CITY OF HOBART

AGENDA

Special City Planning Committee Meeting

Open Portion

Monday, 12 October 2020

at 4.00 pm

THE MISSION

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

THE VALUES

The Council is:

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

ORDER OF BUSINESS

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

APOLOGIES AND LEAVE OF ABSENCE

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Special City Planning Committee Meeting (Open Portion) held Monday, 12 October 2020 at 4.00 pm.

This special meeting of the City Planning Committee is held in accordance with a Notice issued by the Premier on 3 April 2020 under section 18 of the *COVID-19 Disease Emergency (Miscellaneous Provisions) Act 2020.*

COMMITTEE MEMBERS
Deputy Lord Mayor Burnet (Chairman)
Briscoe
Harvey
Behrakis
Dutta
Coats

Apologies:

Leave of Absence: Nil

NON-MEMBERS
Lord Mayor Reynolds
Zucco
Sexton
Thomas
Ewin
Sherlock

1. INDICATIONS OF PECUNIARY AND CONFLICTS OF INTEREST

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

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

2. 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.

2.1 APPLICATIONS UNDER THE HOBART INTERIM PLANNING SCHEME 2015

2.1.1 202 - 206 MACQUARIE STREET, HOBART AND ADJACENT ROAD RESERVE - NEW BUILDING FOR 40 MULTIPLE DWELLINGS, EDUCATIONAL AND OCCASIONAL CARE (CHILDCARE CENTRE), AND GENERAL RETAIL AND HIRE, BUSINESS AND PROFESSIONAL SERVICES AND FOOD SERVICES PLN-20-104 - FILE REF: F20/107319

Address:	202 – 206 Macquarie Street, Hobart and Adjacent Road Reserve
Proposal:	New Building for 40 Multiple Dwellings, Educational and Occasional Care (Childcare Centre), and General Retail and Hire, Business and Professional Services and Food Services
Expiry Date:	13 October 2020
Extension of Time:	Not applicable
Author:	Mark O'Brien

RECOMMENDATION

That pursuant to the *Hobart Interim Planning Scheme 2015*, the Council approve the application for new building for 40 multiple dwellings, educational and occasional care (childcare centre), and general retail and hire, business and professional services and food services, at 202 to 206 Macquarie Street, and adjacent road reserve, Hobart, for the reasons outlined in the officer's report and a permit containing the following conditions be issued:

GEN

The use and/or development must be substantially in accordance with the documents and drawings that comprise PLN-20-104 202-206 MACQUARIE STREET HOBART TAS 7000 - Final Planning Documents except where modified below.

Reason for condition

To clarify the scope of the permit.

TW

The use and/or development must comply with the requirements of TasWater as detailed in the form Submission to Planning Authority Notice, Reference No. TWDA 2020/00607-HCC dated 19/05/2020 as attached to the permit.

Reason for condition

To clarify the scope of the permit.

PLN s1

The palette of exterior colours and materials must be provided.

Prior to the issue of any approval under the *Building Act 2016* (excluding for 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.

PLN s2

A landscape plan must be prepared for the soft and hard landscaping of the site by a suitably qualified landscape architect.

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

All work required by this condition must be undertaken in accordance with the approved revised plans. Prior to occupancy, confirmation from the landscape architect who prepared the approved landscaping plan that the all landscaping works required by this condition have been implemented, must be submitted to the satisfaction of the Directory City Planning.

Reason for condition

In the interest of the amenity of the space.

ENG 12

A construction waste management plan must be implemented throughout construction.

A construction waste management plan must be submitted and approved, prior to the issue of any approvals under the *Building Act 2016*. 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 sw4

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

Detailed engineering drawings must be submitted and approved, prior to the issuing of any approval under the *Building Act 2016* or commencement of works (whichever occurs first). The detailed engineering drawings must include:

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

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

Advice:

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

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

Reason for condition

To ensure the site is drained adequately.

ENG sw6

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

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

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

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

Advice:

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

Reason for condition

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

ENG sw7

Stormwater pre- treatment and detention for stormwater discharges from the development must be installed prior to issue of a Certificate of Completion.

A stormwater management report and design must be submitted and approved, prior to issue of any consent under the *Building Act 2016* or construction. The stormwater management report and design must:

1. **Be prepared by a suitably qualified engineer.**
2. **Include detailed design of the proposed treatment train, including final estimations of contaminant removal.**
3. **Include detailed design and supporting calculations of the detention tank, sized such that there is no increase in flows from the developed site up to 5% AEP storm events and such that flows are limited to the receiving capacity of the kerb and gutter. All assumptions must be clearly stated.**
4. **Include design drawings of the detention tank showing the layout, the inlet and outlet (including long section), the overflow mechanism.**
5. **Show layout, of the inlet and outlet including long-section.**
6. **Provide clarification of the emptying times and outlet size.**
7. **Include supporting maintenance plan.**
8. **Include a Stormwater Management Summary Plan that outlines the obligation for future property owners to stormwater management.**

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

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

Advice:

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

Reason for condition

To avoid the possible pollution of drainage systems and natural watercourses, to comply with relevant State legislation, and to ensure the development's stormwater system takes into account limited receiving capacity of Council's infrastructure.

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 first occupation or commencement of use (whichever occurs first). The waste management plan must:

1. **include provisions for commercial 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 footpath with respect to placement of bins for collection

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 tr1

Traffic management within the Macquarie Street highway reservation must be installed prior to the first occupation or commencement of the use (whichever occurs first).

Traffic management design drawing(s) (including signage and line marking), must be submitted and approved, prior to the issue of any approvals under the *Building Act 20216*. The design drawing(s) must:

1. **Be prepared by a suitably qualified person;**

2. **Include signage indicating that the internal car parking area is a private car park for residents and the childcare centre use only;**

3. **Include revised line-marking for the Macquarie Street kerb parking spaces in front of the development site;**

4. **Include revised signage for the three existing Macquarie Street kerb parking spaces directly to the south-west of the proposed access. The revised signage must be in accordance with AS 1742.11:2016 Manual of uniform traffic control devices, Part 11: Parking Controls and must comprise:**
   - **One N2 sized R5-2 panel with the text "Meter" directly below the parking control, and the time of operation "9am-3.30pm/Mon-Fri"; and**
   - **One N2 sized R5-41 panel with the times of operation "7am- 9am/3.30pm-6.30pm/Mon-Fri".**

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

Advice:

Once the traffic management design drawings have 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

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

ENG tr2

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

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

Advice:

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

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 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:

1. **Forty (40) user Class 1A (residential) car parking spaces;**
2. **Two (2) motorcycle parking spaces; and**
3. **Five (5) user Class 3 car 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 car parking spaces and the two motorcycle 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. **"Residents Only" along with the apartment number the parking space is allocated to (for the car parking spaces); and**
2. **"Motor Cycles Only" (for the motorcycle parking spaces).**

Reason for condition

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

ENG 8

The use of the five (5) car parking spaces allocated to the childcare centre is restricted to User Class 3 (short term parking) only in accordance with Australian Standards AS/NZS2890.1 2004 Table 1.1.

A sign for each of the user Class 3 car parking spaces, approved by the Council, 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 type R5-14, and clearly state "P 10 minute", with "Childcare Only" below the time restriction in accordance with clause 3.3.4 of *AS 1742.11:2016 Manual of uniform traffic control devices, Part 11: Parking Controls*.

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.**

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 retaining wall within the highway reservation must not undermine the stability and integrity of the highway reservation and its infrastructure.

Detailed design drawings, structural certificates and associated geotechnical assessments of the retaining structure supporting the Macquarie Street highway reservation must be submitted and approved, prior to the commencement of work and must:

1. **Be prepared and certified by a suitable qualified person and experienced engineer;**
2. **Not undermine the stability of the highway reservation;**
3. **Be designed in accordance with AS 4678, with a design life in accordance with table 3.1 typical application major public infrastructure works;**

4. **Take into account any additional surcharge loadings as required by relevant Australian Standards;**
5. **Take into account and reference accordingly any Geotechnical findings; and**
6. **Detail any mitigation measures required.**

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 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 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 Macquarie Street highway reservation must be designed and constructed in accordance with:

- **Urban - TSD-R09-v1 – Urban Roads Driveways and TSD R14-v1 Type KC vehicular crossing;**

- **Commercial Urban- TSD-R09-v1 – Urban Roads Driveways and TSD R16-v1 Type KCR & B1 or Type KCRB & B1; and**

- **Footpath - Urban Roads Footpaths TSD-R11-v1.**

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. **Show on the plan any sort of modification of footpath, including pavement and surfacing reconstruction to the satisfaction of the Council's Director City Amenity.**
3. **Detail any services or infrastructure (i.e. light poles, pits, awnings) at or near the proposed driveway crossover.**
4. **Be designed for the expected vehicle loadings. A structural certificate to note that driveway is suitable for heavy vehicle loadings.**
5. **Show swept path templates in accordance with AS/NZS 2890.1 2004 (B85 or B99 depending on use, design template).**
6. **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.**
7. **Show that vehicular and pedestrian sight lines are met as per AS/NZS 2890.1 2004.**
8. **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 the 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

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

A SWMP must be submitted prior to the issue of any approval under the *Building Act 2016* or the commencement of work, whichever occurs first. The SWMP must be prepared in accordance with the Soil and Water Management on Building and Construction Sites fact sheets (Derwent Estuary Program, 2008), available here.

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

Advice:

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

ENVHE 2

A contamination Environmental Site Assessment report prepared by a suitably qualified and experienced person in accordance with the procedures and practices detailed in the *National Environment Protection (Assessment of Site Contamination) Measure 1999* (NEPM) as amended 2013 must be submitted to council prior to commencement of work. The report must conclude:

1. **Whether any site contamination presents a risk to workers involved in redevelopment of the site, or future users of the site, as a result of proposed excavation of the site;**

2. **Whether any site contamination presents an environmental risk from excavation conducted during redevelopment of the site;**

3. **Whether any specific remediation and/or protection measures are required to ensure proposed excavation does not adversely impact human health or the environment before excavation commences;**

4. **Based on the results of the Environmental Site Assessment that the excavation as part of the planned works will not adversely impact on human health or the environment (subject to implementation of any identified remediation and/or protection measures as required); and**

5. **That the site is suitable for its intended Use.**

If the Environmental Site Assessment report concludes that remediation and/or protection measures are necessary to avoid risks to human health or the environment, a proposed remediation and/or management plan must be submitted prior to commencement of work. Any remediation or management plan involving soil disturbance must include a detailed soil and water management plan to prevent off-site transfer of potentially-contaminated soil or stormwater.

Reason for condition

To determine the level of site contamination, and to identify any recommended remediation/management practices/safeguards which need to be followed/put in place during any excavations/ground disturbance on, or for use of the site, to provide for a safe living environment.

ENVHE 4

An approved construction environmental management plan, prepared by suitably qualified persons, must be implemented.

A construction environmental management plan must be submitted and approved to the satisfaction of the Council's Director City Planning, prior to the commencement of works and prior to the granting of any building consent. The plan must include, but is not limited to, the following:

1. **Details of the proposed construction methodology and expected likely time frames.**

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 generally consistent with *AS 2436-2010 - Guide to Noise and Vibration Control on Construction, Demolition and Maintenance Sites* and the *Interim Construction Noise Guidelines* (New South Wales Department of Environment and Climate Change, July 2009) 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 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 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

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 Macquarie 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 or existing building encroachment over Macquarie Street is formalised in accordance with statutory provisions.

Part 5 r1

The owner(s) of the property must enter into an agreement with the Council pursuant to Part 5 of the *Land Use Planning and Approvals Act 1993* with respect to the protection and maintenance of the retaining wall adjacent to the Macquarie Street highway reservation prior to the commencement of work.

The owner must not undertake any works at any time (including excavation and building) that will have any effect on the integrity of the Macquarie Street highway reservation or any retaining structure adjacent to Macquarie Street highway reservation or the road formation themselves or undermine the structural integrity of the highway reservation.

The ongoing maintenance of the retaining wall is the responsibility of the owner(s).

All costs for the preparation and registration of the Part 5 Agreement must be met by the owner.

The owner must comply with the Part 5 Agreement which will be placed on the property title.

Advice:

For further information with respect to the preparation of a part 5 agreement please contact the Council Development Engineering Staff.

Reason for condition

To ensure the protection of Council assets.

SUB s1

The two titles within the development site (CTs. 145283/1 and 145283/2) must be adhered in accordance with the provisions of s.110 of the *Local Government Building & Miscellaneous Provisions Act 1993* to the satisfaction of the Council's Director City Planning prior to the issue of any consent under the *Building Act 2016*.

Advice:

The application for an Adhesion Order to the Council has a fee. 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 engrossed receipt of the Land Titles Office lodgment slip for the Adhesion Order has been received by the Council.

Reason for condition

To ensure compliance with statutory provisions.

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 PLANNING

If a condition endorsement is required by a planning condition above, you will need to submit the relevant documentation to satisfy the condition via the Condition Endorsement Submission on Council's online services e-planning portal.

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.

Once approved, the Council will respond to you via email that the condition has been endorsed (satisfied). Detailed instructions can be found here.

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.

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.

BUILDING OVER AN EASEMENT

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

PERMIT TO CONSTRUCT PUBLIC INFRASTRUCTURE

You may require a permit to construct public infrastructure, with a 12 month maintenance period and bond (please contact the Hobart City Council's City Amenity Division to initiate the permit process).

NEW SERVICE CONNECTION

Please contact the Hobart City Council's City Amenity Division to initiate the application process for your new stormwater connection.

PLANNING

The site is in the attenuation area of two late night music venues. Considerations should be given at building design stage to ensure that adequate acoustic treatments are implemented to mitigate potential noise impacts.

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 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.

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-20-104 - 202-206 MACQUARIE STREET HOBART TAS 7000 - Planning Committee or Delegated Report ⇩
Attachment B:	PLN-20-104 - 202-206 MACQUARIE STREET HOBART TAS 7000 - CPC Agenda Documents ⇩
Attachment C:	PLN-20-104 - 202-206 MACQUARIE STREET HOBART TAS 7000 - Planning Referral Officer Cultural Heritage Report ⇩
Attachment D:	PLN-20-104 - 202-206 MACQUARIE STREET HOBART TAS 7000 - Planning Referral Officer Development Engineering Report ⇩
Attachment E:	PLN-20-104 202-206 MACQUARIE STREET HOBART TAS 7000 - UDAP Minutes ⇩

City of HOBART

APPLICATION UNDER HOBART INTERIM PLANNING SCHEME 2015

Type of Report:	Committee
Council:	12 October 2020
Expiry Date:	13 October 2020
Application No:	PLN-20-104
Address:	202 - 206 MACQUARIE STREET , HOBART ADJACENT ROAD RESERVE
Applicant:	(New Pleasant Investments No.2 Pty Ltd, by their Agent, Ireneinc Planning and Urban Design) c/o 49 Tasma Street
Proposal:	New Building for 40 Multiple Dwellings, Educational and Occasional Care (Childcare Centre), General Retail and Hire, Business and Professional Services, and Food Services
Representations:	Six hundred and eighteen (618)
Performance criteria:	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 a New Building for 40 Multiple Dwellings, Educational and Occasional Care (Childcare Centre), General Retail and Hire, Business and Professional Services, and Food Services at 202 to 206 Macquarie Street, Hobart, and includes works within the adjacent road reserve.

1.2 More specifically the proposal includes:

- The redevelopment of the currently vacant site to facilitate a new mixed-use building for 40 residential apartments, a first floor childcare centre and two ground floor commercial tenancies. Two basement levels provide parking for 45 cars and two motorcycles. Bicycle parking is also incorporated.
- The proposed building consists of nine floors above ground level and an overall maximum height of 30 metres above natural ground level reducing to 20 metres, 15 metres from the front property boundary. External materials are contemporary, including brick and concrete, fibre cement sheeting, large areas of glazing, painted metal and powdercoated aluminium. Landscape details have been incorporated into the building's design, including trees adjacent to the ground level vehicle access and planters around a level 6 rooftop common deck and also the first floor childcare centre.
- The total gross floor area of the proposed building is 9,786m^2.

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

1.3.1 Potentially Contaminated Land Code - Use and Excavation
1.3.2 Road and Railway Assets Code - Existing Road Accesses and Junctions
1.3.3 Parking and Access Code - Design of Vehicle Accesses; Layout of Parking Areas
1.3.4 Stormwater Management Code - Stormwater Drainage and Disposal
1.3.5 Attenuation Code - Sensitive Use
1.3.6 Historic Heritage Code - Archaeology

1.4 Six hundred and eighteen (618) representations were received in relation to the application during the extended statutory advertising period between 17 September 2020 and 5 October 2020. Of these, 617 were opposed and one was neutral.

1.5 The proposal was considered by the Urban Design Advisory Panel at its meeting on 29 September 2020. The Panel's minutes are provided as an attachment to this report. The Panel noted the proposal was largely compliant with the relevant urban design provisions in the planning scheme, but were nonetheless not supportive of the proposal in an overall sense. The minutes of the meeting are provided as an attachment to this report.

1.5 The proposal is recommended for approval subject to conditions.

1.6 The final decision is delegated to the Council because more than five objections have been received.

2. Site Detail

2.1 The site is 202 to 206 Macquarie Street, which located at south-western extremity of the Hobart's central business area. The site has an area of approximately 1382m² and is currently vacant, having previously been occupied by a service station. The service station has been removed and the site was remediated in the mid to late 2000s.

2.2 Under the Hobart Interim Planning Scheme 2015, the site is located within the Central Business Zone, the Central Business Core Area, and the Area of Archaeological Potential (Figures 2 to 4). The site is also in the attenuation area of two nearby late night music venues, being Hotel SoHo at 124 Davey Street and The Duke at 192 Macquarie Street (Figure 5). The site is not within the Active Frontage Overlay and Macquarie Street is not a Solar Penetration Priority Street. The site's Macquarie Street frontage (Figure 6) faces north-west.

2.3 The adjoining property at 212 to 218 Macquarie Street (Collegiate School) is heritage-listed, contains a number of heritage and more contemporary buildings and is partially covered by Heritage Precinct H4 within the Historic Heritage Code of the Hobart Interim Planning Scheme 2015. This adjoining property is also listed on the Tasmanian Heritage Register (Figure 2).

Figure 1: The subject site is outlined in light blue.

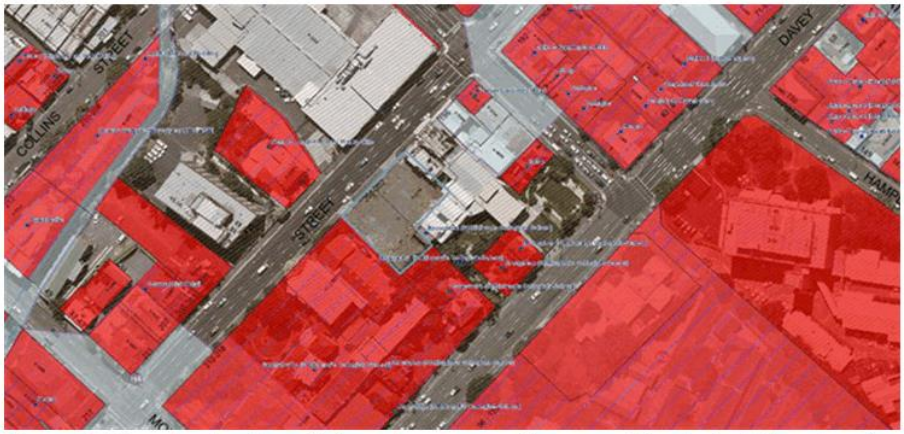

Figure 2: Showing heritage listings for surrounding area. Purple hatching denotes Tasmanian Heritage Council. Red denotes Hobart Interim Planning Scheme 2015 heritage listing only. Light blue denotes a Heritage Precinct. Fine red hatching indicates the area of archaeological potential.

Figure 3: Showing the zoning of the site under the Hobart Interim Planning Scheme 2015 and surrounding area. The site is bordered in light blue. The blue denotes the Central Business Zone, the grey denotes the Urban Mixed Use Zone.

Figure 4: The site lies at the south-eastern edge of the Core Height Area which is highlighted light blue. The small area of yellow towards the top left corner is the Fringe Height Area.

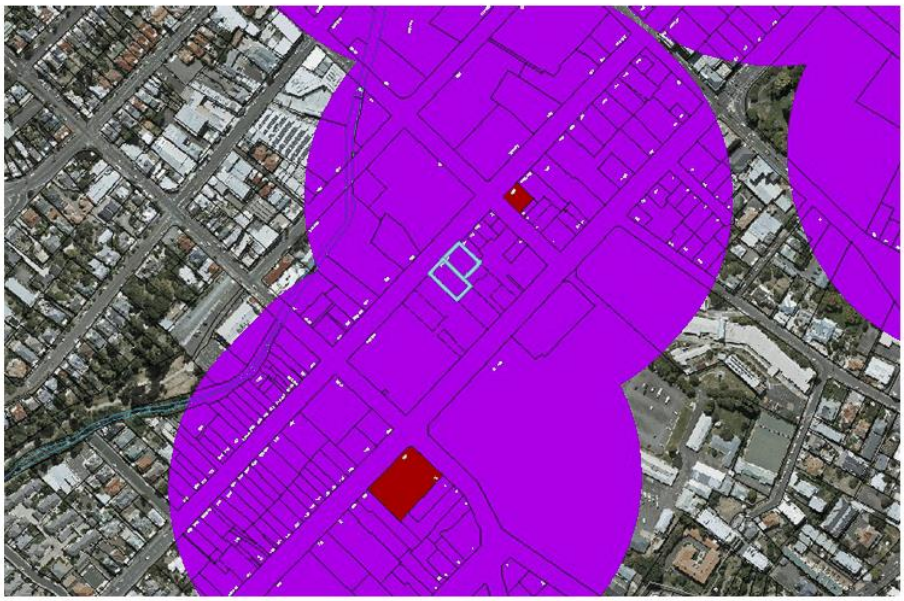

Figure 5: The site (light blue outline) is within the attenuation area of two late night music venues. The purple denotes the attenuation area and the maroon denotes the late night music venue.

