan 08
- Sydney Magazine by Margi Blok, Apr 08
- Madison, Nov 08

About being an architect and a jeweller at the same time

- "Crafting the Idea" Architecture Australia, Jul 13
- Vogue Living, Nov/Dec 07
- SMH Spectrum 13-14, Nov 10

About Jewellery

- Monument Issue 76 "From Big Things Little Things Grow" by Marg Hearn, Dec 06
- Jeweller, Dec 06

Speaking

Keynote speaker, 2018 LGAT conference, Hobart and Pint of History (about adapting abandoned buildings) Hobart 2018

Speaker AIA Regional NSW conference 2016 and Speaker RAIA Sydney 2008

Design Island speaker Hobart 2007 and 20-20 speaker 2012, Sydney

Professional Experience in Australia

Own Practice, established Sydney 2005, additional office in Hobart 2013

www.genevievelilley.com

In Tasmania

Adaptive re-use of sawmillers house, Cradle Mountain. Restoration of various state- and locally-heritage-listed properties in Hobart (recipient of 2014 Hobart City Council heritage grant). Adaptation/restoration of mid-century houses, New Town. Masterplan for Ten Lives Cat Centre. Fit-out of Hobart Eye Surgeons Kingston

In NSW

Modern alterations/additions to numerous residential properties in conservation areas. As visible on the website. Work to several shops in the Strand Arcade and Sofitel Wentworth Arcade. Michael Reid Gallery shop, Murrurundi

Professional Experience overseas

Sole Practice London 1999-2002

Numerous residential projects, notably in Westminster, Camden and Kensington & Chelsea boroughs

Solid timber furniture & offices for Hales Gallery, furniture collaboration work with Retrouvius Reclamations, using salvaged building materials

The Place Below crypt restaurant/café refurbishment, St Mary-le-Bow. Fit out of chambers, Pump Court, Middle Temple, and fit-out of 5,300 sq. ft. office for IT company, including large custom-furniture package

Advisor on modern art/architectural interventions to the Diocesal Advisory Committee for the care of (Church of England) churches, Greater London

David Chipperfield Architects, London 1992-1999

One of three senior associates, directly responsible for all 50 staff, with a team of 14 working personally for me. Associate/architect in charge of the following projects:

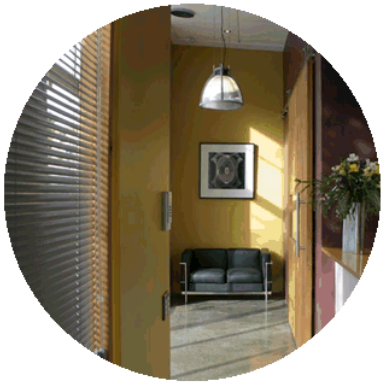
Completion & fitting out of the new River & Rowing Museum, Henley-on-Thames, Oxfordshire, UK (a £9 million project) 1997-1999, and refurbishment of the Grassimuseum, Leipzig (an £40 million project over 10 years) 1994-1997. Design for new £3 million visitor centre below the Albert Memorial, London for English Heritage, 1995-1996, Central Hall & Wonders Gallery, Natural History Museum, London 1992-3

Dolce & Gabbana flagship store in Milan, Miami, Moscow, Bond Street (London), Porto Cervo (Sardinia), Kyoto, and elsewhere. Design/documentation of Equipment shirt shop, Tokyo 1993 and travelling bookstands for Phaidon Press, 1992-1996. Documentation of a gem shop, Natural History Museum, London 1992-3

Cornerhouse Arts Cinema, Manchester (a £1 million refurbishment) 1997-1998

Design and Execution of Circus Bar and Restaurant, Soho, London 1997, and Wagamama, Lexington Street, London 1996

Work on the competition for Tate Modern, London and on the winning competitions for the Venice Cemetery and the Neues Museum Berlin



Our vision is to transform ideas, through an engaging creative process, into quality architecture that supports, inspires and delights, for positive environmental and community impact, and a sustainable future.