Figure 6: The site's existing Macquarie Street frontage. Source: Google Streetview.

3. Proposal

3.1 Planning approval is sought for a New Building for 40 Multiple Dwellings, Educational and Occasional Care (Childcare Centre), General Retail and Hire, Business and Professional Services, and Food Services at 202 to 206 Macquarie Street, Hobart, and includes works within the adjacent road reserve.

3.2 More specifically the proposal is for:

- The redevelopment of the currently vacant site to facilitate a new mixed-use building for 40 residential apartments, a first floor childcare centre and two ground floor commercial tenancies. Two basement levels provide parking for 45 cars and two motorcycles. Bicycle parking is also incorporated.
- The proposed building consists of nine floors above ground level and an overall maximum height of 30 metres above natural ground level reducing to 20 metres, 15 metres from the front property boundary. External materials are contemporary, including brick and concrete, fibre cement sheeting, large areas of glazing, painted metal and powdercoated aluminium. Landscape details have been incorporated into the building's design, including trees adjacent to the ground level vehicle access and planters around a level 6 rooftop common deck and also the first floor childcare centre.
- The total gross floor area of the proposed building is 9,786m^2.

Figure 7: The Macquarie Street front elevation of the proposal.

Figure 8: The proposed building in the context of Macquarie Street.

4. Background

4.1 The proposal was considered by the Urban Design Advisory Panel at its meeting on 29 September 2020. The Panel's minutes are provided as an attachment to this report. The Panel noted the proposal was largely compliant with the relevant urban design provisions in the planning scheme, but were nonetheless not supportive of the proposal in an overall sense. The Panel's comments are included where relevant in section 6 of this report, and are discussed in section 7. The Panel's comments are provided in full as an attachment to this report.

4.2 The application was set to expire on 1 October 2020 - the day public advertising finished. An extension of time was sought. The applicant was only prepared to grant an extension until 13 October. As a consequence the application is to be considered by a Special Planning Committee prior to the Council meeting on 12 October 2020. This required the assessment report to be completed within five business days of over 600 representations being received.

4.3 External legal advice was obtained in relation to the application of clause 22.4.1 A5 which states as follows:

Building height of development within 15m of a frontage and not separated from a place listed in the Historic Heritage Code by another building, full lot (excluding right of ways and lots less than 5m width) or road (refer figure 22.5 i), must:

(a) not exceed 1 storey or 4m (whichever is the lesser) higher than the facade building height of a heritage building on the same street frontage (refer figure 22.5 ii); and

(b) not exceed the facade building height of the higher heritage building on the same street frontage if the development is between two heritage places (refer figure 22.5 ii);

or
(c) comply with the building height in Clauses 22.4.1 A1 and A2;

whichever is the lesser.

4.4 The subject site 202 to 206 Macquarie Street is next to the site 212 to 218 Macquarie Street (Collegiate School), which is heritage listed under the planning scheme. However, the external legal advice indicated that the extent of the listing for 212 to 218 Macquarie Street should be confined, in this instance, to the buildings of significance on that site - most relevantly "Stephenville". Because Stephenville is separated from the subject site by two other buildings which are not of heritage significance (refer image below), and because it is more than 15m setback from the Macquarie Street frontage, the legal advice provided to the Council concludes that the above provision is not applicable to this planning application.

Figure 9: The subject site is bordered in blue. "Stephenville" is identified by the H. The two buildings marked as 'X' are between the subject site and "Stephenville" and are not of heritage significance. Source: Simmons Wolfhagen.

5. Concerns raised by representors

5.1 A total of six hundred and eighteen (618) representations were received (617 objecting; 1 neutral). If multiple representations were received from individuals, these have been combined into a single submission from that individual.

5.2 Five hundred and two (502) representations were received within the statutory advertising period between 17 September and 1 October 2020. These included:

- 501 objecting; 1 neutral.
- 487 pro forma representations, comprised of 294 standard pro forma and 193 pro forma containing additional unique commentary.
- 15 unique representations (i.e. not a pro forma).

5.3 One hundred and sixteen (116) late representations were received between 2 October 2020 and midday on 5 October 2020, all objecting to the proposal. These included:

- 115 pro forma representations, comprised of 74 standard pro forma and 41 pro forma containing additional unique commentary.
- 1 unique representation (i.e. not a pro forma).

5.4 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.

Key Themes

The overwhelming majority of representations objected to the proposed building height, citing impacts on the adjoining school, streetscape and townscape. Key themes raised in the representations are summarised below.

Height:

The proposal was seen to be too high and too large. This was perceived to introduce privacy and safety issues for the adjoining school. In particular, representors objected to the proposed dwellings that directly overlook the school's boarding house and grounds. In addition to privacy, representors objected to the proposed height due to the overshadowing impacts on neighbouring land and the visual impact that height would introduce. Visual impacts are discussed further in heritage and amenity below.

It is worth noting that a large proportion of representors would seemingly support a 15m height, compared to the proposed 30m building.

One representor specifically raised objection by citing that the proposal is contrary to the building height objectives under clause 22.4.1 of the Central Business Zone of the Hobart Interim Planning Scheme 2015.

Heritage:

Representors cited the quality of nearby built heritage and raised objection to the proposals perceived lack of compatibility with this heritage. In particular, the proposal was perceived to be out of scale and character with the surrounding area, which predominantly features low rise buildings, many of which are characterised by their built heritage values.

Amenity:

A theme which permeated through the representations was the proposals perceived impact on amenity due to a loss of views, poor design quality, building height and bulk. Representors raised concerns that the proposal will dominate the streetscape and block views to Mount Wellington/kunanyi from the broader townscape. Representors stressed that Hobart is a town of human scale, and that the proposal will diminish the unique built character that gives Hobart its charm.

There was a general sentiment that the proposal is not in keeping with the Hobart townscape. The proposal was also seen by many to be more akin to other larger cities around the world, and that Hobart should not be like other cities.

Other:

Other issues were raised by representors in slightly less frequency than those related to height, heritage and amenity. These other issues include traffic and construction impacts. With respect to traffic, representors were concerned that the proposal will exacerbate existing congestion and parking problems in the area. In particular, a number of representors sought changes to the design of access and parking, including requests for more considerations for e-bike parking and pick-up/drop-off for the child care centre. With respect to construction, concerns were related to the introduction of pollution and privacy issues that could be particularly detrimental and disruptive to the adjoining school and offices.

Quotes

The following quotes have been included to highlight the sentiment of the representors to the proposal:

"Too big, inappropriate, selfish. Does nothing for the view lines, heritage and street scape."

"Huge disadvantage to the school."

"Greed, opportunism, and a paucity of community awareness are going to destroy the fabric of Hobart. That fabric is made up of physical beauty, human dimensions, pleasant outlooks, coherent heritage, and friendly people. Why would people visit, immigrate, or return to live in a place which has lost those values."

"This proposal is literally, 'over the top'."

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 Central Business Zone of the *Hobart Interim Planning Scheme 2015*.

6.3 The site is currently vacant, but most recently was a petrol station. The proposed uses are residential (multiple dwellings), educational and occasional care (childcare centre), general retail and hire, business and professional services, and food services. All of the proposed uses are permitted in the zone.

6.4 The proposal has been assessed against:

6.4.1 Central Business 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 Attenuation 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 Potentially Contaminated Land Code:-

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

6.5.2 Road and Railway Assets Code:-

Existing Road Accesses and Junctions E5.5.1 P3

6.5.3 Parking and Access Code:-

Design of Vehicular Accesses - E6.7.2 P1
Layout of Parking Areas - P1

6.5.4 Stormwater Management Code:-

Stormwater Drainage and Disposal - E7.7.1 P2

6.5.5 Attenuation Code:-

Development for Sensitive Use in Proximity to Use with Potential to Cause Environmental Harm - E9.7.2 P1

6.5.6 Historic Heritage Code:-

Archaeology - E13.10.1 P1

6.6 Each performance criterion is assessed below.

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

6.7.1 The acceptable solution at clauses E2.5 A1 and E2.6.2 A1 respectively require that the Director of the Environmental Protection Authority, or a person approved by the Director, certifies that the site is suitable for the intended use, and that the proposal involves no excavation.

6.7.2 The proposal does not include approval from the Director of the EPA, and it does involve excavation.

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

6.7.4 The performance criterion at clause E2.5 P1 and E2.6.2 P1 provides as follows:

E2.5 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.

E2.6.2 P1

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

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

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

(i) an environmental site assessment;

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

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

6.7.5 The proposal has been assessed by the Council's Environmental Health Officer, who has determined that the submitted documentation does not constitute an Environmental Site Assessment prepared by a suitably qualified person as defined by the Potentially Contaminated Land Code of the Hobart Interim Planning Scheme 2015.

However, the Environmental Health Officer has noted that the submitted documentation, an audit prepared by Golder Associates Pty Ltd and dated 6 November 2020, addresses the risks to human health and the environment (as per the National Environmental Protection Measures), clearly states that the risks are very low and acceptable for the change of use and for the continued use of the site, and that the Tasmanian EPA no longer consider the site contaminated.

Based on the submitted documentation, the Environmental Health Officer has concluded that subject to condition that development occurs in accordance with any recommendations from an approved Environmental Site Assessment, the proposal complies with the above performance criteria.

6.7.6 The proposal complies with the performance criterion.

6.8 Existing Road Accesses and Junctions - E5.5.1 P3

6.8.1 The acceptable solution at clause E5.5.1 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.

6.8.2 The proposal will result in an increase of vehicular movements of more than 20% or 40 vehicle movements.

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 E5.5.1 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.

6.8.5 Council's Senior Development Engineer has assessed the proposal and advised it complies with the above performance criteria, subject to conditions. The officer's report is an attachment to this report. The officer advises:

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

- The impact of the increase in vehicle movements at this site is offset by the fact that the future occupants of the apartments will most likely have been commuting to work from their previous addresses anyway.
- The RTA Guide to Traffic Generating Developments suggests around 10 vpd for general residential areas in Sydney, whilst multi-storey apartment buildings (ie. high density residential) generate only around 1.5 vpd.
- Per TIA the right hand lane in Macquarie Street has sufficient capacity to accommodate the increase in vehicle movements.

- Multi-storey apartments in the CBD generate far less traffic than the equivalent standalone residential dwellings. The construction of these apartments will reduce the number of people who would otherwise be living in general residential dwellings, and will therefore result in less traffic generation overall.

(b) the nature of the traffic generated by the use; -
- Predominantly cars which have negligible impact on efficiency

(c) the nature and efficiency of the access or the junction; -
- Private driveway of sufficient width and geometry to enable efficient use

(d) the nature and category of the road; -
- Macquarie Street is a multi-lane, category 1 trunk road connecting the States capital city with the major regional centres to the North.
- The capacity of the right-most lane to accommodate the additional vehicle movements has been adequately addressed in the TIA (Prodanovic) and Council's development engineer agrees with the findings of the TIA

(e) the speed limit and traffic flow of the road; -
- Refer to the TIA (Prodanovic)
- Speed limit is 50 km/hr which facilitates vehicle movements into and out of the development.
- Traffic on Macquarie moves in platoons due to the timing of the lights. The time between platoons is sufficient to enable efficient vehicle movements into and out of the development.

(f) any alternative access to a road; -
- No alternative access is possible for the proposed development.

(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; and -
- 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. -

- The TIA has been endorsed by the Department of State Growth through the land-owner consent process.

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.

6.8.6 The proposal complies with the performance criterion.

6.9 Design of Vehicular Accesses - E6.7.2 P1

6.9.1 The acceptable solution at clause E6.7.2 P1 the design of vehicular accesses to meet the relevant Australian Standard.

6.9.2 The proposal includes an access that does not meet the relevant Australian Standard.

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

6.9.4 The performance criterion at clause E6.7.2 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.

6.9.5 Council's Senior Development Engineer has assessed the proposal and advised it complies with the above performance criteria, subject to conditions. The officer's report is an attachment to this report. The officer advises:

(a) avoidance of conflicts between users including vehicles, cyclists and pedestrians;

- The pedestrian sight distance meets the acceptable solution
- The entering sight distance for vehicles is inhibited by the kerb-side parking in Macquarie Street

The access is proposed to be used to facilitate pick-up and drop-off for the childcare centre, it follows that during pick-up the exiting vehicles will often have a child in the front passenger seat that would be exposed to a collision. Adequate sight distance such that the level of risk associated with use of the access is minimised is therefore imperative.

To this effect the consultant has proposed modification of the kerb-side parking to restrict use of the relevant spaces during peak pick-up and drop-off times. This is considered to be a satisfactory compromise that can be supported with appropriate conditions. A condition is recommended for parking restrictions.

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

- Refer to the TIA (Prodanovic).
- Speed limit is 50 km/hr which facilitates vehicle movements into and out of the development.
- Traffic on Macquarie moves in platoons due to the timing of the lights. The time between platoons is sufficient to enable efficient vehicle movements into and out of the development.
- The capacity of the right-most lane to accommodate the additional vehicle movements has been adequately addressed in the TIA (Prodanovic) and Council's development engineer agrees with the findings of the TIA

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

- Predominantly used by cars which have negligible impact on efficiency
- Private driveway is of sufficient width and geometry to enable efficient use

(d) ease of accessibility and recognition for users.

- The location of the access will permit easy use
- The access is consistent with surrounding properties and as such ease of recognition is acceptable

Based on the above assessment the design of the access may be accepted under Performance Criteria P1:E6.7.2 of the Planning Scheme.

6.9.6 The proposal complies with the performance criterion.

6.11 Layout of Parking Areas - 6.7.5 P1

6.10.1 The acceptable solution at clause 6.7.5 A1 requires the layout of parking areas to meet the relevant Australian Standard.

6.10.2 The proposal includes a car parking layout that does not meet the relevant Australian Standard.

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 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.

6.10.5 Council's Senior Development Engineer has assessed the proposal and advised it complies with the above performance criteria, subject to conditions. The officer's report is an attachment to this report. The officer advises:

- Clause 2.5.2 of AS2890.1 requires a 600mm wide separator between lanes for the curved bend on the entrance ramp.
- Due to geometric constraints the consultant has proposed a 300mm width separator.
- The 300mm width separator is considered satisfactory for the relatively low traffic volumes using the access driveway.
- User safety and convenience are not compromised.

6.10.6 The proposal complies with the performance criterion.

6.11 Stormwater Drainage and Disposal - E7.7.1 P2

6.11.1 The acceptable solution at clause E7.7.1 A2 requires a stormwater system for a new development must incorporate water sensitive urban design principles for the treatment and disposal of stormwater where more than six car parking spaces are proposed.

6.11.2 The proposal includes more than six car parking spaces.

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

6.11.4 The performance criterion at clause E7.7.1 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.

6.11.5 Council's Environmental Engineering Unit has indicated that subject to conditions the proposal will comply with the performance criteria.

6.11.6 The proposal complies with the performance criterion.

6.12 Development for Sensitive Use in Proximity to Use with Potential to Cause Environmental Harm - E9.7.2 P1

6.12.1 There is no acceptable solution for E9.7.1 A1.

6.12.2 The proposal includes sensitive use within an attenuation area.

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

6.12.4 The performance criterion at clause E9.7.2 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.

6.12.5 The application has been referred to Council's Environmental Development Planner, who provided the following assessment:

The site is in the attenuation area of two late night music venues, being 'The Duke', at 192 Macquarie Street, and 'Hotel Soho', at 124 Davey Street. The Duke is located approximately 65m north-east of the subject site. Hotel Soho is located approximately 155m south-west of the subject site. A number of existing residential premises exist in similar proximity to these venues. The proposed multiple dwellings have the potential to hear music from these venues under certain conditions. However, any noise experienced at the multiple dwellings would not be at a level or duration to cause environmental harm. In addition, any noise experienced would not be excessively above background traffic noise levels, and existing development in the area could be expected to act as a physical buffer between the noise source and receptor.

6.12.6 The proposal complies with the performance criterion.

6.13 Archaeology - E13.10.1 P1

6.13.1 The acceptable solution at clause E13.10.1 A1 requires that no excavation is proposed on a place that is of archaeological potential.

6.13.2 The proposal includes excavation, and the site is a place that is of archaeological potential.

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 E13.10.1 P1 provides as follows:

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'.

6.13.5 The application has been referred to Council's Cultural Heritage Officer, who provided the following assessment:

The site

202-208 Macquarie Street is a vacant site in the urban block bound by Macquarie, Davey, Molle and Barrack Street. The urban block is an assortment of buildings representing diverse architectural periods but unified by a consistent scale: a two to three storey height range (or datum). Buildings from the Metropolitan Drainage Board Plan No 43 endure, demonstrating a 19th century character and scale. The site of the proposed development was once occupied by a number of terrace houses. These have long since been demolished. In the 20th century, the site was used as a service station, this too is now demolished and the site remains vacant.

The proposal

The proposed development involves the building of a nine storey residential tower on a vacant lot. Excavation is proposed for an area of carparking to be accessed from a double crossover on Macquarie Street.

The Planning Scheme

The site of the proposed development is adjacent St Michael's School which includes Stephensville (Listed Place Table E13.1). Adjacency provisions in relation to a listed place (22.4.1 A5/P5 Height) are not engaged by this proposal. Assessment by reference to 22.4.1 A5/P5 is

not required because the proposed building is separated from Stephensville by other existing buildings. Clause 22.4.3 A3/P3 Design, of the development standards for buildings and works in the Central Business Zone must be considered and satisfy both (a) and (b) to meet the acceptable solution. In this instance, the building does not have a flat facade and has awnings as required by both (a) and (b). Therefore the proposal satisfies 22.4.3 A3.

The heritage discretion in relation to this application is archaeology E13.10.1 P1, because excavation for the carparking is proposed.

Clause E13.10.1 P1 is set out above. :

The applicant has provided an archaeology report by a suitably qualified person. The report states that the loss of significant archaeological remains is not anticipated.

From the report: “it considered that the site has little or no archaeological potential. No further archaeological input into any development process is considered necessary”.

Representations

618 representations were received, almost all raising heritage, streetscape and townscape issues as demonstrated in the following comments:

"The proposed development appears incompatible with the highly significant streetscape and views along Macquarie Street. (22.4.1 (a)).
The height and bulk of the development, particularly along the rear boundary which borders the school, will overshadow and overlook open space and heritage buildings within the school boundaries. This includes multiple, habitable rooms such as classrooms, assembly hall, chapel, boarding house playground and garden areas. (22.4.1 (c)).The building will interfere with view lines of Mt Wellington, particularly from our Performing Arts Centre, Broughton building and other users across Davey Street".

"This proposal, at 30 metres, is too high, considering that the proposed absolute maximum, recommended by Leigh Woolley and the City of Hobart's professional planning staff, is 15 metres. It is not compatible with the highly significant streetscape and views along Macquarie Street, and does not contribute positively to this streetscape and townscape, as is clear from the images provided by the applicant. Its height and bulk,

particularly along the boundary with the school at the rear, will overshadow, and overlook, open space, classrooms, assembly hall, boarding house playground, garden areas, and heritage buildings, within the school boundaries. Views of the mountain, from across Davey Street, and from some areas within the school, will be taken away. For these reasons, I oppose this development"

Conclusion

None of the representations raised the issue of archaeology. The Planning Scheme provisions do not include a discretion relating to heritage, streetscape or townscape that can be considered in the assessment of this application. There are clearly concerns in the community regarding the loss of significant cultural heritage values, however the proposed development complies with the Scheme Provisions. The proposed development satisfies E13.10.1 P1 (Archaeology).

6.13.6 The officer's report is provided as an attachment to this report.

6.13.7 The proposal complies with the performance criterion.

7. Discussion

7.1 Planning approval is sought for a New Building for 40 Multiple Dwellings, Educational and Occasional Care (Childcare Centre), General Retail and Hire, Business and Professional Services, and Food Services at 202 to 206 Macquarie Street, Hobart, and includes works within the adjacent road reserve.

7.2 A total of six hundred and eighteen (618) representations (617 objecting to the proposal; 1 neutral comment) were received. Of these, 502 were received within the statutory advertising period between 17 September and 01 October 2020, and 115 late submissions were received. The representations received raised concerns broadly with respect to height, heritage, amenity of future occupants, amenity impact on the adjoining school, and traffic. The proposal has been designed to comply with the acceptable solutions for the zone standards, and as such the Council has no discretion with respect to matters like height, setback and design. Likewise, because the application has been designed to comply with the acceptable solutions for the zone standards, impact on the adjoining school from things like overshadowing and privacy are effectively deemed to be acceptable by the planning scheme, and the Council has no discretion with respect to these matters either. The proposal only triggers a heritage discretion with respect to archaeology, and the Council's Cultural Heritage Officer has assessed the proposal as being acceptable from this point of view. The proposed car parking, access, and traffic arrangements are supported by the applicant's traffic engineer, have been assessed by the Council's development, roads and traffic engineers, and are supported subject to conditions.

7.3 The proposal has been assessed against the relevant provisions of the planning scheme and is considered to satisfy either the acceptable solutions or the corresponding performance criteria.

7.4 The proposal has been assessed by other Council officers, including the Council's Senior Development Engineer, Cultural Heritage Officer, Senior Environmental Health Officer, Program Leader Road Services, Customer Liaison Officer - Cleansing and Solid Waste, Stormwater Services Engineer, Senior Engineer - Roads and Traffic, Graduate Engineer - Traffic and Environmental Development Planner. The officers have raised no objection to the proposal, subject to conditions.

7.5 The application was considered by the Urban Design Advisory Panel at its meeting of 29 September 2020. The Panel noted the proposal was largely compliant with the relevant urban design provisions in the planning scheme, but were otherwise not supportive of the proposal in an overall sense. Because of the lack of relevant urban design discretions, the Panel's comments are provided in full below, as well as at Attachment E to this report.

The Panel was disappointed that the Application was not accompanied by a Design Statement, nor were shadow diagrams submitted illustrating overshadowing impacts on the adjacent school grounds and properties.

The Proponent is not currently the owner of the site.

The Panel noted that the application had apparently been designed in a manner calculated to meet Acceptable Solutions pertaining to the relevant provisions within the City of Hobart Planning Scheme 2015 (Planning Scheme).

As a consequence the Panel recognises that, in accordance with its Terms of Reference, there would appear to be very little opportunity for it to provide 'advice limited to compliance with relevant urban design provisions of the Council's Planning Scheme'.

This is troubling to the Panel given that it is profoundly concerned about the nature of this proposal, its potential impact on the amenity of the adjacent school and in the opinion of the Panel, its scant regard for the adjacent heritage buildings (including curtilage) and the overall streetscape/townscape qualities of the area.

The Panel agreed that the Proposal is completely inappropriate for this site even though it may be argued successfully that it complies with the current provisions of the Planning Scheme, notwithstanding that a number of the Zone Purpose Statements, Desired future Character Statements and Objectives, and Development Standards have not been met.

There are excellent examples in Hobart where developers have moderated their expectations, developed below the full extent possible under the Acceptable Solutions within the Planning Scheme and as a consequence contributed positively to the urban fabric of Hobart.

It is within this context and the Panel's Terms of Reference requiring it to promote good design and a high quality urban environment, that these comments are directed to the Proponent and the Council.

The urban analysis of the surrounding area, included with the documentation submitted by the Proponent, failed in the opinion of the Panel to give a true reflection of the actual urban context for the development site. The urban character of the 'school block' is in fact defined predominantly by low scale buildings, heritage listed properties, places of historic interest and value, and landscaped open spaces with mature trees. Office buildings and apartment buildings nearby are modest in scale.

It is largely an educational precinct with considerable heritage value, cultural worth and amenity.

The Proposal's height and overshadowing will result in an intrusive and dominant building with a negative contribution to the Macquarie Street streetscape and

broader townscape. Impacts on the surrounding townscape when experienced from upper Macquarie Street, Barrack Street, Davey Street, the Anglesea Barracks Precinct and adjacent park, including views to Mt Wellington will be severe.

The Panel raises in addition a number of incidental points:

- *The proposed awning on the Macquarie Street frontage is not a consistent characteristic of the streetscape and is not supported.*
- *There is a need for a comprehensive landscape plan with particular reference to the external 'natural' sunny spaces being provided for children to experience in the child care centre and the proposed planting adjacent to the ground floor vehicular entry. The protection of mature trees and vegetation on adjacent properties during construction will also need specific consideration.*
- *Concerns were raised with the design of some of the apartments with regards to the adequacy of natural ventilation and daylight.*
- *The lack of setback from side and rear boundaries was also noted. This would not comply with the acceptable solutions contained within the recently approved Planning Scheme Amendment PSA 19-1 Residential and Visitor Accommodation Amenity that comes into effect 19 November 2020.*

Finally the Panel feels obliged to draw to the attention of the Council the fact that had the proposed Amendment to the Hobart Interim Planning Scheme, prepared by the Council June 2018, following the work undertaken by Architect Leigh Woolley on Building Heights, been progressed to a positive conclusion, this Proposal could have had a more relevant and appropriate level of consideration. Even if the maximum height limits proposed by that amendment had been completely removed or deferred, the Acceptable Solution building heights proposed in the amendment were far more appropriate for this site and the performance criteria for additional discretionary height would have required a more rigorous assessment of urban design and heritage values.

7.6 The proposal is recommended for approval.

8. Conclusion

8.1 The proposed New Building for 40 Multiple Dwellings, Educational and Occasional Care (Childcare Centre), General Retail and Hire, Business and Professional Services, and Food Services at 202 to 206 Macquarie Street, Hobart satisfies the relevant provisions of the *Hobart Interim Planning Scheme 2015*, and as such is recommended for approval.

9. Recommendations

That: Pursuant to the *Hobart Interim Planning Scheme 2015*, the Council approve the application for New Building for 40 Multiple Dwellings, Educational and Occasional Care (Childcare Centre), and General Retail and Hire, Business and Professional Services and Food Services, at 202 to 206 Macquarie Street, and Adjacent Road Reserve, Hobart, for the reasons outlined in the officer's report and a permit containing the following conditions be issued:

GEN

The use and/or development must be substantially in accordance with the documents and drawings that comprise PLN-20-104 202-206 MACQUARIE STREET HOBART TAS 7000 - Final Planning Documents except where modified below.

Reason for condition

To clarify the scope of the permit.

TW

The use and/or development must comply with the requirements of TasWater as detailed in the form Submission to Planning Authority Notice, Reference No. TWDA 2020/00607-HCC dated 19/05/2020 as attached to the permit.

Reason for condition

To clarify the scope of the permit.

PLN s1

The palette of exterior colours and materials must be provided.

Prior to the issue of any approval under the *Building Act 2016* (excluding for 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.

PLN s2

A landscape plan must be prepared for the soft and hard landscaping of the site by a suitably qualified landscape architect.

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

All work required by this condition must be undertaken in accordance with the approved revised plans. Prior to occupancy, confirmation from the landscape architect who prepared the approved landscaping plan that the all landscaping works required by this condition have been implemented, must be submitted to the satisfaction of the Directory City Planning.

Reason for condition

In the interest of the amenity of the space.

ENG 12

A construction waste management plan must be implemented throughout construction.

A construction waste management plan must be submitted and approved, prior to the issue of any approvals under the *Building Act 2016*. 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 sw4

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

Detailed engineering drawings must be submitted and approved, prior to the issuing of any approval under the *Building Act 2016* or commencement of works (which ever occurs first). The detailed engineering drawings must include:

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

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

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

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

Reason for condition

To ensure the site is drained adequately.

ENG sw6

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

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

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

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

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

Reason for condition

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

ENG sw7

Stormwater pre- treatment and detention for stormwater discharges from the development must be installed prior to issue of a Certificate of Completion.

A stormwater management report and design must be submitted and approved, prior to issue of any consent under the Building Act 2016 or construction. The stormwater management report and design must:

1. **Be prepared by a suitably qualified engineer.**
2. **Include detailed design of the proposed treatment train, including final estimations of contaminant removal.**
3. **Include detailed design and supporting calculations of the detention tank, sized such that there is no increase in flows from the developed site up to 5% AEP storm events and such that flows are limited to the receiving capacity of the kerb and gutter. All assumptions must be clearly stated.**
4. **Include design drawings of the detention tank showing the layout, the inlet and outlet (including long section), the overflow mechanism.**
5. **Show layout, of the inlet and outlet including long-section.**
6. **Provide clarification of the emptying times and outlet size.**
7. **Include supporting maintenance plan.**
8. **Include a Stormwater Management Summary Plan that outlines the obligation for future property owners to storm water management.**

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

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

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

Reason for condition

To avoid the possible pollution of drainage systems and natural watercourses, to comply with relevant State legislation, and to ensure the development's stormwater system takes into account limited receiving capacity of Council's infrastructure.

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 first

occupation or commencement of use (whichever occurs first). The waste management plan must:

1. **include provisions for commercial 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 footpath with respect to placement of bins for collection*
- *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 tr1

Traffic management within the Macquarie Street highway reservation must be installed prior to the first occupation or commencement of the use (whichever occurs first).

Traffic management design drawing(s) (including signage and line marking), must be submitted and approved, prior to the issue of any approvals under the Building Act 20216. The design drawing(s) must:

1. **Be prepared by a suitably qualified person;**
2. **Include signage indicating that the internal car parking area is a private car park for residents and the childcare centre use only;**
3. **Include revised line-marking for the Macquarie Street kerb parking spaces in front of the development site;**

4. **Include revised signage for the three existing Macquarie Street kerb parking spaces directly to the south-west of the proposed access. The revised signage must be in accordance with AS 1742.11:2016 Manual of uniform traffic control devices, Part 11: Parking Controls and must comprise:**
    - **One N2 sized R5-2 panel with the text "Meter" directly below the parking control, and the time of operation "9am-3.30pm/mon-fri"; and**
    - **One N2 sized R5-41 panel with the times of operation "7am-9am/3.30pm-6.30pm/mon-fri".**

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

Advice:

- *Once the traffic management design drawings have 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

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

ENG tr2

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

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

Advice:

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

1. **Forty (40) user class 1A (residential) car parking spaces**
2. **Two (2) motorcycle parking spaces**
3. **Five (5) user class 3 car 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 car parking spaces and the two motorcycle 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. **"Residents Only" along with the apartment number the parking space is allocated to (for the car parking spaces); and**
2. **"Motor Cycles Only" (for the motorcycle parking spaces)**

Reason for condition

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

ENG 8

The use of the five (5) car parking spaces allocated to the childcare centre is restricted to User Class 3 (short term parking) only in accordance with Australian Standards AS/NZS2890.1 2004 Table 1.1.

A sign for each of the user class 3 car parking spaces, approved by council,

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 type R5-14, and clearly state "P 10 minute", with "Childcare Only" below the time restriction in accordance with clause 3.3.4 of *AS 1742.11:2016 Manual of uniform traffic control devices, Part 11: Parking Controls*.

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.**

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 retaining wall within the highway reservation must not undermine the stability and integrity of the highway reservation and its infrastructure.

Detailed design drawings, structural certificates and associated geotechnical assessments of the retaining structure supporting the Macquarie Street highway reservation must be submitted and approved, prior to the commencement of work and must:

1. **Be prepared and certified by a suitable qualified person and experienced engineer.**
2. **Not undermine the stability of the highway reservation.**
3. **Be designed in accordance with 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.**

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 Macquarie Street highway reservation must be designed and constructed in accordance with:

- **Urban - TSD-R09-v1 – Urban Roads Driveways and TSD R14-v1 Type**

KC vehicular crossing.

- **Commercial Urban- TSD-R09-v1 – Urban Roads Driveways and TSD R16-v1 Type KCR & B1 or Type KCRB & B1.**
- **Footpath - Urban Roads Footpaths TSD-R11-v1.**

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. **Show on the plan any sort of modification of footpath, including pavement and surfacing reconstruction to the satisfaction of the Council's Director City Amenity.**
3. **Detail any services or infrastructure (i.e. light poles, pits, awnings) at or near the proposed driveway crossover.**
4. **Be designed for the expected vehicle loadings. A structural certificate to note that driveway is suitable for heavy vehicle loadings.**
5. **Show swept path templates in accordance with AS/NZS 2890.1 2004(B85 or B99 depending on use, design template).**
6. **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.**
7. **Show that vehicular and pedestrian sight lines are met as per AS/NZS 2890.1 2004.**
8. **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

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

A SWMP must be submitted prior to the issue of any approval under the *Building Act 2016* or the commencement of work, whichever occurs first. The SWMP must be prepared in accordance with the Soil and Water Management on Building and Construction Sites fact sheets (Derwent Estuary Program, 2008), available here.

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

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

ENVHE 2

A contamination Environmental Site Assessment report prepared by a suitably qualified and experienced person in accordance with the procedures and practices detailed in the National Environment Protection (Assessment of Site

Contamination) Measure 1999 (NEPM) as amended 2013 must be submitted to council prior to commencement of work. The report must conclude:

1. **Whether any site contamination presents a risk to workers involved in redevelopment of the site, or future users of the site, as a result of proposed excavation of the site.**
2. **Whether any site contamination presents an environmental risk from excavation conducted during redevelopment of the site.**
3. **Whether any specific remediation and/or protection measures are required to ensure proposed excavation does not adversely impact human health or the environment before excavation commences.**
4. **Based on the results of the Environmental Site Assessment that the excavation as part of the planned works will not adversely impact on human health or the environment (subject to implementation of any identified remediation and/or protection measures as required).**
5. **That the site is suitable for its intended Use.**

If the Environmental Site Assessment report concludes that remediation and/or protection measures are necessary to avoid risks to human health or the environment, a proposed remediation and/or management plan must be submitted prior to commencement of work. Any remediation or management plan involving soil disturbance must include a detailed soil and water management plan to prevent off-site transfer of potentially-contaminated soil or stormwater.

Reason for condition

To determine the level of site contamination, and to identify any recommended remediation/management practices/safeguards which need to be followed/put in place during any excavations/ground disturbance on, or for use of the site, to provide for a safe living environment.

ENVHE 4

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

A Construction Environmental Management Plan must be submitted and approved to the satisfaction of the Council's Director City Planning, prior to the commencement of works and prior to the granting of any building consent.

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

1. **Details of the proposed construction methodology and expected likely time frames.**

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:**

    1. **A noise and vibration management plan generally consistent with *AS 2436-2010 - Guide to Noise and Vibration Control on Construction, Demolition and Maintenance Sites* and the *Interim Construction Noise Guidelines* (New South Wales Department of Environment and Climate Change, July 2009) including, but not limited to:**
        1. **identification of potentially noisy or vibration-causing construction activities;**
        2. **procedures to ensure that all reasonable and feasible noise and vibration mitigation measures are applied during operation of the construction management plan; and**
        3. **details of monitoring measures and triggers for corrective actions.**

    2. **A soil and water management plan including:**
        1. **measures to minimise erosion and the discharge of contaminated stormwater off-site;**
        2. **measures to minimise dust emissions from the site;**
        3. **measures to manage the disposal of surface and groundwater from excavations; and**
        4. **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 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

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 Macquarie 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 or existing building encroachment over Macquarie Street is formalised in accordance with statutory provisions.

Part 5 r1

The owner(s) of the property must enter into an agreement with the Council pursuant to Part 5 of the *Land Use Planning and Approvals Act 1993* with respect to the protection and maintenance of the retaining wall adjacent to the Macquarie Street highway reservation prior to the commencement of work.

The owner must not undertake any works at any time (including excavation and building) that will have any effect on the integrity of the Macquarie Street highway reservation or any retaining structure adjacent to Macquarie

Street highway reservation or the road formation themselves or undermine the structural integrity of the highway reservation.

The ongoing maintenance of the retaining wall is the responsibility of the owner(s).

All costs for the preparation and registration of the Part 5 Agreement must be met by the owner.

The owner must comply with the Part 5 Agreement which will be placed on the property title.

Advice: For further information with respect to the preparation of a part 5 agreement please contact Council Development Engineering Staff.

Reason for condition

To ensure the protection of Council assets.

SUB s1

The two titles within the development site (CTs. 145283/1 and 145283/2) must be adhered in accordance with the provisions of s.110 of the *Local Government Building & Miscellaneous Provisions Act 1993* to the satisfaction of the Council's Director City Planning prior to the issue of any consent under the *Building Act 2016*.

Advice: The application for an Adhesion Order to the Council has a fee. 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 engrossed receipt of the Land Titles Office lodgment slip for the Adhesion Order has been received by the Council.

Reason for condition

To ensure compliance with statutory provisions.

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 PLANNING

If a condition endorsement is required by a planning condition above, you will need to submit the relevant documentation to satisfy the condition via the Condition Endorsement Submission on Council's online services e-planning portal.

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.

Once approved, the Council will respond to you via email that the condition has been endorsed (satisfied). Detailed instructions can be found here.

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.

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.

BUILDING OVER AN EASEMENT

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

PERMIT TO CONSTRUCT PUBLIC INFRASTRUCTURE

You may require a permit to construct public infrastructure, with a 12 month maintenance period and bond (please contact the Hobart City Council's City Amenity Division to initiate the permit process).

NEW SERVICE CONNECTION

Please contact the Hobart City Council's City Amenity Division to initiate the application process for your new stormwater connection.

PLANNING

The site is in the attenuation area of two late night music venues. Considerations should be given at building design stage to ensure that adequate acoustic treatments are implemented to mitigate potential noise impacts.

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.

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.

(Mark O'Brien)

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

(Ben Ikin)
Senior Statutory Planner

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

Date of Report: 8 October 2020

Attachment(s):

Attachment B - CPC Agenda Documents

Attachment C - Cultural Heritage Referral Officer Report

Attachment D - Senior Development Engineer Referral Officer Report

Attachment E - Urban Design Advisory Panel Minutes

Planning: #198214

Property

202-208 MACQUARIE STREET HOBART TAS 7000

People

Applicant
*
New Pleasant Investments No.2 Pty Ltd, by their Agent,
Ireneinc Planning and Urban Design

c/o 49 Tasma Street
NORTH HOBART TAS 7000
62349281
phil@ireneinc.com.au

Owner
*
Mobil Oil Australia Pty Ltd

664 Collins Street
DOCKLANDS VIC 3008
62349281
phil@ireneinc.com.au

Entered By
PHIL GARTRELL
49 TASMA STREET
NORTH HOBART TAS 7000
03 6234 9281
tim@ireneinc.com.au

Use

Multiple dwellings

Details

Have you obtained pre application advice?

- No

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

Are you applying for permitted visitor accommodation as defined by the State Government Visitor Accommodation Standards? Click on help information button for definition. If you are not the owner of the property you MUST include signed confirmation from the owner that they are aware of this application.
*

- No

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

- No

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

Details

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

Vacant Site

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

Residential apartments, tenancy space and childcare centre

Estimated cost of development
*

36000000.00

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?

- No

Documents

Required Documents

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

Plans (proposed, existing)
*
18052_200128_DA.pdf

Supporting Documents

Concept Servicing Plan
Civil Documentation - Gandy & Roberts.pdf

Traffic Impact Assessment
TIA 202 -206 Macquarie st 9 OCT 2019.doc.pdf

Archaeological Report
SoHAP 202-206 Macquarie Street.pdf

Planning Report
DA Planning Report 202-206 Macquarie Street - Final (11-02-20).pdf

Environmental Report - NFA and Site Audit
NFA - Hobart TO2603 - 6 November 2019.pdf

206 MACQUARIE STREET

DEVELOPMENT APPLICATION

DRAWING No.	DESCRIPTION
DA01	COVER PAGE
DA02	SITE PLAN
DA03	BASEMENT 2 FLOOR PLAN
DA04	BASEMENT 1 FLOOR PLAN
DA05	GROUND FLOOR PLAN
DA06	LEVEL 1 FLOOR PLAN
DA07	LEVEL 2 FLOOR PLAN
DA08	LEVEL 3-5 FLOOR PLAN
DA09	LEVEL 6 FLOOR PLAN
DA10	LEVEL 7 FLOOR PLAN
DA11	LEVEL 8 FLOOR PLAN
DA12	LEVEL 9 FLOOR PLAN
DA13	ROOF PLAN
DA14	SECTION
DA15	WEST ELEVATION
DA16	NORTH ELEVATION
DA17	EAST ELEVATION
DA18	SOUTH ELEVATION
DA19	3D ARTIST'S IMPRESSION 1
DA20	3D ARTIST'S IMPRESSION 2

EXECUTIVE SUMMARY

FLOOR LEVEL	CAR PARKS	APARTMENTS	COMMERCIAL
BASEMENT 2	23	-	-
BASEMENT 1	22	-	-
GROUND	-	-	2 TENANTS
LEVEL 1	-	-	1 TENANT
LEVEL 2	-	7	-
LEVEL 3	-	7	-
LEVEL 4	-	7	-
LEVEL 5	-	7	-
LEVEL 6	-	4	-
LEVEL 7	-	4	-
LEVEL 8	-	4 (INC. 2 PENTHOUSES)	-
LEVEL 9	-	2ND LEVEL OF PENTHOUSES	
TOTAL	45	40	2

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ARCHITECTSJAWS

PROJECT

MACQUARIE ST APARTMENTS

206 Macquarie Street HOBART TAS 7000 AUSTRALIA

For

NEW PLEASANT N0.2 PTY.LTD

DRAWING

SCALE	1:2000 @ A3
DATE	12/06/2020
DRAWN	
CHECKED	
ACCREDITED DESIGNER	
ACCREDITED NUMBER	
PLOT DATE	27/08/2020
CAD REF	P:\18052 206 Macquarie St Hob\14.0 Drawings\14.1 Current\18052 - 206 MACQUARIE ST_DA Rev05.pln

PROJECT NORTH

ISSUE

DEVELOPMENT APPLICATION

DRAWING NAME

COVER PAGE

DRAWING NO

18052_DA01

REVISION

05 COUNCIL RFI
04 COUNCIL RFI
03 COUNCIL RFI
02 DEVELOPMENT APPLICATION

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ARCHITECTSJAWS

PROJECT

MACQUARIE ST APARTMENTS

206 Macquarie Street HOBART TAS 7000 AUSTRALIA

For

NEW PLEASANT N0.2 PTY.LTD

DRAWING

SCALE	1:500 @ A3
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ACCREDITED NUMBER	
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PROJECT NORTH