ABOUT US

Morrison & Breytenbach Architects

enriching lives - enriching place

Morrison & Breytenbach Architects is a versatile and well-recognized award winning practice based in Hobart, with a wide range of successful examples of urban design and architectural projects to our name.

We bring a skill set that includes exemplary design and local industry knowledge.

Directors James Morrison & Yvette Breytenbach migrated to Australia in 1991 and settled in Hobart where we established our architectural practice. We bring worldwide cultural and architectural insight and experience to our practice, gained in South Africa, U.K. and U.S.A.

Our vision is to make a positive and exemplary impact in the built environment and the community through leading, relevant and transformative excellence in architecture. Inspired by the context, the brief and the budget of each new project, we produce award-winning architecture that creates a unique and memorable user-experience. We strive to play a leading and holistic role in contributing to a sustainable, energy efficient and transformative outcome for Australia's future built environment and communities.

Morrison & Breytenbach Architects applies creative enquiry and analysis to challenge the norm, explore and express unique project opportunities, and to develop diverse and appropriate architectural solutions, through an interactive, and collaborative design process. We combine vision, innovation and value with creative problem-solving skills, efficient planning, rigorous technical detail, and responsible use of materials.

The practice holds Third Party Quality Assurance Certification to the requirements of ISO9001:2015 Quality Management Systems for Architectural Services and pre-qualification as an approved consultant – Architecture with the Tasmanian Department of Treasury and Finance.

Both directors and all professional staff are members of the Australian Institute of Architects (AIA). Being an AIA A+ registered practice we comply with AIA Continuing Professional Development (CPD) requirements, which keeps us informed and inspired by relevant, up to date information and skills.

AWARDS

Morrison & Breytenbach Architects

UTAS The Media School

Commendation for Education
AIA Tasmanian Chapter (2020)

UTAS Inveresk Student Residences

Winner Built Environment
Green Gown Awards Australasia (2017)

Commendation for Residential Architecture Multiple Housing *AIA Tasmanian Chapter (2016)*

Winner Engineered Timber Products
Australian Timber Design Awards (2016)

Highly Commended Multi-Residential
Australian Timber Design Awards (2016)

Environmental Development Award
Australian Property Institute (Vic/Tas Division) (2016)

Property Industry Award - *Australian Property Institute (Vic/Tas Division) (2016)*

Finalist - *Australasian Green Gown Awards (2016)*

Moonah Arts Centre

Alan C Walker Award for Public Architecture
AIA Tasmanian Chapter (2015)

Colorbond Award for Steel Architecture
AIA Tasmanian Chapter (2015)

Ptunarra Child and Family Centre

Educational Architecture Award
AIA Tasmanian Chapter (2015)

Sustainable Architecture Award
AIA Tasmanian Chapter (2015)

Chigwell Child and Family Centre

International Winner New Construction: Major Facility
The Council of Educational Facility Planners International (CEFPI) International Education Facilities Awards (2013)

International Project of Distinction
The Council of Educational Facility Planners International (CEFPI) International Education Facilities Awards (2013)

40 Brisbane Street

Multi-residential Commendation
AIA Tasmanian Chapter (2013)

Sustainability Learning Centre

Sustainable Architecture Award
AIA Tasmanian Chapter (2013)

Commendation for An Education Initiative or a Design Solution for an Innovative Program
The Council of Educational Facility Planners International (CEFPI) International Education Facilities Awards (2013)

Tarremah Hall

National Commendation for Sustainable Architecture
AIA National (2011)

Public Building Award
AIA Tasmanian Chapter (2011)

Sustainable Architecture Award
AIA Tasmanian Chapter (2011)

Winner Australian Certified Timber
Australian Timber Design Awards (2011)

Environmental Development Award
Australian Property Institute (2011)

Balamara Street Housing

Special Purpose Housing Project of the Year
HIA (2011)

93A Hill Street Adaptive Re-use / Conversion

Residential Commendation
AIA Tasmanian Chapter (2009)

Rosny Historic Centre

Heritage Award
RAIA Tasmanian Chapter (2007)