ISSUE

DEVELOPMENT APPLICATION

DRAWING NAME

SITE PLAN

DRAWING NO

18052_DA02

REVISION

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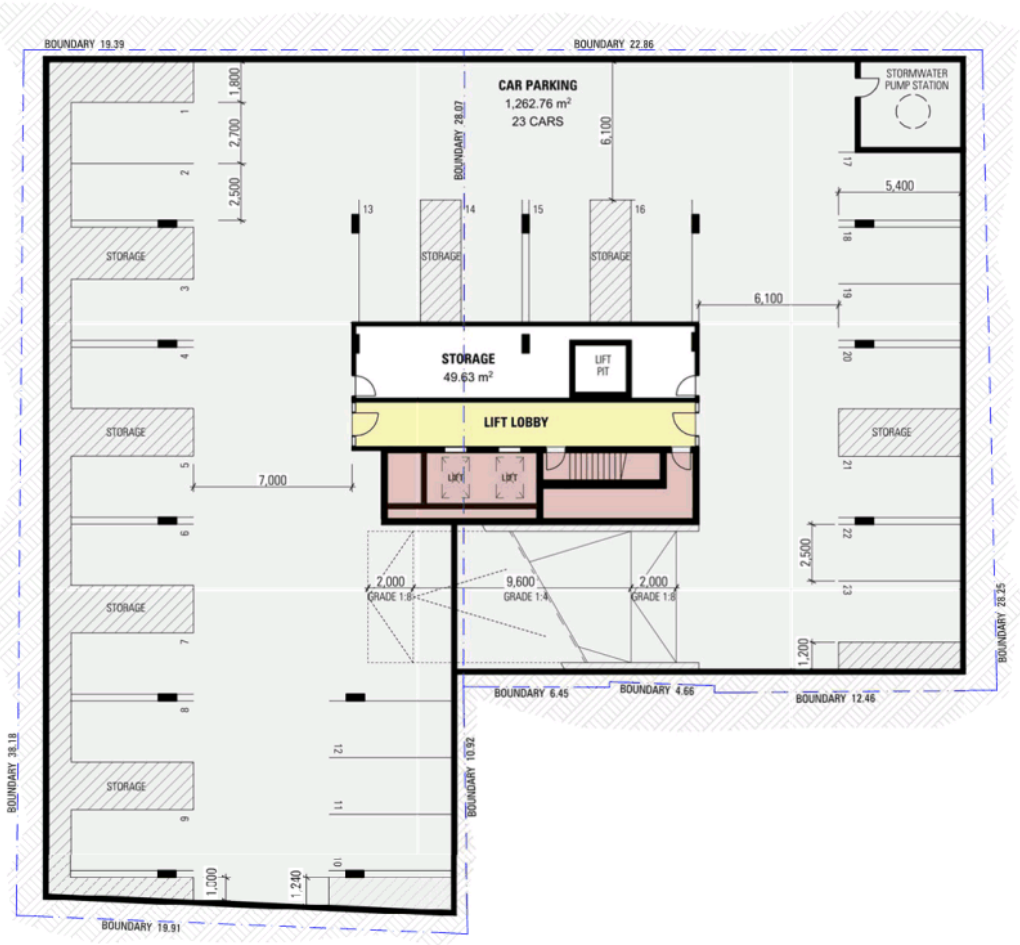
04 COUNCIL RFI
03 COUNCIL RFI
02 DEVELOPMENT APPLICATION



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JAWS ARCHITECTS

PROJECT

MACQUARIE ST APARTMENTS
206 Macquarie Street HOBART TAS 7000 AUSTRALIA
For
NEW PLEASANT N0.2 PTY.LTD

DRAWING

SCALE	1:200 @ A3
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ACCREDITED DESIGNER	
ACCREDITED NUMBER	
PLOT DATE	27/08/2020
CAD REF	P:\18052 206 Macquarie St Hobart\4.0 Drawings\14.1 Current\18052 - 206 MACQUARIE ST_DA Rev05.pln

PROJECT NORTH

ISSUE

DEVELOPMENT APPLICATION

DRAWING NAME

BASEMENT 2 FLOOR PLAN

DRAWING NO

18052_DA03

REVISION

05 COUNCIL RFI
04 COUNCIL RFI
03 COUNCIL RFI
02 DEVELOPMENT APPLICATION

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ARCHITECTSJAWS

PROJECT

MACQUARIE ST APARTMENTS
206 Macquarie Street HOBART TAS 7000 AUSTRALIA
For
NEW PLEASANT N0.2 PTY.LTD

DRAWING

SCALE	1:200 @ A3
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DRAWN	
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ACCREDITED NUMBER	
PLOT DATE	27/08/2020
CAD REF	P:\18052 206 Macquarie St Hobart\4.0 Drawings\4.1 Current\18052 - 206 MACQUARIE ST_DA Rev05.pln

PROJECT NORTH

ISSUE

DEVELOPMENT APPLICATION

DRAWING NAME

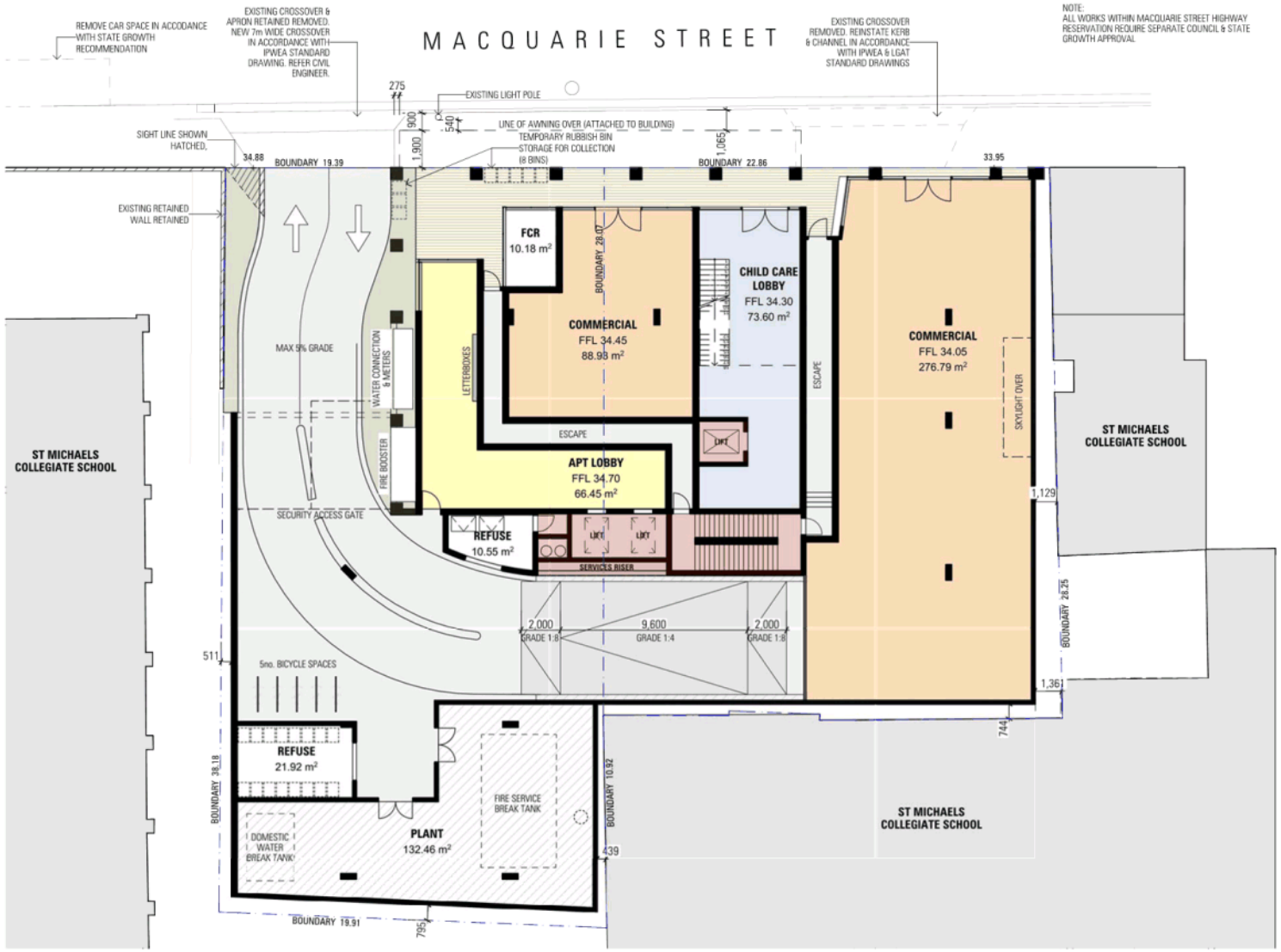
BASEMENT 1 FLOOR PLAN

DRAWING NO

18052_DA04

REVISION

05 COUNCIL RFI
04 COUNCIL RFI
03 COUNCIL RFI
02 DEVELOPMENT APPLICATION



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JAWS ARCHITECTS

PROJECT

MACQUARIE ST APARTMENTS

206 Macquarie Street HOBART TAS 7000 AUSTRALIA

For

NEW PLEASANT N0.2 PTY.LTD

DRAWING

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DRAWN	
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CAD REF	P:\18052 206 Macquarie St Hobart\4.0 Drawings\14.1 Current\18052 - 206 MACQUARIE ST_DA Rev05.pln

PROJECT NORTH

ISSUE

DEVELOPMENT APPLICATION

DRAWING NAME

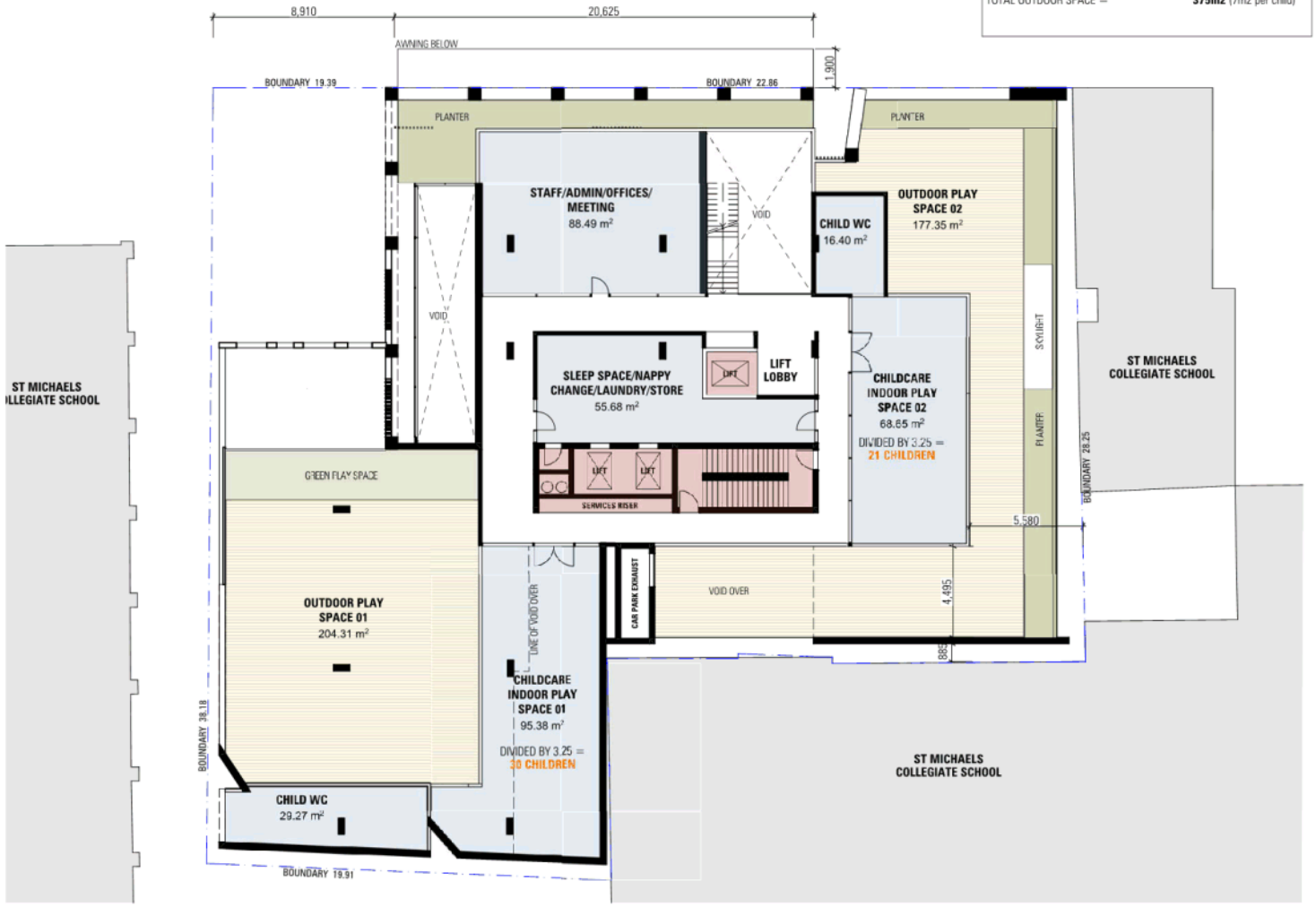
GROUND FLOOR PLAN

DRAWING NO

18052_DA05

REVISION

05 COUNCIL RFI
04 COUNCIL RFI
03 COUNCIL RFI
02 DEVELOPMENT APPLICATION



EARLY CHILDHOOD CENTRE REQUIREMENTS

- 3.25m2 of unencumbered indoor space per child
- 7m2 of unencumbered outdoor space per child

TOTAL INDOOR PLAY AREA PROVIDED =	**164m2**
TOTAL PLACES (3.25m2 per child) =	**51 CHILDREN**
TOTAL OUTDOOR SPACE =	**375m2** (7m2 per child)

0 1 2 3 4 5 6 8 10 Metres @ 1:200

DO NOT SCALE DRAWINGS. WRITTEN DIMENSIONS GOVERN. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE. THIS DRAWING MUST BE READ IN CONJUNCTION WITH ALL RELEVANT CONTRACTS, SPECIFICATIONS, REPORTS AND DRAWINGS.

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ARCHITECTSJAWS

PROJECT

MACQUARIE ST APARTMENTS

206 Macquarie Street HOBART TAS 7000 AUSTRALIA

For

NEW PLEASANT N0.2 PTY.LTD

DRAWING

SCALE	1:200 @ A3
DATE	12/06/2020
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ACCREDITED DESIGNER	
ACCREDITED NUMBER	
PLOT DATE	27/08/2020
CAD REF	P:\18052 206 Macquarie St Hob\14.0 Drawings\14.1 Current\18052 - 206 MACQUARIE ST_DA Rev05.pln

PROJECT NORTH

ISSUE

DEVELOPMENT APPLICATION

DRAWING NAME

LEVEL 1 FLOOR PLAN

DRAWING NO

18052_DA06

REVISION

05 COUNCIL RFI
04 COUNCIL RFI
03 COUNCIL RFI
02 DEVELOPMENT APPLICATION

0 1 2 3 4 5 6 8 10 Metres @ 1:200

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PROJECT

MACQUARIE ST APARTMENTS

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For

NEW PLEASANT N0.2 PTY.LTD

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PROJECT NORTH

ISSUE

DEVELOPMENT APPLICATION

DRAWING NAME

LEVEL 2 FLOOR PLAN

DRAWING NO

18052_DA07

REVISION

05 COUNCIL RFI
04 COUNCIL RFI
03 COUNCIL RFI
02 DEVELOPMENT APPLICATION

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MACQUARIE ST APARTMENTS
206 Macquarie Street HOBART TAS 7000 AUSTRALIA
For
NEW PLEASANT N0.2 PTY.LTD

DRAWING

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DATE	12/06/2020
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PROJECT NORTH

ISSUE

DEVELOPMENT APPLICATION

DRAWING NAME

LEVEL 3-5 FLOOR PLAN

DRAWING NO

18052_DA08

REVISION

05 COUNCIL RFI
04 COUNCIL RFI
03 COUNCIL RFI
02 DEVELOPMENT APPLICATION

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MACQUARIE ST APARTMENTS

206 Macquarie Street HOBART TAS 7000 AUSTRALIA

For

NEW PLEASANT N0.2 PTY.LTD

DRAWING

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PLOT DATE	27/08/2020
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PROJECT NORTH

ISSUE

DEVELOPMENT APPLICATION

DRAWING NAME

LEVEL 6 FLOOR PLAN

DRAWING NO

18052_DA09

REVISION

05 COUNCIL RFI
04 COUNCIL RFI
03 COUNCIL RFI
02 DEVELOPMENT APPLICATION

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PROJECT

MACQUARIE ST APARTMENTS

206 Macquarie Street HOBART TAS 7000 AUSTRALIA

For

NEW PLEASANT N0.2 PTY.LTD

DRAWING

SCALE	1:200 @ A3
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PLOT DATE	27/08/2020
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PROJECT NORTH

ISSUE

DEVELOPMENT APPLICATION

DRAWING NAME

LEVEL 7 FLOOR PLAN

DRAWING NO

18052_DA10

REVISION

05 COUNCIL RFI
04 COUNCIL RFI
03 COUNCIL RFI
02 DEVELOPMENT APPLICATION

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MACQUARIE ST APARTMENTS

206 Macquarie Street HOBART TAS 7000 AUSTRALIA

For

NEW PLEASANT N0.2 PTY.LTD

DRAWING

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PLOT DATE	27/08/2020
CAD REF	P:\18052 206 Macquarie St Hob\14.0 Drawings\14.1 Current\18052 - 206 MACQUARIE ST_DA Rev05.pln

PROJECT NORTH

ISSUE

DEVELOPMENT APPLICATION

DRAWING NAME

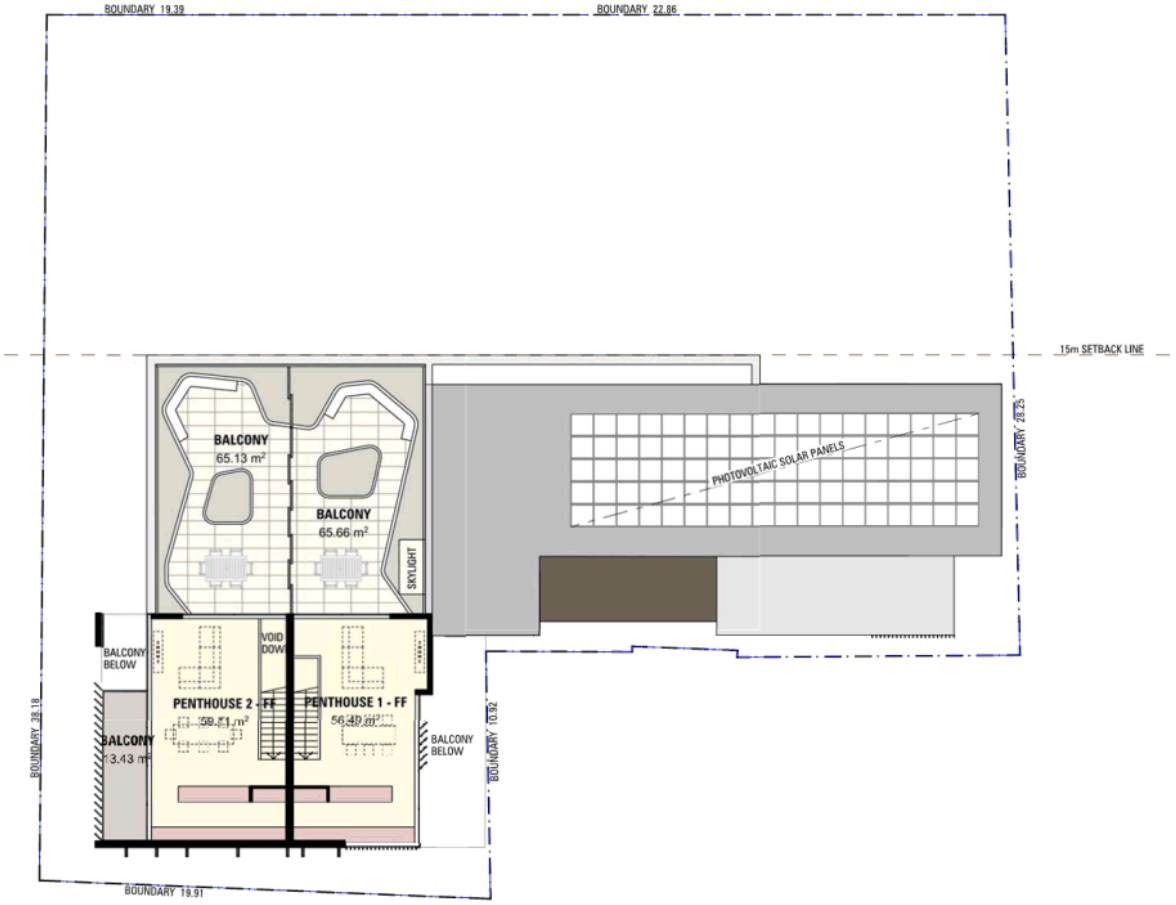
LEVEL 8 FLOOR PLAN

DRAWING NO

18052_DA11

REVISION

05 COUNCIL RFI
04 COUNCIL RFI
03 COUNCIL RFI
02 DEVELOPMENT APPLICATION



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JAWS ARCHITECTS

PROJECT

MACQUARIE ST APARTMENTS

206 Macquarie Street HOBART TAS 7000 AUSTRALIA

For

NEW PLEASANT N0.2 PTY.LTD

DRAWING

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PROJECT NORTH

ISSUE

DEVELOPMENT APPLICATION

DRAWING NAME

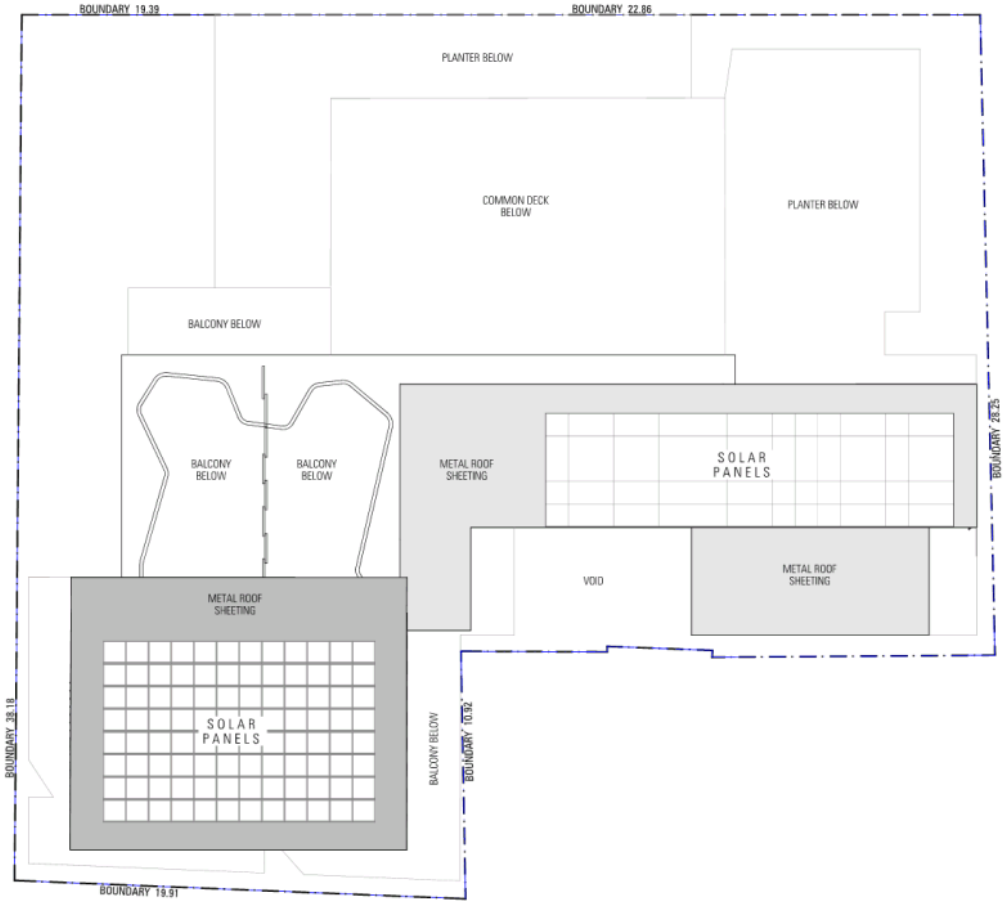
LEVEL 9 FLOOR PLAN

DRAWING NO

18052_DA12

REVISION

05 COUNCIL RFI
04 COUNCIL RFI
03 COUNCIL RFI
02 DEVELOPMENT APPLICATION



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PROJECT NORTH

ISSUE

DEVELOPMENT APPLICATION

DRAWING NAME

ROOF PLAN

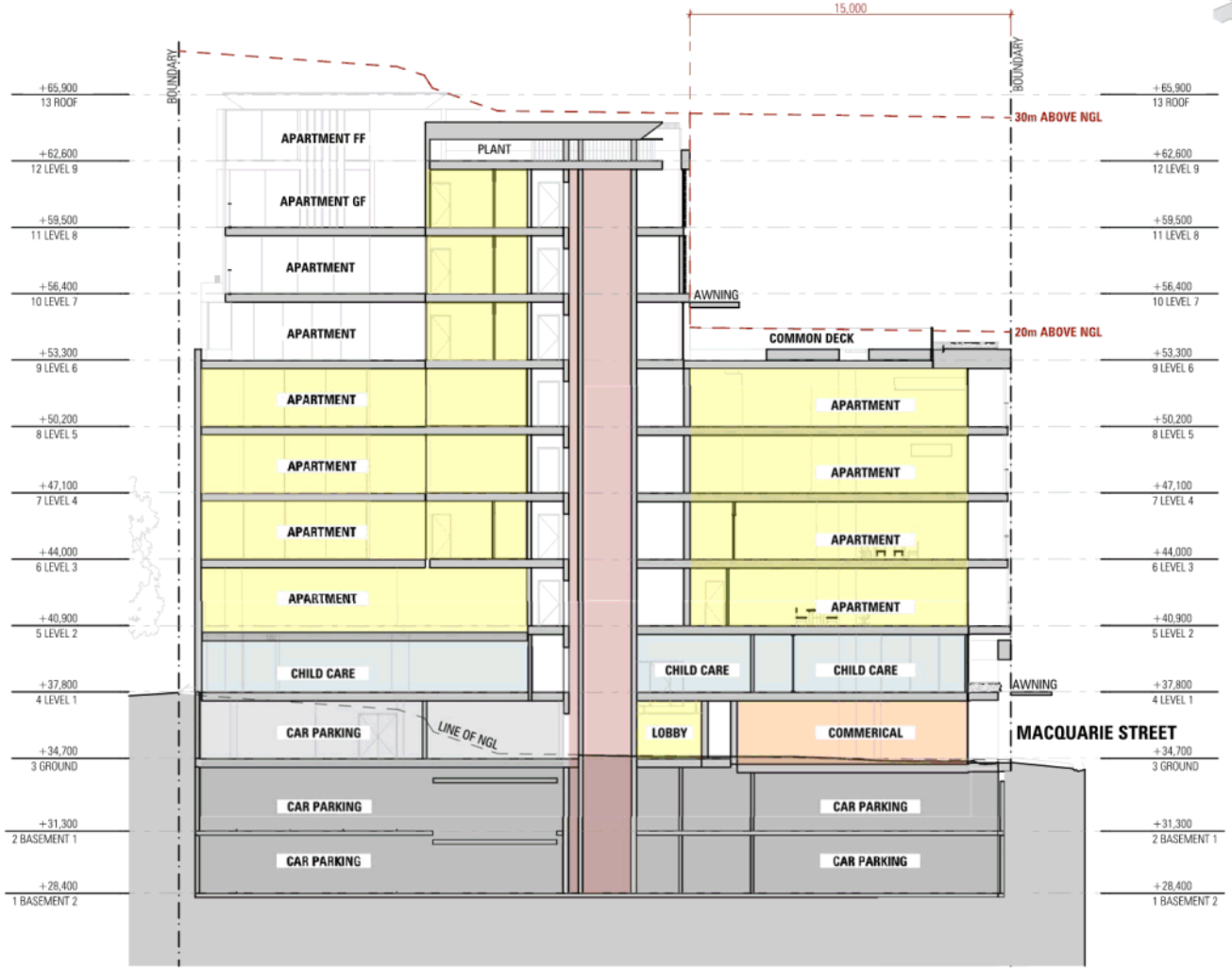
DRAWING NO

18052_DA13

REVISION

05 COUNCIL RFI
04 COUNCIL RFI
03 COUNCIL RFI
02 DEVELOPMENT APPLICATION

3D ENVELOPE MODEL



1 SECTION
Scale 1:200

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DRAWING

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PROJECT NORTH

ISSUE

DEVELOPMENT APPLICATION

DRAWING NAME

SECTION

DRAWING NO

18052_DA14

REVISION

05 COUNCIL RFI
04 COUNCIL RFI
03 COUNCIL RFI
02 DEVELOPMENT APPLICATION

WEST ELEVATION / MACQUARIE ST ELEVATION
SCALE 1:200

0 1 2 3 4 5 6 8 10 Metres @ 1:200

EXTERNAL MATERIAL KEY

- **AL** Powdercoated Aluminium Privacy Screen
- **BAL** Painted metal balustrade
- **FC01** Fibre Cement Sheet type 1
- **FC02** Fibre Cement Sheet type 2
- **GL** Glazing
- **MA01** Masonry wall type 1
  Nubrik Traditional Chapel Red or equivalent
  Laid Stretcher Bond
- **MA02** Masonry / Concrete wall type 2

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PROJECT

MACQUARIE ST APARTMENTS
206 Macquarie Street HOBART TAS 7000 AUSTRALIA
For
NEW PLEASANT No.2 PTY.LTD

DRAWING

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PLOT DATE	27/08/2020
CAD REF	P:\18052 206 Macquarie St Hobart\14.0 Drawings\14.1 Current\18052 - 206 MACQUARIE ST_DA Rev05.pln

ISSUE

DEVELOPMENT APPLICATION

DRAWING NAME

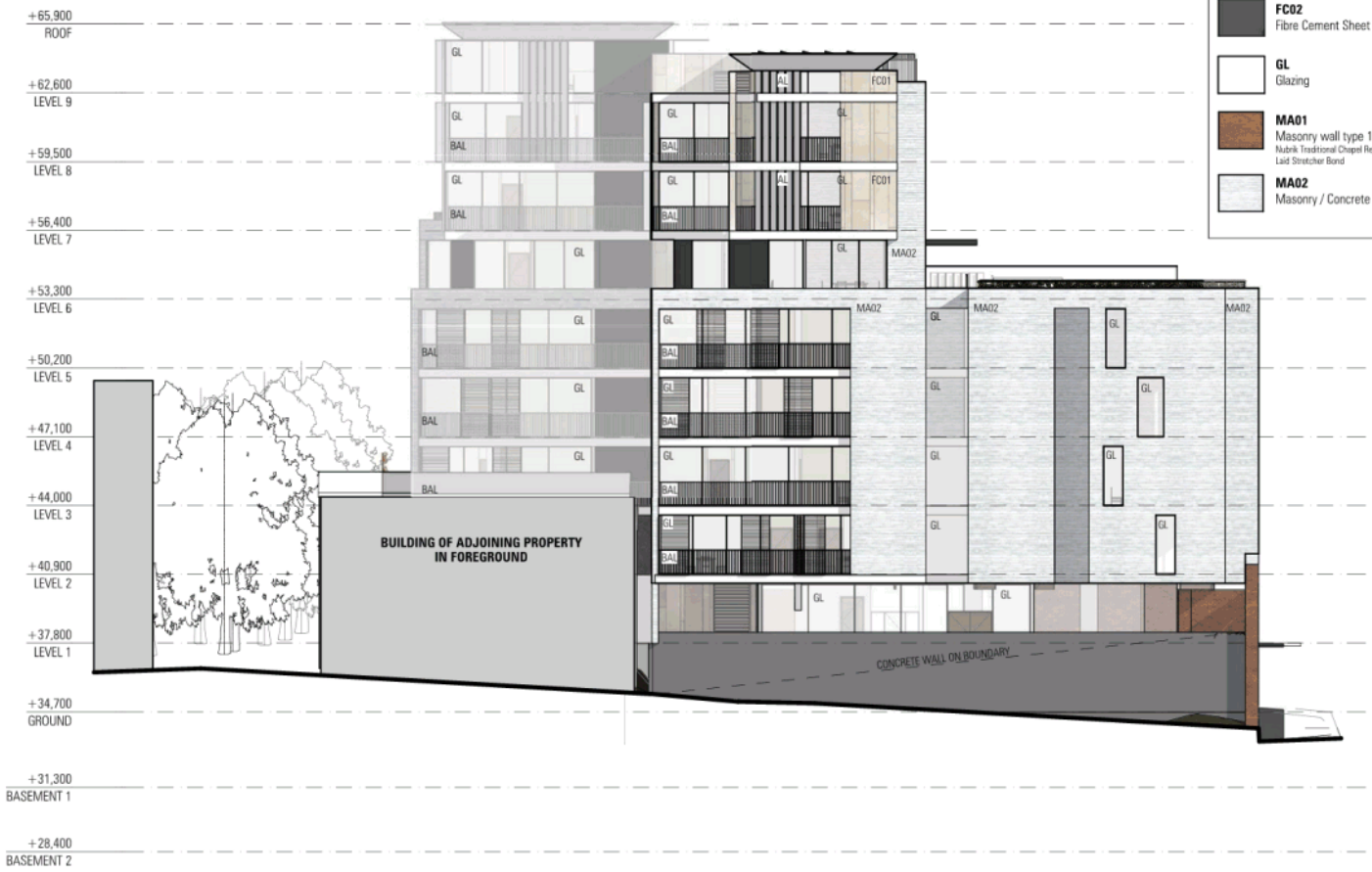
WEST ELEVATION

DRAWING NO

18052_DA15

REVISION

05 COUNCIL RFI
04 COUNCIL RFI
03 COUNCIL RFI
02 DEVELOPMENT APPLICATION



NORTH ELEVATION
SCALE 1:200

0 1 2 3 4 5 6 8 10 Metres @ 1:200

EXTERNAL MATERIAL KEY

- **AL** Powdercoated Aluminium Privacy Screen
- **BAL** Painted metal balustrade
- **FC01** Fibre Cement Sheet type 1
- **FC02** Fibre Cement Sheet type 2
- **GL** Glazing
- **MA01** Masonry wall type 1
  Nubrik Traditional Chapel Red or equivalent
  Laid Stretcher Bond
- **MA02** Masonry / Concrete wall type 2

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PLOT DATE	27/08/20
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ISSUE

DEVELOPMENT APPLICATION

DRAWING NAME

NORTH ELEVATION

DRAWING NO

18052_DA16

REVISION

05 COUNCIL RFI
04 COUNCIL RFI
03 COUNCIL RFI
02 DEVELOPMENT APPLICATION

EAST ELEVATION
SCALE 1:200

0 1 2 3 4 5 6 8 10 Metres @ 1:200

EXTERNAL MATERIAL KEY

- **AL** Powdercoated Aluminium Privacy Screen
- **BAL** Painted metal balustrade
- **FC01** Fibre Cement Sheet type 1
- **FC02** Fibre Cement Sheet type 2
- **GL** Glazing
- **MA01** Masonry wall type 1
  Nubrik Traditional Chapel Red or equivalent Laid Stretcher Bond
- **MA02** Masonry / Concrete wall type 2

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JAWS ARCHITECTS

PROJECT

MACQUARIE ST APARTMENTS
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For
NEW PLEASANT No.2 PTY.LTD

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PLOT DATE	27/08/2020
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ISSUE

DEVELOPMENT APPLICATION

DRAWING NAME

EAST ELEVATION

DRAWING NO

18052_DA17

REVISION

05 COUNCIL RFI
04 COUNCIL RFI
03 COUNCIL RFI
02 DEVELOPMENT APPLICATION

SOUTH ELEVATION
SCALE 1:200

0 1 2 3 4 5 6 8 10 Metres @ 1:200

EXTERNAL MATERIAL KEY

- **AL** Powdercoated Aluminium Privacy Screen
- **BAL** Painted metal balustrade
- **FC01** Fibre Cement Sheet type 1
- **FC02** Fibre Cement Sheet type 2
- **GL** Glazing
- **MA01** Masonry wall type 1 — Nubrik Traditional Chapel Red or equivalent Laid Stretcher Bond
- **MA02** Masonry / Concrete wall type 2

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PROJECT

MACQUARIE ST APARTMENTS
206 Macquarie Street HOBART TAS 7000 AUSTRALIA
For
NEW PLEASANT No.2 PTY.LTD

DRAWING

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ISSUE

DEVELOPMENT APPLICATION

DRAWING NAME

SOUTH ELEVATION

DRAWING NO

18052_DA18

REVISION

05 COUNCIL RFI
04 COUNCIL RFI
03 COUNCIL RFI
02 DEVELOPMENT APPLICATION

VIEW TOWARDS BARRACK STREET

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MACQUARIE ST APARTMENTS

206 Macquarie Street HOBART TAS 7000 AUSTRALIA

For

NEW PLEASANT N0.2 PTY.LTD

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PROJECT NORTH

ISSUE

DEVELOPMENT APPLICATION

DRAWING NAME

3D ARTIST'S IMPRESSION 1

DRAWING NO

18052_DA19

REVISION

05 COUNCIL RFI
04 COUNCIL RFI
03 COUNCIL RFI
02 DEVELOPMENT APPLICATION

VIEW TOWARDS MOLLE STREET

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PROJECT

MACQUARIE ST APARTMENTS

206 Macquarie Street HOBART TAS 7000 AUSTRALIA

For

NEW PLEASANT N0.2 PTY.LTD

DRAWING

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PROJECT NORTH

ISSUE

DEVELOPMENT APPLICATION

DRAWING NAME

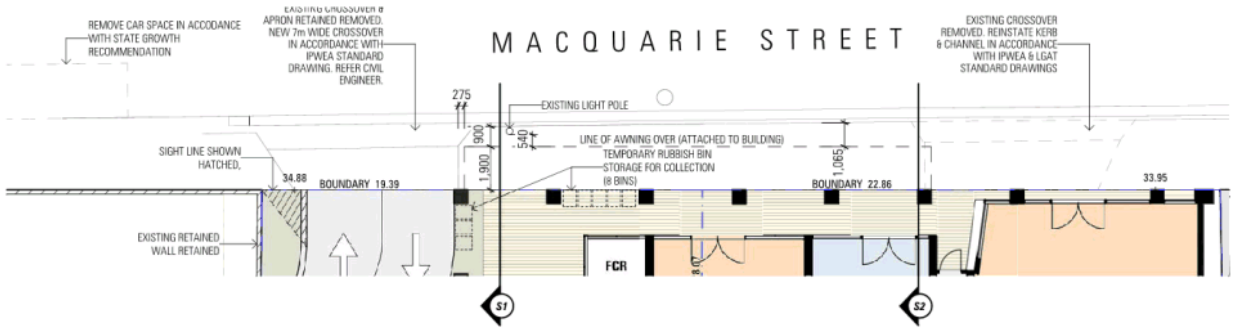
3D ARTIST'S IMPRESSION 2

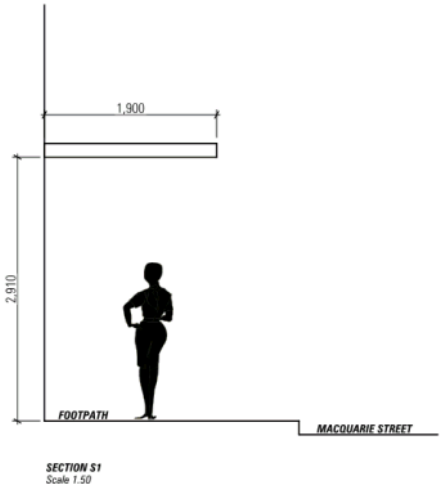
DRAWING NO

18052_DA20

REVISION

05 COUNCIL RFI
04 COUNCIL RFI
03 COUNCIL RFI
02 DEVELOPMENT APPLICATION





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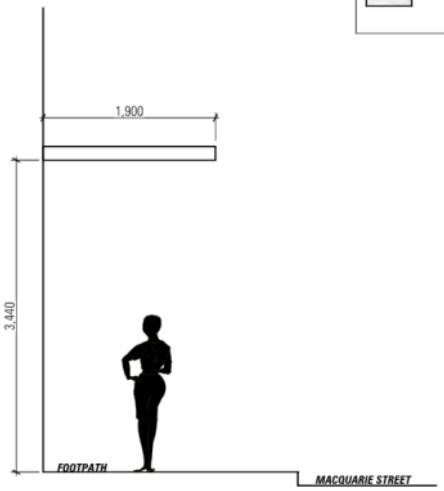

SECTION S2
Scale 1.50

EXTERNAL MATERIAL KEY

- **AL** Powdercoated Aluminium Privacy Screen
- **BAL** Painted metal balustrade
- **FC01** Fibre Cement Sheet type 1
- **FC02** Fibre Cement Sheet type 2
- **GL** Glazing
- **MA01** Masonry wall type 1
  Nubrik Traditional Chapel Red or equivalent
  Laid Stretcher Bond
- **MA02** Masonry / Concrete wall type 2

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ARCHITECTSJAWS

PROJECT

MACQUARIE ST APARTMENTS
206 Macquarie Street HOBART TAS 7000 AUSTRALIA
For
NEW PLEASANT No.2 PTY.LTD

DRAWING

SCALE	1:200, 1:50 @ A3
DATE	11/10/2019
DRAWN	
CHECKED	
ACCREDITED DESIGNER	
ACCREDITED NUMBER	
PLOT DATE	27/08/2020
CAD REF	P:\18052 206 Macquarie St Hobart\4.0 Drawings\4.1 Current\18052 - 206 MACQUARIE ST_DA Rev05.pln

ISSUE

DEVELOPMENT APPLICATION

DRAWING NAME

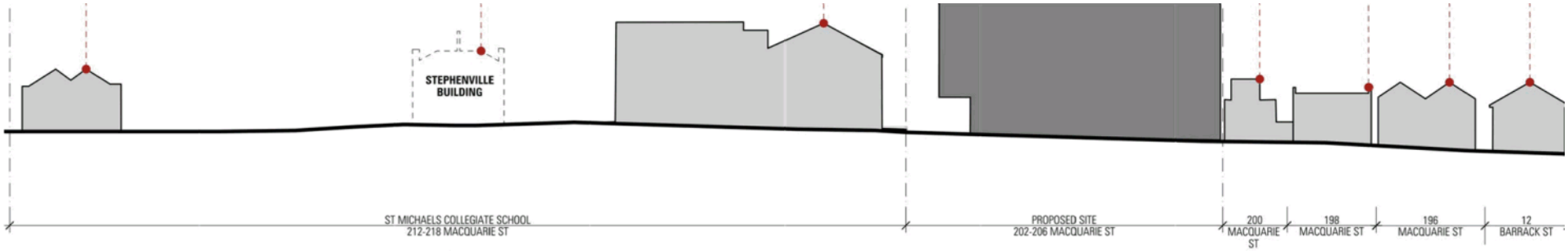
FOOTPATH AWNING

DRAWING NO

18052_ENG Fi2.