Windsor Court Housing Redevelopment Project (Walford Terraces)

Certificate of Merit in Urban Planning
PIA (2002)

Winner
Government Environmentally Sustainable Housing Competition (2001)

House McGregor

Residential Award
AIA Tasmanian Chapter (2001)

From: Jennifer Nichols
To: Cassandra Ross
Cc: Fiona McMullen
Subject: RE: Urban Design Advisory Panel Nominations
Date: Monday, 7 September 2020 3:37:31 PM
Attachments: image002.png
image003.png
image004.png
image005.png
image006.png
image007.png
President"s Prize - short citation.docx

Hi Cassandra,

On behalf of the Australian Institute of Architects Tasmanian Chapter I wish to put forward Keith Drew as our nomination for the Hobart City Urban Design Advisory Panel.

I have attached a short citation to give a background on Keith who recently was awarded the Presidents prize. Please let me know if you require anything further.

Keith's contact details are below;
Keith Drew
[redacted]

Kind regards

Jennifer

Jennifer Nichols
Executive Director Tasmania and International Chapter

Australian Institute of Architects
1/19a Hunter Street
Hobart, TAS 7000
[redacted]

Australian Institute of Architects
We respectfully acknowledge the Traditional Custodians of the lands on which we work and pay respect to their Elders past, present and emerging.

[redacted]

President's Prize 2020 – Keith Drew FRAIA

The 2020 President's Prize recognises an individual who has made a significant contribution to the architecture profession in Tasmania through mentorship, advocacy and practice.

Born in Queensland, Keith studied at the Queensland Institute of Technology, winning the Board of Architects Queensland Prize in 1982 at the culmination of his studies. Soon after, Keith and his partner took a road trip to Tasmania and saw the old schoolhouse at Lachlan (now the Agrarian Kitchen). They loved it so much that they bought it and turned it into their family home.

At this time, Keith took a job at JAWS Architects (formally Jacob Allom Wade). Jamieson Allom remembers Keith, coming down from Queensland, and applying for a position and that they were 'very impressed with him'.

'He confirmed our initial impression, soon becoming an important member of the firm and later a director in the mid-90s.'

It was during this time that Keith began his involvement with the Australian Institute of Architects, initially as a graduate representative within the Tasmanian Chapter before registering as an Architect (No. 412) in 1987. He served on the Chapter's Professional Development and Practice Committees and was Tasmanian Chapter President from 1995–1996 and a National Councillor.

Soon after 2000, Keith left JAWS and moved to Melbourne for Bates Smart. But Tasmania was home, and he soon returned to start his own practice, Keith Drew Architects, which soon grew and, in 2006, became Xsquared Architects when he partnered with Peter Scott. In 2004 he was awarded a fellowship of the Australian Institute of Architects.

Co-workers speak of him as a very patient teacher and a people person. They note the respect he shows for colleagues and the high levels of trust and responsibility he gives them. In practice one of his key traits has always been that of 'building people up'.

Keith is an excellent all-round architect: adept at client relations, design, technical and contractual matters, construction issues, management and compliance. His favourite projects are usually community-based, either a school, a public building or designing for the vulnerable through health facilities.

Keith's expertise also extends beyond the realms of pure practice: he has long been examiner of choice for the local registration practice exams, he continues to support the PALS program as a knowledgeable tutor, and is a Tasmanian Chapter Senior Counsellor. Since 2009, Keith has been the Architects Accreditation Council of Australia (AACA) Architect Practice Exam Regional Convenor (Tas), and is currently the National Convenor, along with being a director of the AACA.

Keith is always open to a passionate discussion about architecture, and is often a hair away from pulling out a napkin or envelope to begin a diagram or drawing. Not many people have served their profession with the energy, professionalism and care that Keith has.

Congratulations, Keith, on being such a worthy recipient of the Institute's Tasmanian Chapter President's Prize for 2020.