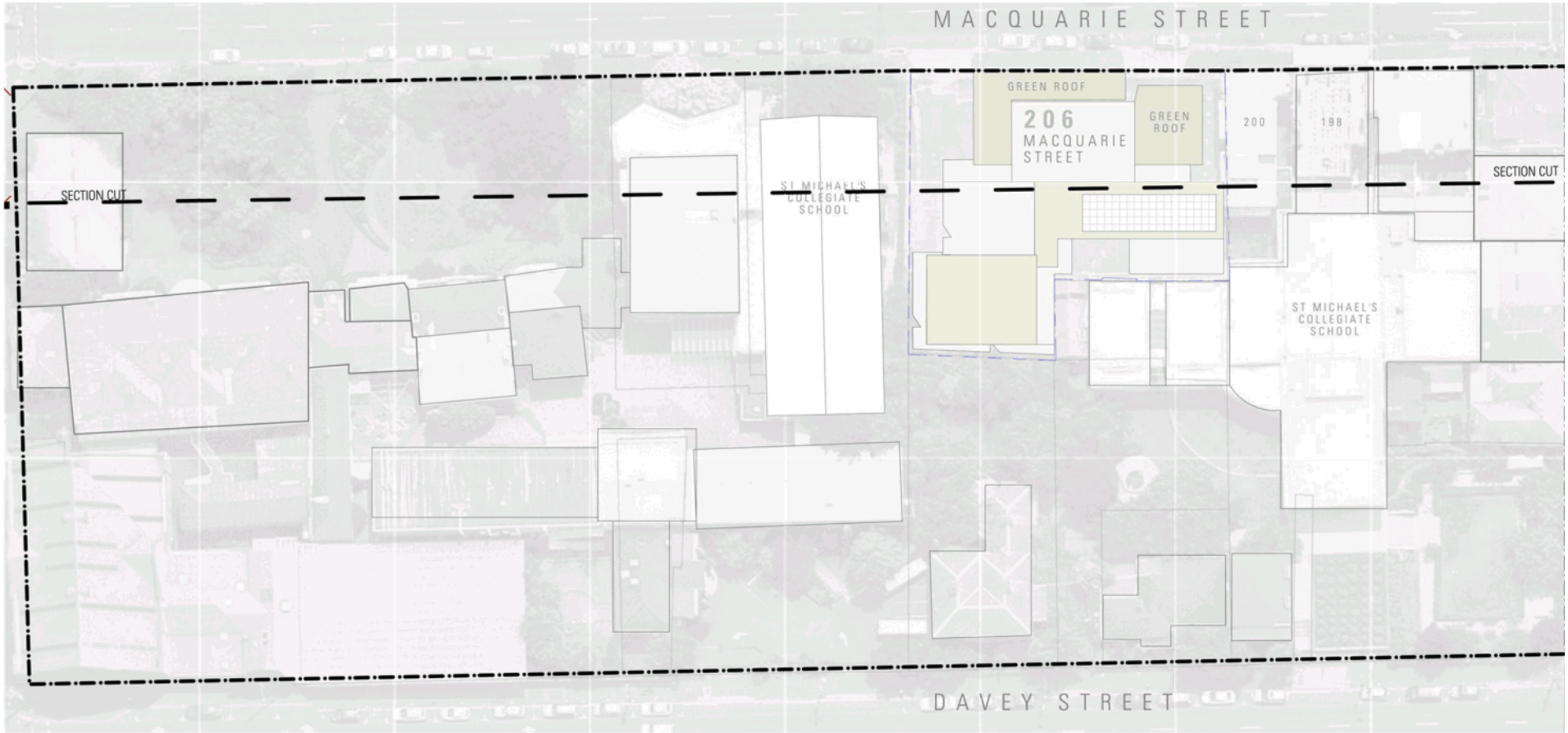
REVISION

05 COUNCIL RFI
04 COUNCIL RFI
03 COUNCIL RFI
02 DEVELOPMENT APPLICATION



MOLLE ST - BARRACK STREET

*S PREPARED THE ABOVE SECTION WITH
BY HOBART CITY COUNCIL 3D MODEL. THE
EREFORE APPROXIMATE ONLY.*



202-206 MACQUARIE STREET, HOBART

ireneinc & smithstreetstudio
PLANNING & URBAN DESIGN

PLANNING TAS PTY LTD TRADING AS IRENEINC PLANNING & SMITH STREET STUDIO PLANNING & URBAN DESIGN ABN 78 114 905 074

202-206 MACQUARIE STREET, HOBART

Planning Submission to Hobart City Council

Last Updated - August 2020
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1. INTRODUCTION

Planning Tas trading as Ireneinc Planning and Urban Design have prepared the following assessment on behalf of New Pleasant Investment Pty. Ltd. to accompany an application for the use and development of land at 202-206 Macquarie Street, Hobart.

This report has been prepared in response to plans prepared by JAWS Architecture.

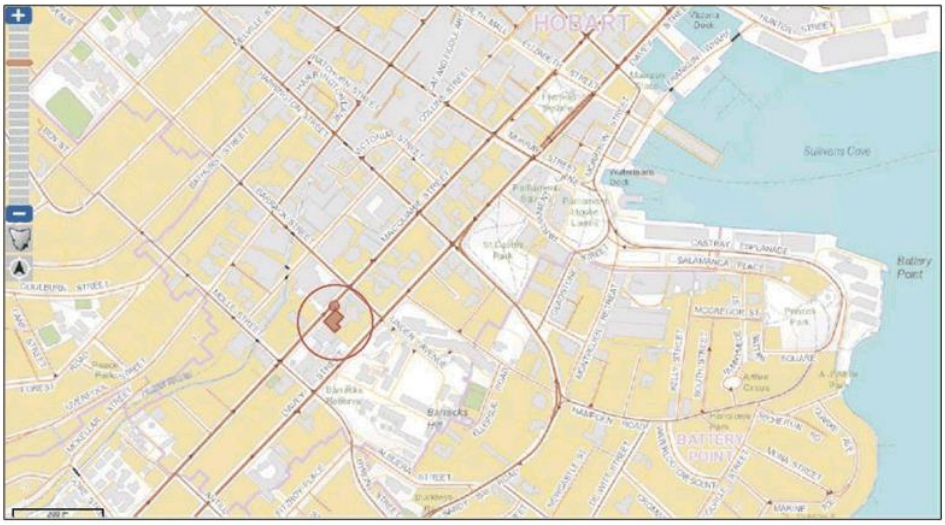

Figure 1: Site location (bounded in red), Hobart city centre context (source: The LIST).

1.1 SUBJECT SITE

The subject land is located at 202-206 Macquarie Street, Hobart, see figures 2 and 3, below. The site area is approximately 1419 m^2. The frontage of the site is on the north west boundary, addressing Macquarie Street and the fall of the land is towards the frontage (from south/east to north west), with an incline along Macquarie Street also, (land rising from north/east towards the south-west).

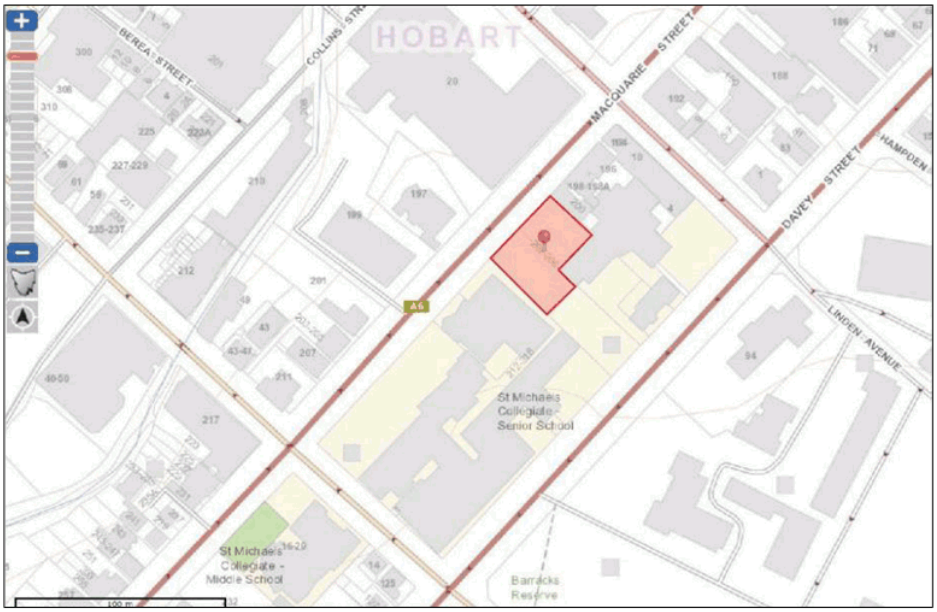

Figure 2: Site location, local context, site bounded in red (image source: The LIST).

The site consists of two land titles:

Title reference **145283/1**, (property ID 5669117), property address 202-206 Macquarie St, illustrated in Figure 4, below.

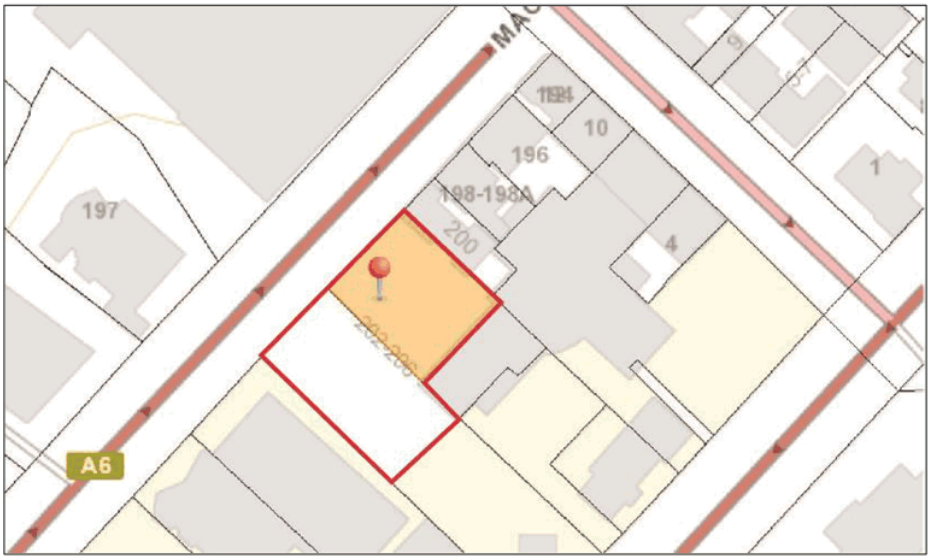

Figure 3: Cadastral parcel, title reference 145283/1 (image source: The LIST).

Title reference **145283/2**, (property ID 5669117), property address 202-206 Macquarie St, illustrated in Figure 5, below.

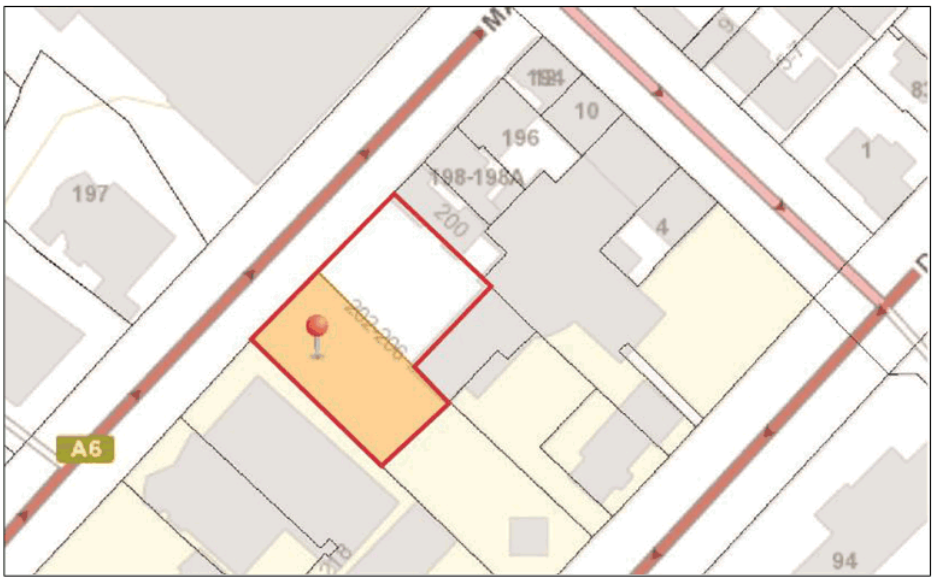

Figure 4: Cadastral parcel, title reference 145283/2 (image source: The LIST).

The site is currently vacant and has no existing buildings. The previous use on the site was a petrol station. This use was demolished in the early 2000s and the site has subsequently remained vacant as part of the land decontamination process.

Figure 5: Aerial image with site boundary, urban block scale (Image source: The LIST)

Figure 6: Aerial image, street frontage scale (Image source: The LIST)

The site has two points of access from Macquarie Street. The site is accessed via two dropped kerbs and crossover points across the footpath pavement to Macquarie Street, each dropped kerb and crossover point is approximately 7m wide fronting Macquarie Street. Currently the vacant site is fenced for security and the two access points are gated.

An existing sewer exists on the site. It is proposed to relocate the sewer as part of the development works, which will be required as to facilitate construction, notably with the proposed creation of a basement.

A sewer main runs along the boundary of the two titles, through to the rear adjoining property. A water main runs parallel to the site along Macquarie Street.

Figure 7: Frontage of existing vacant site to Macquarie Street (Source: Google Street View, October 2018).

1.2 SITE SURROUNDS

The site surrounds are defined by the St Michael's Collegiate School which wraps around the subject site to the south west, south, east and north east, and occupying the majority of the urban block that is bounded by Macquarie Street (to the north west), Davey Street (to the south east), Barrack Street (to the north east) and Molle Street (to the south west).

The urban grain is defined by the grid street pattern with a network of wide streets that intersect at regular intervals, with a series of rectilinear urban blocks contained within the network of streets.

See figure 9 for an oblique aerial view of the site in this urban context, including other notable surrounding features.

Figure 8: Oblique aerial view of the site (bounded in red) and setting in the context of urban blocks (image source: Bing Maps, Microsoft https://www.bing.com/maps).

St. Michael's Collegiate School

- The School is an important neighbouring site and land use, particularly as the school premises surround the subject site on three sides. The school includes a number of historic heritage buildings and areas of landscape that provide a rich green setting for areas of the school. The school has a number of larger buildings including Linmor Hall which is immediately adjacent the south west boundary of the application. On the corner of Molle Street and Davey Street is the Collegiate Pool building.

Mixed uses

- The corner of Macquarie Street and Barrack Street, immediately to the north/east of the site, is defined by a series of smaller buildings, that accommodate a range of mixed uses including restaurants and residential.
- Macquarie Street (north-west side) on the opposite side of the street to the site has a number of mixed uses housed in buildings that provide frontage to the street, including residential, offices and bed and breakfast accommodation.
- The urban block between Barrack Street, Macquarie Street and Davey Street, to the north-east of the site contains a wide variety of building types and different land uses, a mixed use block with uses including residential, offices, food and drink.

Figure 9: View facing south along the vista of Macquarie Street, with the application site on the left hand side (vacant land, fenced), adjacent to Collegiate School's Linmor Hall (red brick and roof), with mixed uses on opposite side of Macquarie Street (car sales, offices) on right hand side. (Image source: Google Street View, Google Earth).

- The corner of Macquarie Street and Barrack Street, immediately to the north-west of the site, is characterised by a car sales and vehicle servicing premises, a land use that has a relatively large building footprint and large areas for car parking and servicing. Further car sales and servicing in the area include further north east on Macquarie Street.
- Anglesea Barracks is located to the south east of the site, a significant military site for Hobart and Tasmania. The barracks includes the Army Museum of Tasmania and several historic

buildings of heritage interest. In common with the institutional site of the Collegiate School the barracks site includes areas of landscape and mature trees which help create a rich landscaped setting.

- The Department of Health and Human Services facility on Davey street is located to the east of the site. It is notable for the larger scale and massing of the built form which includes a larger building of between four to five storeys building height plus roof top plant. This larger building is set back from the street frontage behind areas of parking and landscape.
- Australian Taxation Office is a large building at the corner of Barrack Street and Collins Street, of four to five storeys building height, plus roof top plant, set over a large expanse of site area, thus creating a dominant built form in the local area, in what may be described as a post-modern architectural style.
- 181-183 Macquarie Street present an alternative form of offices, with office accommodation provided in a refurbished heritage building that creates a distinctive historic form addressing both Macquarie Street and Barrack Street. This site is diagonally opposite the urban block that contains the application site and Collegiate School.
- 188 Collins Street includes a complex of office and mixed use buildings ranging from six storeys building height immediately fronting Collins Street through to one of Hobart's tallest buildings with approximately 15 storeys in the tallest tower building set back from Collins Street, also with frontage to Harrington Street.
- Hotel (Travelodge); this recently constructed building is circa 10 storeys high, another taller building, located adjacent to the 188 Collins office tall buildings. This hotel building is in more contemporary architectural form and defines the corner of Macquarie Street and Harrington Street.

Figure 10: View facing north along the vista of Macquarie Street, with the application site on the *right-hand side* (vacant land, fenced). Mixed uses on opposite side of Macquarie Street (car sales, offices) on *left-hand side*. Taller buildings in mid-distance include 188 Collins Street (tallest building left of centre) and Travelodge Hotel (red brick, central, to left-hand side of Macquarie Street). (Image source: Google Street View, Google Earth).

1.3 CONSULTATION

Consultation has been undertaken with the Collegiate School, in particular in relation to the treatment of elevations which face the school. Milan Prodanovic Traffic Engineering and Road Safety has also consulted with State Growth regarding the development application and access to Macquarie Street, which has been considered in this proposal.

2. PROPOSAL

2.1 PROPOSED USE AND DEVELOPMENT

The proposal involves the redevelopment of the currently vacant land within the land title boundaries of 202-206 Macquarie Street. The new works are to facilitate use and development for a mixed-use building. Uses proposed include:

- 40 residential apartments.
- 1 early year's childcare centre.
- 2 ground floor commercial spaces with street frontage to Macquarie Street.

Ground Floor

The ground floor includes provision for two commercial tenancies that are centrally located in the site's street frontage. The ground floor also has lobby, service and access areas for other uses including to the child care facility (located on the first floor) and the lobby for the residential apartments on the upper floors. Cumulatively these ground floor uses create an active frontage to the street with a series of front doors and windows allowing for passive surveillance and interaction between the building and the street.

Access & Parking

The ground floor level provides vehicular access to the basement level car parking areas.

Early year's childcare centre

The first floor (level 1) accommodates the early childhood centre. The use occupies the majority of the floor plate at this level, an exception being the access and circulation core that provide through access to the levels above and below (via lift and stairs) that run centrally through the building core. The early childhood centre has a number of components including:

- Two outdoor play spaces on raised open decks with planters to help define and soften edges;
- Indoor play space (x 2 rooms);
- A central room space for sleep/changing/laundry and store;
- Staff / administration room; and
- Toilets and servicing.

Upper levels: residential accommodation

All levels above are for residential accommodation in the form of a variety of apartments including two penthouse units on the two uppermost levels (levels 8 and 9). The second to fifth floors (Levels 2-5) each accommodate seven individual apartments, comprising a mixture of 1 bedroom and 2-bedroom units. Levels 2-5 address street frontage with residential balconies to the front of apartments (all units have balconies providing residents with valuable private outdoor amenity space). The sixth floor (Level 6) is defined by a common deck area overlooking the street. This outdoor amenity space is a communal garden for residents and has an area of circa 190m^2. Set back behind the deck are another four residential apartments at this level. From the sixth floor onwards, the building form of the apartments and servicing areas are set back approximately 15m from the street edge, beyond which the common deck continues in form over the next two levels, the seventh and eighth floors, cumulatively levels 6 to 8 include residential apartments (each level containing 4

apartment units). Level 8 and 9 comprise of the upper and lower levels of the two penthouses, including rooftop balconies for each, with views overlooking the street and cityscape.

2.2 DESIGN DESCRIPTION

The form and appearance of the upper levels is light and contemporary, articulated by a rhythm of windows and balconies for the individual apartment units. Apartments are oriented to maximise views over the street, bringing both opportunities for passive surveillance over the street and visual interest as residents may personalise their balconies, for instance with balcony planting.

The apartment building form is a series of modular units, dictated by the floor plan that staggers the set-back distance of apartments from the street. Continuity of colour/shade and material for the framing of the modular units and continuity of windows, balconies and balcony railings bring unity to the whole.

The upper most levels are particularly light in appearance with the sixth level having a predominantly glazed exterior giving the appearance of the storeys above (levels 7, 8 and 9) floating as a raised box form.

Landscape design details will help to soften the appearance of the building form, notably with the rooftop common deck at level 6 which will be bounded by large planters to the street edge. The plants growing in the planters will be visible from the street, giving an appearance of urban greening. At ground level, several trees are proposed to be planted adjacent to the building edge, along the ramp.

The design, finish and materials are clearly contemporary, both at the lower level (with contemporary brick colonnade and framing to commercial, foyer, and parking entrances) and at upper levels with a predominance of glazing, balconies and light colour/shade building framing.

The fragmentation of the building form into modular units reduces the bulk and generates greater visual interest, whilst also minimising the extent of blank facades. The facades are cognisant of their location within the broader city and have used spaces and colour to layer the overall massing and form of the components of the building.

Figure 11: Render with view towards Barrack Street (Jaws Architects)

3. PLANNING SCHEME REQUIREMENTS

The following is an assessment of the proposal in response to the standards of the *Hobart Interim Planning Scheme 2015* (HIPS 2015).

The site is located within the Central Business Zone (Blue). The surrounding zones are the Utilities Zone (Yellow) and the Urban Mixed Use Zone (Grey) as shown in the figure below.

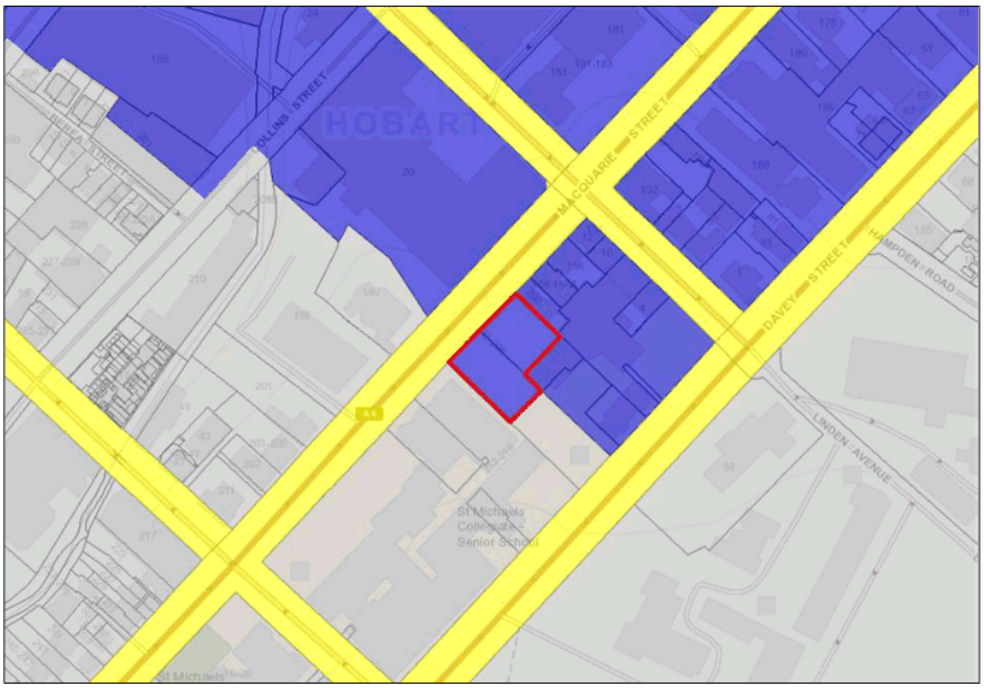

Figure 12: Site location (red), Topographic Map and Zoning (source: The LIST).

The site is within the Central Business Core Area and is not located on a Solar Penetration Priority Street, as illustrated in Figure 17, below:

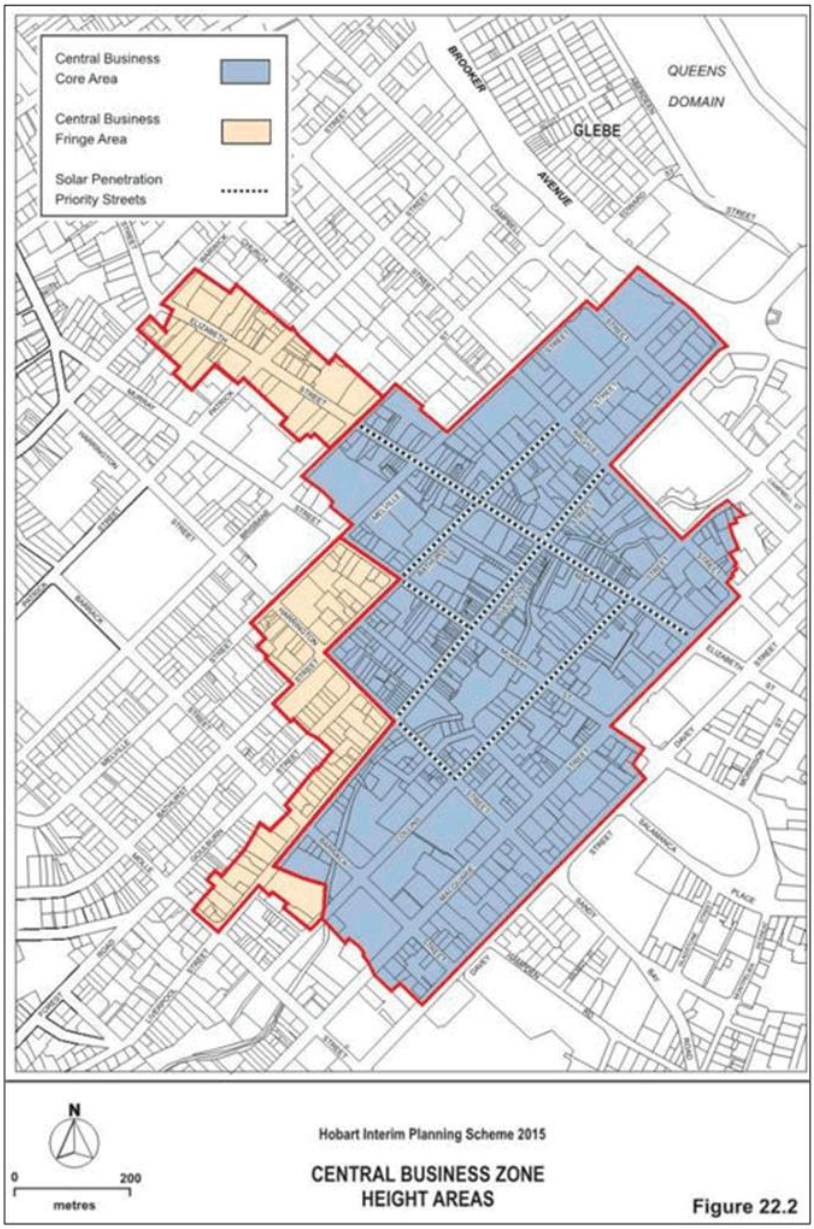

Figure 13: Central Business Zone Height Areas Map (HIPS 2015)

3.1 CENTRAL BUSINESS ZONE

3.1.1 ZONE PURPOSE STATEMENTS

The purpose statements of the Central Business Zone are as follows with respective responses to the proposed development.

> *22.1.1.1 - To provide for business, civic and cultural, community, food, hotel, professional, retail and tourist functions within a major centre serving the region or sub-region.*

The proposal is for a mixed-use development including residential, community and commercial uses. The residential component is for apartments that are capable of being used for visitor accommodation or residential purposes. Residential uses are permitted (above ground floor) and contribute to the vibrancy of the city by providing for 24hr presence. The proposal responds to a demonstrated need in relation residential uses in an appropriate location, centrally located, close to services and public transport.

Community and commercial uses include the early childhood centre (first floor) and the commercial tenancy areas located on the ground floor. The commercial areas directly front the street, providing activity and interest to the street frontage.

> *22.1.1.2 - To maintain and strengthen Hobart's Central Business District and immediate surrounds including, the waterfront, as the primary activity centre for Tasmania, the Southern Region and the Greater Hobart metropolitan area with a comprehensive range of and highest order of retail, commercial, administrative, community, cultural, employment areas and nodes, and entertainment activities provided.*

The proposal provides residential accommodation in a location that is well connected to the service functions of the CBD, with good connections to the amenities of Sullivan's Cove and St David's Park and on the edge of the Urban Mixed Use Zone. The design of apartments will provide a variety of accommodation choices, with areas of open space combining to provide a level of amenity and quality that is expected of the State's capital city.

The proposal also provides other uses (community and commercial in the form of the childcare centre and commercial tenancies) that are consistent with the objective to provide a comprehensive range of facilities.

> *22.1.1.3 - To provide a safe, comfortable and pleasant environment for workers, residents and visitors through the provision of high quality urban spaces and urban design.*

The relationship that the building has to the street frontage has been given a considerable degree of attention notably with the modulation of the built form to break down the perceived mass and the stepping back of the upper levels of the building to reduce visual impact and the buildings dominance on the street.

The building will help to contribute towards the safe, comfortable and pleasant environment for people by creating more 'eyes on the street' with ground floor presence of active frontages from front doors to lobbies (for apartments and childcare) and the ground floor commercial tenancies, all generating activity with visitors and residents. The upper level apartments are predominantly orientated to address the street, providing further natural surveillance with residents overlooking the street.

The façade will fill the existing void within the streetscape with high quality finishes and contemporary design that integrates with the existing form of the street.

The colonnade at ground level maintains the building line to street/footpath edge whilst creating a 'threshold' space as a point of transition from the public realm of the pavement and street to the private realm of the building. The ground floor commercial tenancy space provides potential for activity between the ground floor of the building and the street. The exact use of the commercial areas is not fixed at this stage but it is flexible to accommodate a range of potential uses that would benefit from street frontage with substantial foot traffic.

Landscape elements in the scheme will help contribute to the urban design and appearance of the streetscape, notably with ground level landscaping details (including new trees) and the common deck at level 6. This area will provide a private amenity space that will make a public contribution with large planters arranged around the perimeter thus creating the potential for an attractive green edge to the street.

22.1.1.4 - To facilitate high density residential development and visitor accommodation within the activity centre above ground floor level and surrounding the core commercial activity centre.

The proposal is highly consistent with this statement given the proposal for residential apartments within the activity centre. The apartments are proposed above ground floor level which is also consistent with this statement.

22.1.1.5 - To ensure development is accessible by public transport, walking and cycling.

The site is well connected to a variety of transport options, including notably public transport in the form of public bus services that run along Macquarie Street and nearby streets too. Parking within the building is limited in acknowledgement of the site's location in proximity to open space, services, entertainment and employment.

The development is highly accessible for walking with footpaths provided on both sides of the street, which is consistent throughout the locality, in addition to walking paths within open spaces such as St David's Park and along the Hobart Rivulet. Opportunities for cycling exist throughout the CBD with off-street cycling routes provided nearby, such as along the Hobart Rivulet path. Cycling is possible on street too albeit noting the high volume of vehicular traffic and current lack of segregated cycle paths/routes in Hobart City Centre.

22.1.1.6 - To encourage intense activity at pedestrian levels with shop windows offering interest and activity to pedestrians.

The proposal provides a ground floor frontage that includes commercial tenancy space that faces the street. This is consistent with this statement and has the potential to encourage pedestrian activity with shop window interest. The colonnade proposed provides a setback from the street with opportunity for further interest and activity adjacent to the street and footpath.

22.1.1.7 - To encourage a network of arcades and through-site links characterised by bright shop windows, displays and activities and maintain and enhance Elizabeth Street Mall and links to it as the major pedestrian hub of the CBD.

The location of the site and the enclosed nature of existing development on adjoining sites precludes the ability to provide through site linkages.

22.1.1.8 - To respect the unique character of the Hobart CBD and maintain the streetscape and townscape contribution of places of historic cultural heritage significance.

The proposed development has been designed with significant regard to the adjoining heritage buildings (including historic building elements within the Collegiate School site) and the qualities of

the nearby heritage precinct, albeit noting that the site is not within the Hobart Heritage Precinct H1, as illustrated in figure 18, below.

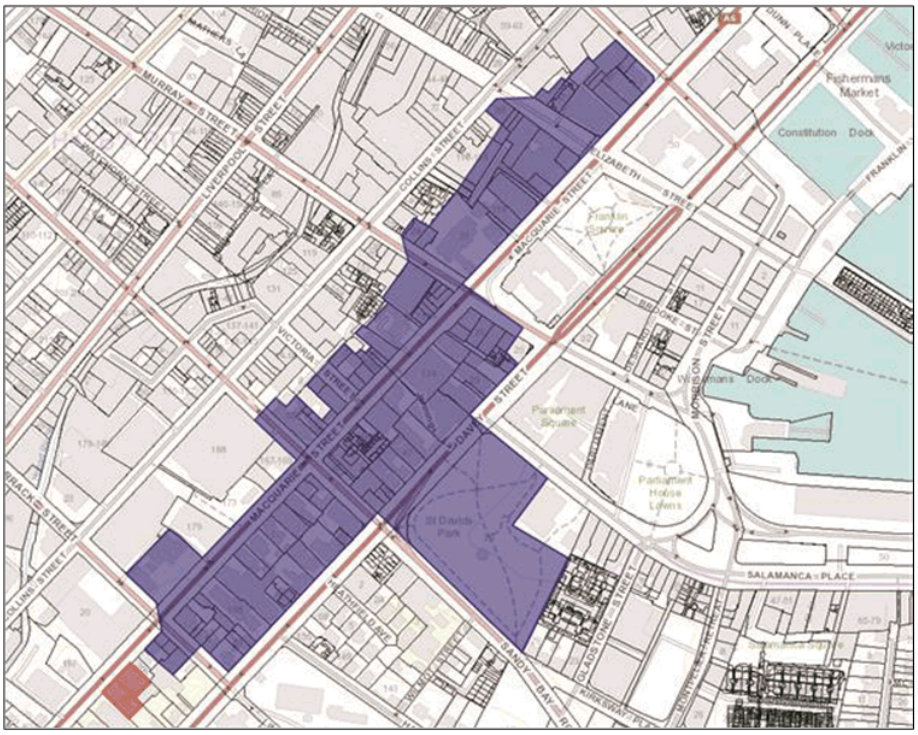

Figure 14: Extent of Hobart Heritage Precinct H1 - City Centre, with site boundary in red (Source: The LIST)

22.1.1.9 - To provide a safe, comfortable and enjoyable environment for workers, residents and visitors through the provision of high quality spaces and urban design.

See response to statement 22.1.1.3.

The proposal has been designed within the limitations presented by the site. The building is located in proximity to St. David's Park and Salamanca Place (to the north-east of the site) and the Hobart Rivulet Park (to the south-west), all of which provide high quality urban spaces. Residents are provided with ample private open space, both in the form of private balconies and the communal private garden (common deck) at level 6. The proposal is in close proximity to key sites within the CBD and Sullivan's Cove and is therefore considered to provide a safe, comfortable and enjoyable environment for residents.

3.1.2 LOCAL AREA OBJECTIVES

There are no Local Area Objectives for the zone.

3.1.3 DESIRED FUTURE CHARACTER STATEMENTS

The DFCS are implemented through Clauses 22.4 Development Standards for Buildings and Works; and the proposal has found to be compliant with the Acceptable Solutions. Further response in relation to 22.1.3.1 Objectives is provided below.

Townscape and Streetscape Character -

22.1.3.1 Objectives:

(a) That the Central Business Zone provides a compact built focus to the region, reflecting an appropriate intensity in its role as the heart of settlement.

The proposed development reinforces the role of the zone as a focus to the region with development that is at a scale consistent with existing development within the city centre.

(b) That the Central Business Zone develops in a way that reinforces the layered landform rise back from the waterfront, having regard to the distinct layers of the landform, respecting the urban amphitheatre, including the amphitheatre to the Cove, while providing a reduction in scale to the Queens Domain, the Domain and Battery Point headlands and the natural rise to Barracks Hill (see Figures 22.7 and 22.8).

(c) That the Central Business Zone consolidates within, and provides a transition in scale from, its intense focus in the basin, acknowledging also the change in contour along the Macquarie Ridge, including both its rising and diminishing grades, including to the low point of the amphitheatre to the Cove (see Figures 22.7, 22.8 and 22.9).

The proposal is consistent with the Amenity Building Envelope prescribed the by the Scheme. The proposed development is reflective of the underlying natural rise of the landform to Macquarie Street Ridge by stepping up along the cove slope to accentuate the Macquarie ridge, and the fall towards the amphitheatre of the cove. The fragmentation and modulation of the building form (as noted earlier in this report) gives a layering effect and staggered set back of built from the street, with the positioning of the tallest elements of built form at the rear of the site that will consolidate the existing emphasis of development on Macquarie Street on the surrounds of the basin, stepping down in a transition towards the Cove amphitheatre.

(d) That the historic cultural heritage values of places and precincts in the Central Business Zone be protected and enhanced in recognition of the significant benefits they bring to the economic, social and cultural value of the City as a whole.

The site is not listed as a heritage place nor within a heritage precinct. There are several heritage places listed within the St Michael's Collegiate School campus which surrounds the site. On the Macquarie Street frontage, the proposal is separated from the heritage listed places by the Emily Centre and Linmore Hall. The proposal will not have a detrimental impact on the heritage values of the heritage places.

22.1.3.2 Building Siting, Bulk and Design

The siting, bulk and design of a building above the street wall and beyond the Amenity Building Envelope (see Figure 22.3) must be consistent with the objectives in clause 22.1.3.1, having regard to:...

These statements are not applicable as the proposed development is within the Amenity Building Envelope.

3.1.4 USE STATUS

The proposal is for a mixed-use development including residential, community and commercial uses. Residential uses are permitted (above ground floor) and contribute to the vibrancy of the city.

Community and commercial uses include the early childhood centre (first floor) and two commercial tenancies located on the ground floor. The commercial units directly front the street, providing activity and interest to the street frontage.

Residential

The proposed development is for a mix of residential and serviced (visitor accommodation) apartments. The development is considered under the residential and visitor accommodation use classes which are defined as follows:

> *use of land for self contained or shared living accommodation. Examples include an ancillary dwelling, boarding house, communal residence, home-based business, hostel, residential aged care home, residential college, respite centre, retirement village and single or multiple dwellings.*

Residential use is a permitted use in the zone, provided it is above ground floor. The proposal is compliant with this, with residential uses from level 2 and above.

Educational and occasional care

The proposed development includes an early childhood centre which falls into the category of *educational and occasional care*, which is defined as follows:

> *Use of the land for educational or short term care purposes. Examples include a childcare centre, day respite facility, employment training centre, kindergarten, primary school, secondary school and tertiary institution.*

This is a permitted use in the zone, provided the following qualification is met:

> *Except if within the Active Frontage Overlay (Figure 22.1) and the ground floor frontage is greater than 4m.*

The site is not within the Active Frontage Overlay and therefore it is permitted use in the zone. The early childhood centre is at level 1 (except for access via ground floor).

Commercial

The proposed development includes two ground floor commercial tenancies. The specific function of these spaces is yet to be determined, however the floor plate design is flexible to accommodate a range of potential uses, including general retail, business and professional services and food services which are all permitted in the zone. Any use for these tenancies will be subject to a future application.

3.1.5 USE STANDARDS

The site is located over 180 metres from the nearest residential zone. Therefore clause *22.3.1 Hours of Operation, 22.3.3 External Lighting; 22.3.4 Commercial Vehicle Movements* are not applicable. No Adult Entertainment, takeaway food premises or hotel industry or manufacturing and processing uses are proposed.

The only applicable Use Standards are as follows:

> ***22.3.2 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.*
> ***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.

A1- The nearest residential zone (Sandy Bay) is approximately 180m to the south of the site and is therefore unlikely to be impacted by any noise generated by the development.

It is unlikely that the predominantly residential nature of the use will generate excessive noise. Any noise generated by the commercial use is anticipated to occur during normal business hours which is unlikely to impact on residential amenity.

The early childhood centre will generate some noise and activity, particularly noting the two areas of outdoor open play space included in the design for this facility at first floor level. It is thought that noise generated by the childcare facility will not be excessive and that it will be contained to hours of the facilities operation, notwithstanding the fact that the adjacent school would also generate sounds of children playing.

3.1.6 DEVELOPMENT STANDARDS

The following development standards are of relevance for the proposed development:

22.4.1 - Building Height

Objective: *That building height:*

(a) contributes positively to the streetscape and townscape;

(b) does not unreasonably impact on historic heritage character;

(c) does not unreasonably impact on important views within the urban amphitheatre;

(d) does not unreasonably impact on residential amenity of land in a residential zone; and

(e) provides significant community benefits if outside the Amenity Building Envelope.

A1 *- Building height within the Central Business Core Area in Figure 22.2 must be no more than:*

(a) 15m if on, or within 15m of, a south-west or south-east facing frontage;

(b) 20m if on, or within 15m of, a north-west or north-east facing frontage;

(c) 30m if set back more than 15m from a frontage;

unless an extension to an existing building that:

(i) is necessary solely to provide access, toilets, or other facilities for people with disabilities;

(ii) is necessary to provide facilities required by other legislation or regulation.

The proposed building has a north-west facing frontage on the street edge facing Macquarie Street. Therefore, Acceptable Solution A1 (b) and (c) apply:

- The building height on the immediate street edge frontage is approximately 20m;
- The building is then setback 15m and extends to a height of approximately 30m at the point of 15m from back of footpath (up to, and including level 8, out of 9 above ground levels);
- Level 9 is the top floor of the proposed building, this is set back further still (beyond the 15m set-back from street edge frontage). This top level of the building extends to 30 metres

building height, as illustrated in the architectural section drawing presented in Figure 21 below. The proposed building height is compliant with the Acceptable Solution.

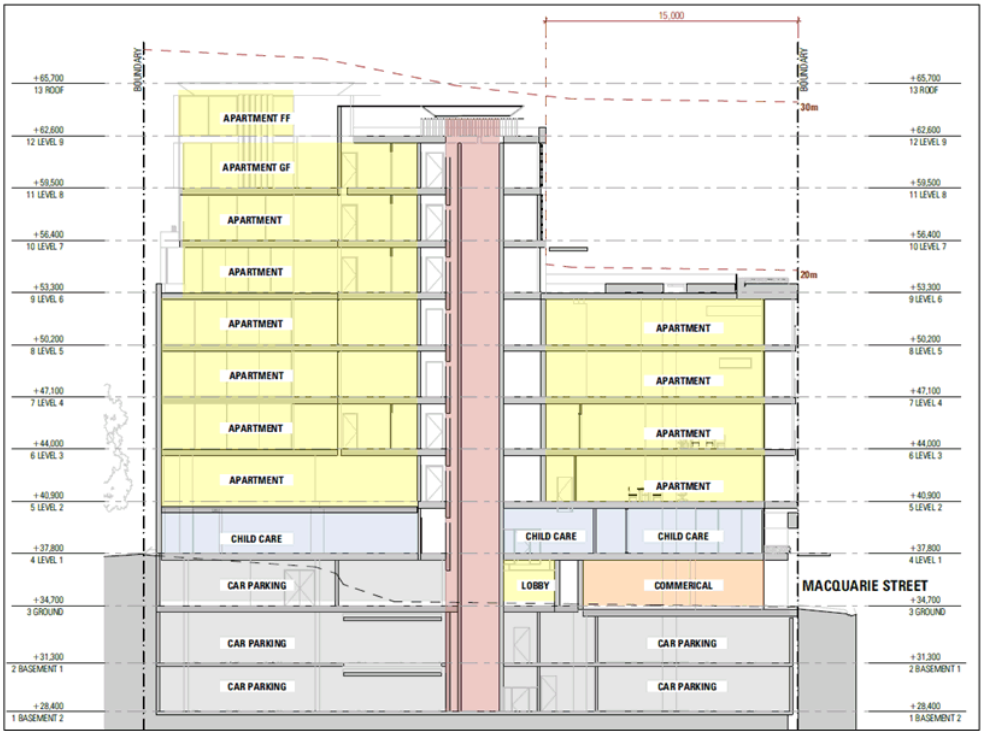

Figure 15: Section drawing through the proposed building showing 20m frontage building height limit in red and 30m building height limit also in red. (Source Jaws Architects).