From: Jennifer Nichols
To: UDAP Panel
Cc: Fiona McMullen; Shamus Mulcahy
Subject: Australian Institute of Architects - UDAP proxies
Date: Thursday, 5 November 2020 12:10:46 PM
Attachments: image001.png
image002.png
image003.png
image004.png
image005.png

Hi Sandy,

As I mentioned on the telephone the Institute would like to put forward the following proxies for instances when Keith Drew is not available for the UDAP panel;

Andrew Shurman [redacted]
Karen Davis [redacted]

Please let me know if you need additional contact details.

Kind regards

Jennifer

Jennifer Nichols
Executive Director Tasmania and International Chapter

Australian Institute of Architects
1/19a Hunter Street
Hobart, TAS 7000
[redacted]

Australian Institute of Architects

We respectfully acknowledge the Traditional Custodians of the lands on which we work and pay respect to their Elders past, present and emerging.

From: Jerry de Gryse
To: Cassandra Ross; UDAP Panel
Cc: Small Sue; Ben Stockwin
Subject: Re: Urban Design Advisory Panel Nominations
Date: Wednesday, 19 August 2020 4:02:52 PM
Attachments: image001.png

Dear Neal

On behalf of the Australian Institute of Landscape Architects (Tasmania) (AILA), I write to re-nominate Susan Small to represent our organisation on the City of Hobart Urban Design Advisory Panel.

We know that Sue has enjoyed her role on the panel and understand from feedback from the professional community that she has made a very positive contribution to its proceedings.

Thank you for the opportunity for AILA to contribute to design in our City. We know that landscape architecture has much to offer in the realm of urban design.

Please do not hesitate to call on me if you require anything further from AILA.

Regards
Jerry de Gryse
FAILA, AILA Chapter President

Landscape architects plan and design for life outside. Our traditions are age old, our profession youthful in spirit, our numbers growing. Founded in 1966, the Australian Institute of Landscape Architects leads the profession in its mission to sustain people and place.

From: Jerry de Gryse
To: UDAP Panel
Cc: Susan Small
Subject: TRIM: Re: Proxies
Date: Monday, 9 November 2020 4:50:55 PM
Attachments: image001.png

Sandy
Thanks for chasing this up.
AILA would like to nominate Edwina Hughes as our proxy for Susan Small in the event she is unavailable to participate on the panel.
Regards
Jerry de Gryse

Jerry de Gryse
Director

[redacted]

we work, live and play.
Limit your emails and reduce carbon

On Mon, Nov 9, 2020 at 4:42 PM UDAP Panel <udappanel@hobartcity.com.au> wrote:

> Good Afternoon Jerry,
>
> I am following up with the proxies for the UDAP Panel. If possible do you have names of people you would like to nominated.
>
> It would be preferable if you could advise us by tomorrow so it can be included in the report for Council.
>
> Looking forward to hearing from you.
>
> Kind Regards,

Urban Design Advisory Panel
Terms of Reference

The Urban Design Advisory Panel has been formed by a resolution of the Council to assist it in promoting quality urban design outcomes of significant developments within the City of Hobart.

1. Purpose

The purpose of the Urban Design Advisory Panel ('the Panel') is to

- Provide independent urban design advice promoting good design and a high quality urban environment.
- Provide advice to applicants on significant development in the central city prior to the lodgement of an application for a planning permit.
- Provide advice to the Council on formal planning applications for significant developments, limited to compliance with relevant urban design provisions of the Council's planning schemes.
- Provide urban design advice to the Council as it sees necessary on appropriate urban design controls and on both City of Hobart and privately initiated relevant planning scheme changes.
- Provide urban design advice to the Council on significant City of Hobart capital works projects.

2. Membership

Membership of the Panel is in accordance with the resolution passed by the Council at its meeting on 16 July 2012, being (6) members consisting of the Tasmanian State Architect (currently vacant), a member who currently holds an academic position in urban design, a nomination each from the Tasmanian Chapters of the Australian Institute of Architects and the Australian Institute of Landscape Architects (including proxies) a member with both planning and urban design expertise and a chairman with suitable urban design and public administration experience. With the exception of the State Architect members will be appointed for a period of three years and are:

- Required to declare if they have a conflict of interest and may not take part in any panel meeting for which they have declared a conflict of interest.
- Subject to confidentially requirements, that apply to City of Hobart staff and consultants

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Urban Design Advisory Panel
Terms of Reference

- Required to agree to these terms of reference as part of their contract with City of Hobart for specific services and terms.

Members will be paid a fee of $168 per hour for preparation, site inspections, attendance at meetings and finalising of minutes, with a maximum payment of $840 for the chair and $672 for all other members.

City of Hobart officers will also attend meetings of the Panel, providing secretariat support, advice on regulatory and specialist matters, and a communication channel to those involved in the subsequent decision making process.

3. Proposal Review

Design assessment criteria and or design guidelines in the relevant planning scheme will form the basis for an urban design panel review. They are only to be considered for formal planning applications. In the absence of criteria or design guidelines within the planning schemes, the Panel may look at the following matters for all other proposals where advice is being sought:

- Quality of the architecture and its contextual relationship to Hobart;
- Visual appearance and design principles including scale and composition, architectural details, articulation of facades and the treatment of rooftops;
- The relationship of the proposed development to street, public spaces and adjacent buildings and to the character of surrounding areas;
- The location of activities and their relationship to streets and public spaces particularly at the ground floor;
- The design of pedestrian and vehicle entrances and access to and around buildings;
- The relationship to existing heritage buildings and significant open spaces in the vicinity;
- The amenity and quality of outdoor spaces associated with the development;
- The integration of publically accessible artworks into the development;
- Circulation and servicing;
- Safety for users and pedestrians;

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Terms of Reference

- The design of buildings to maximise sustainability; for example in water heating, lighting, heating, natural ventilation, and stormwater reduction, treatment, storage and re-use, and building materials and life cycle;
- To ensure efficient energy use systems are utilised, both within the buildings and in relation to the entire development; and
- Ensure protection and conservation of listed heritage buildings, items and sites.

The Panel shall consider only those proposals that meet the following criteria:

- Proposals requiring planning consent that are located within the area covered by the *Sullivans Cove Planning Scheme 1997* and the *Hobart Interim Planning Scheme 2015 (*Central Business, General Business, Commercial and Urban Mixed Use Zones and when proposed developments exceed 2000 m^2 in floor area or 3 storey's in height).
- Any City of Hobart capital works project with a value of $1 million or greater, which is intended for public use, or to which the public have regular access and that the Council or the General Manager consider would benefit from receiving urban design advice.
- Any other development that a Director considers that the Council would benefit from receiving urban design advice.

4. Frequency and Location of Meetings

Meetings of the Panel are to be conducted on an as needed basis. The Panel members will be advised by email and will be given five (5) working days' notice.

Meetings will be closed to the public and the subsequent minutes are not to be distributed to any member of the public unless agreed to by the proponent or where the City of Hobart is legislatively obliged to do so.

Meetings will either be held in person at the City of Hobart offices or through video conferencing.

5. Meeting Administration

A quorum is obtained by the attendance of at least three members of the Panel. In the absence of the chairman, the Panel will elect an acting chairman.

City of HOBART

Urban Design Advisory Panel
Terms of Reference

The advice provided to both Council and Council officers will be provided with reasons based on agreement from the majority of members.

Minutes will be prepared by a Council officer and reviewed by the chairman to ensure a true and correct record of appropriate recommendations made at the meeting. The Panel's minutes will be circulated to the panel members, the proponent, the Lord Mayor, the Deputy Lord Mayor and Elected Members, the General Manager, the Director City Planning and the Manager Development Appraisal within 10 working days of the meeting.

Applicants/proponents are entitled to present to the Panel their proposal and answer questions from the panel in the interest of developing a better understanding of the proposal when considered prior to being lodged as a formal planning application.

6. Review of Terms of Reference

The Terms of Reference is to be reviewed at least every three years.

7. Last Updated

24/02/2020