A5 - Building height of development within 15m of a frontage and not separated from a place listed in the Historic Heritage Code by another building, full lot (excluding right of ways and lots less than 5m width) or road (refer figure 22.5 i), must:

(a) not exceed 1 storey or 4m (whichever is the lesser) higher than the facade building height of a heritage building on the same street frontage (refer figure 22.5 ii); and

(b) not exceed the facade building height of the higher heritage building on the same street frontage if the development is between two heritage places (refer figure 22.5 ii);

or

(c) comply with the building height in Clauses 22.4.1 A1 and A2;

whichever is the lesser.

The site adjoins the heritage listed place located at St Michael's Collegiate School as demonstrated in Figure 16.

Figure 16: Surrounding Heritage listings (source: www.thelist.tas.gov.au © State of Tasmania).

The listed buildings on the site include 'Stephenville', 'Jerusalem', 'Cannanore' & 'Broughton'.

Although these buildings form part of the heritage listed place, the building with the closest frontage to Macquarie Street is 'Stephenville', which is setback approximately 25m from the frontage.

There are two large buildings located between the proposed development and the specific location of 'Stephenville', which are not individually listed, however the closest of the two buildings forms part of the heritage place. Therefore, the proposed development is not separated from a place by a building or full lot.

Stephenville is the only heritage building which may be used to address A5(a), however the building is set 25m into the site and has no street frontage.

Legal advice received by the applicant advises that the magnitude of this setback, and absence of relationship to the street means that Stephenville is not on the same street frontage, therefore the streetscape relationship between the two buildings and is not relevant.

Figure 22.5 i Heritage Streetscape Standard

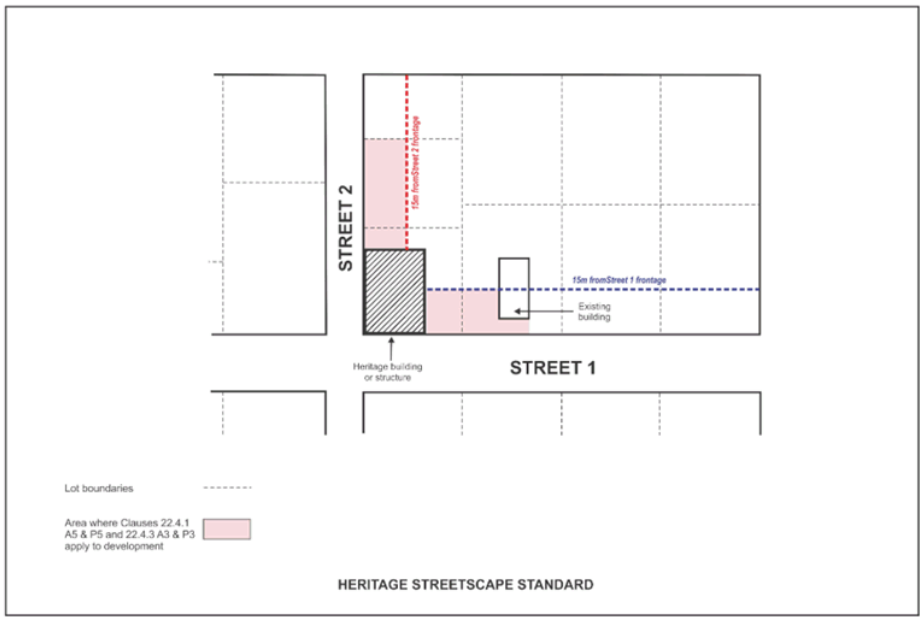

Figure 17: Heritage streetscape standard (Source: HIPS, 2015)

If this interpretation was adopted the height limit is set by sub-clause (c) which references 22.4.1 A1 - as applicable in this case.

In the event that this interpretation is incorrect a response to the performance criteria has been provided.

> *P5 - Building height within 15m of a frontage and not separated from a place listed in the Historic Heritage Code by another building, full lot (excluding right of ways and lots less than 5m width) or road (refer figure 22.5 i), must:*
> *(a) not unreasonably dominate existing buildings of cultural heritage significance; and*
> *(b) not have a materially adverse impact on the historic cultural heritage significance of the heritage place;*
> *(c) …*

The performance criteria requires that the height of a building that falls *within 15m of a frontage*, must not unreasonably dominate existing buildings of cultural heritage significance or have a materially adverse impact on the historic cultural heritage significance of the heritage place.

The term 'Heritage place' is defined under the Historic Heritage Code as follows:

> *means a place listed and described in Table E13.1.*

Whilst 'place' is also independently defined as follows:

> *means a place listed and described in Table E13.1 that is a site, area, landscape, building or other work, group of buildings or other works, with any associated views, spaces, and surroundings such as historic plantings or landscaping features, or evidence of past land use.*

The heritage place is described within the Scheme and Tasmanian Heritage Register as follows:

Hobart Interim Planning Scheme 2015

Name	Street Address	CT	General description
'Stephenville'	212-218 Macquarie Street	28370/1	*(St Michael's Collegiate School) including wall (Previously known as 218 Macquarie Street, also includes that part of the address previously known as 91-93 Davey Street, 97 Davey Street (Cananore, incl. Brick wall) and 105 Davey Street (Jerusalem)).*

The following Statement of Significance from the Tasmanian Heritage Register indicates the heritage significance of the place.

> *Stephenville is of historic cultural heritage significance because it demonstrates the pattern of settlement from the establishment of fine colonial residences on the fringes of Hobart Town during the early nineteenth century, through to the subdivision of modestly sized parcels of land and subsequent pattern of urban infill. Stephenville was built for (Sir) Alfred Stephen, an active figure in legal, political and community affairs in Tasmania during the early nineteenth century, who later became Chief Justice of New South Wales.*
>
> *The establishment of Hobart Ladies College, and later Collegiate, at Stephenville signalled an acceptance that girls could and should engage with an academic schooling and higher education, demonstrating evolving attitudes towards women during the Victorian era . Stephenville has community associations within Tasmania as the place where Collegiate, a reputable all-girls educational facility, has been located since 1895.*
>
> *Stephenville is an excellent example of an intact and detailed residence that demonstrates Old Colonial Regency style.*

Whilst the general description of the 'heritage place' (encompassing 212-218 Macquarie Street) in the HIPS 2015 includes several other heritage listed buildings such as 'Cananore', 'Broughton' and 'Jerusalem', the only building relevant in determination against P5(a) is 'Stephenville', the specific extent of which is identified in the extract below.

Figure 18: 'Stephenville' building and associated boundary wall (source: Tasmanian Heritage Register datasheet - THR ID No. 81)

In order to appropriately respond to the performance criteria, points (a) and (b) are addressed separately.

P5(a)

The following elevation diagram illustrates the portion of the proposed building within 15m of the frontage to Macquarie Street.

Figure 19: Section of the proposed building to which A5/P5 relates (source: JAWS Architects)

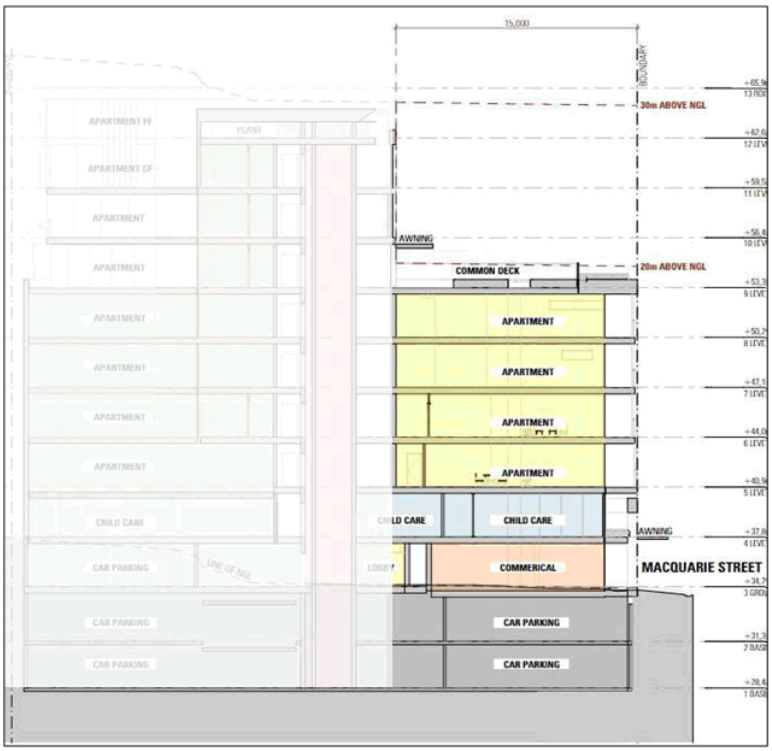

Figure 20: Section diagram illustrating the relevant portion of the building within 15m of the frontage (source: www.thelist.tas.gov.au © State of Tasmania)

Notwithstanding the response to A5, the question is whether this section of the proposed development unreasonably dominates the 'Stephenville' building, by virtue of its height within 15m of the frontage.

The following montage illustrates the relationship between the height of the proposed building within 15m of the frontage and 'Stephenville' and how each appear within the streetscape.

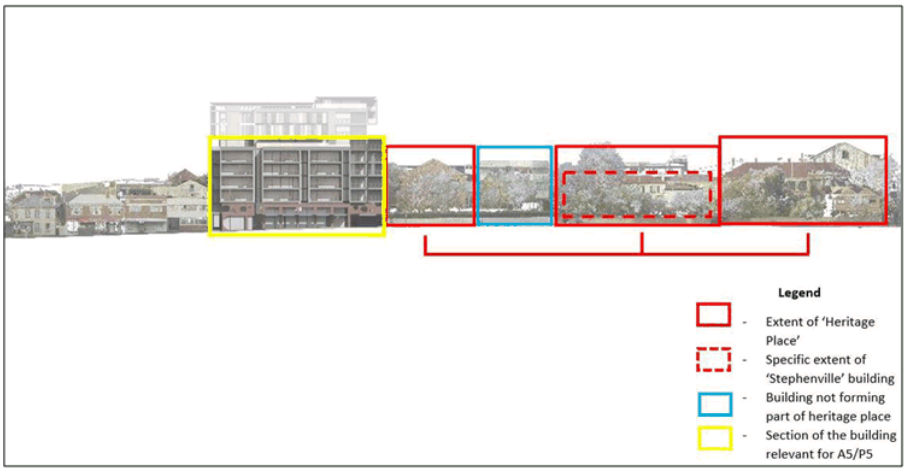

Figure 21: Streetscape view of Macquarie Street between Barrack Street and Molle Street (source: JAWS Architects - adapted by Ireneinc)

In determining whether the proposal unreasonably dominates the adjoining heritage building, consideration of visual impact is key. As can be seen above, any visual impact caused by the height of the building within 15m of the frontage is substantially reduced by the horizontal distance between the buildings (approximately 37m). When topographical changes and roof ridge heights of the adjoining buildings are taken into account, the height of the proposed building within 15m of the frontage is relatively consistent and does not result in any substantial visual impact.

This coupled with the substantial frontage setback of 'Stephenville' also substantially reduces any visual impact of the proposed building, with the adjoining buildings to the east providing further screening of the proposed development.

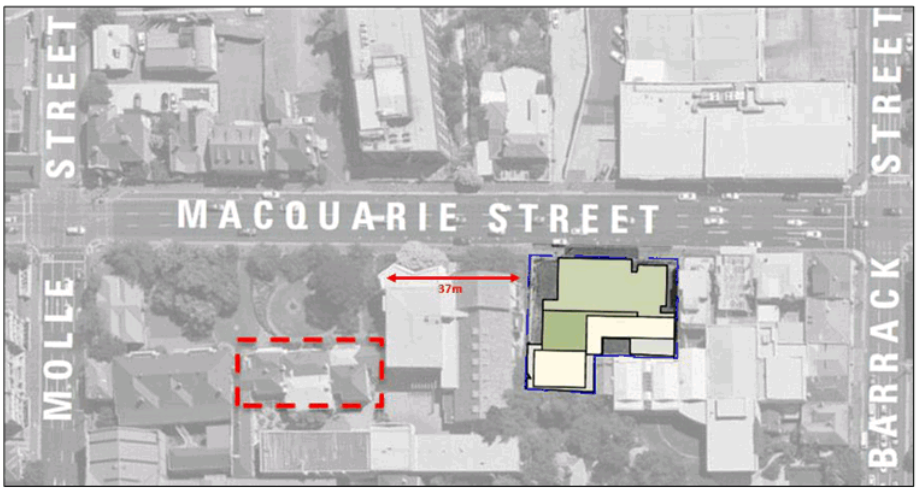

Figure 22: Distance between the site and 'Stephenville', illustrating the two existing buildings which provide a substantial visual buffer from the proposed development (source: JAWS Architects)

Other mitigating factors such as vegetation screening and existing buildings between the proposed development and 'Stephenville' also serve to reduce the impact of the relevant section of the proposed development on 'Stephenville'.

The following images and montages illustrate these factors.

Figure 23: View of 'Stephenville' from southern side of Macquarie Street, noting the substantial vegetation screening - the red line illustrates the relevant portion of the proposed building (source: Google Street View 2018)

Figure 24: Montage from Macquarie Street looking east from the northern side of the road - red area denotes the relevant section of the proposed building (source: Another Perspective & JAWS Architects)

These mitigating factors, along with the considered design of the façade ensures that the height and overall form of the proposed building within 15m of the frontage does not unreasonably dominate or impact upon the cultural heritage significance of 'Stephenville', in accordance with P5(a).

In regard to P5(b), the wording of the criteria and the definition of a 'heritage place' to some extent allows consideration of how the height of the proposed building (restricted to that section within 15m of the frontage) may impact on the wider 'heritage place', as follows:

> *(b) not have a materially adverse impact on the historic cultural heritage significance of the heritage place;*

The other heritage listed buildings which form part of the 'place' include 'Cannanore', 'Broughton' and 'Jerusalem' (as shown below), which provide further examples of Victorian Regency buildings within the listed place.

Figure 25: Extent of 'Cannanore' building which has frontage to Davey Street (source: THR datasheet - ID No. 2268)

Figure 26: Extent of 'Broughton' building and associated coach house (source: THR datasheet - ID No. 2267)

Figure 27: Extent of 'Jerusalem' building (source: THR datasheet - ID No. 2269)

Given that these buildings have no frontage to Macquarie Street and are predominantly located on the rear portion of the block, the height of the proposed development within 15m of the frontage will have no impact on these buildings as no part will be visible from the rear portions of the block.

To determine the potential impacts on 'Stephenville', Council have requested an urban section and context plan, taken from the centre of the block.

However, an urban section and elevation diagram from the centre of the block only serves to illustrate the rear portion of the proposed building, which is not within 15m of the frontage to Macquarie Street and is therefore; a) not relevant in determination against P5, and; b) the rear portion of the building obscures any interpretation of the relevant section of the proposed building.

With the above in mind, the urban section and context plan provided specifically illustrates the clear separation between the two buildings and how the height/massing of adjoining buildings, combined with that of the proposed building within 15m of the frontage does not result any unreasonable over bearing impact on the extent of the 'Stephenville' building or any other items that form part of the listed place.

(Note: the context plan illustrates the extent of the 'Stephenville' building as it would appear from a central point within the block).

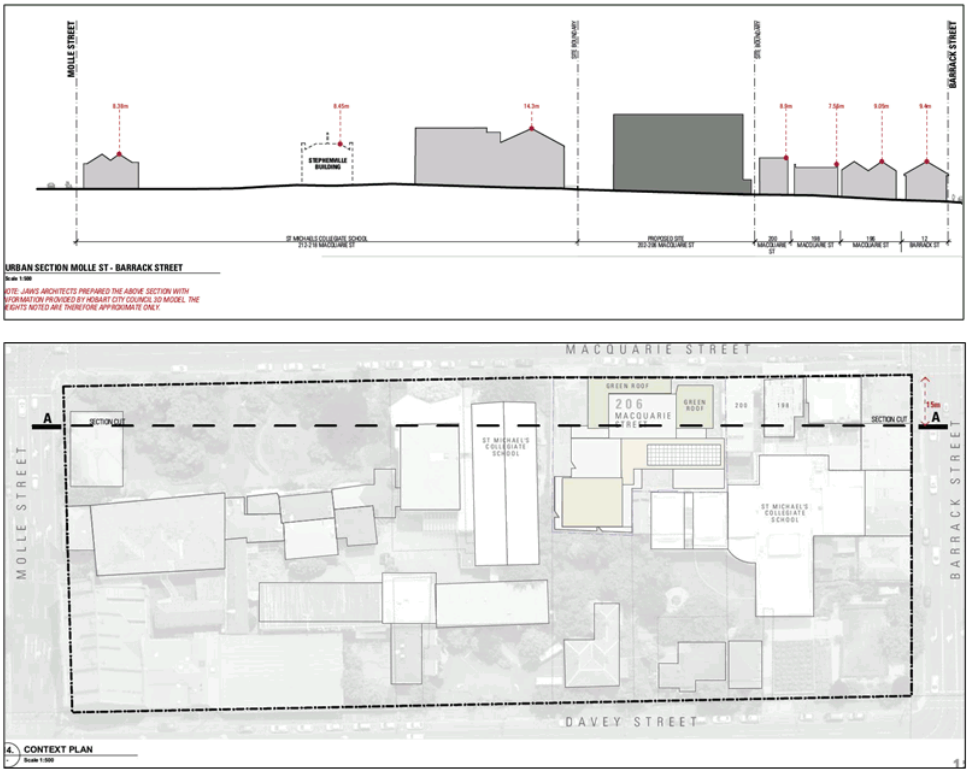

Figure 28: Urban section and context plan showing the height of the proposed building from 15m back from the frontage (source: JAWS Architects)

To further address this point, the visibility of the relevant section of the proposed building from within the adjoining heritage place will be limited, due to a number of factors outlined previously above.

Whilst interpretation of the proposed building from the courtyard areas within the place may be possible, the roof forms of the immediately adjoining buildings and offset of 'Stephenville' from the frontage will serve to reduce the visibility of the section of the proposed building in question.

If the relevant section of the proposed building cannot be visually interpreted to a reasonable degree, it is therefore unreasonable to suggest that it would result in any detrimental impact on the heritage characteristics of the heritage building, as a result of height/scale within 15m of the frontage, to which P5 directly relates.

Ultimately, the section of the proposed building relevant to this analysis will not unreasonably dominate existing buildings of cultural heritage significance and will not have a materially adverse impact on the historic cultural heritage significance of the adjoining heritage place.

The proposal complies with P5.

22.4.2 - Setback
Objective: To ensure that building setback contributes positively to the streetscape and does not result in unreasonable impact on residential amenity of land in a residential zone.

A1 - Building setback from frontage must be parallel to the frontage and must be no more than:
0m

The building is setback 0m, and therefore the proposal complies with A1.

22.4.3 - 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.

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) not include security shutters over windows or doors with a frontage to a street or public place;

The proposal responds to the acceptable solution as follows:

(a) The main entrances to the building (residential lobby, childcare centre lobby and commercial unit) are all on the ground floor, clearly visible from Macquarie Street.

(b) The ground floor façade is comprised of openings with a surface area in excess of 40%.

(c) there is no single expanse of a blank wall greater than 30% on the front façade.

(d) Plant and miscellaneous equipment such as the refuse and break tanks are within screened area located to the southern corner of the site.

(e) Lift over run is incorporated into the building through the design of the penthouse apartment over two floors. Further services are located in the basement levels.

(f) no security shutters over windows or doors with a frontage to a street are included in the proposal.

The proposal complies with the acceptable solution.

A2 - Walls of a building facing a residential zone must be coloured using colours with a light reflectance value not greater than 40 percent.

The nearest residential zone (Sandy Bay) is approximately 180m to the south of the site. The materiality of the walls is largely masonry and fibre cement sheet and the proposal is capable of complying with A2.

A3 - The facade of buildings constructed within 15m of a frontage and not separated from a place listed in the Historic Heritage Code by another building, full lot (excluding right of ways and lots less than 5m width) or road (refer figure 22.5 i), must:
(a) include building articulation to avoid a flat facade appearance through evident horizontal and vertical lines achieved by setbacks, fenestration alignment, design elements, or the outward expression of floor levels; and
(b) have any proposed awnings the same height from street level as any awnings of the adjacent heritage building.

The proposal adjoins the St Michael's Collegiate School which as mentioned previously, contains a number of heritage places located within its premises. In regard to the heritage places which share a frontage, this relates to the listing Stephenville which is approximately 37m away and separated by two buildings: Linmor Hall and the Emily Building, a contemporary extension to Linmor Hall.

The design of the building responds to the adjoining properties by providing brick elements to the lower levels of the façade which reference the materials utilised on the adjoining buildings. The front façade of the building extends to a height of approximately 20m before being setback at two intervals before extending to its full height. The central business zone requires a 0m frontage setback which reinforces the existing streetscape pattern.

The form and fenestration of the front façade also ensures the building does not present a flat façade appearance, with vertical privacy screen elements located between each vertical row of balconies.

The lower level masonry wall, columns and undercover space creates a visual permeability to the façade. The proposed awning is a minor element and has been positioned at the height specified by Council.

The proposal complies with A3.

22.4.4 - Passive Surveillance
Objective: To ensure that building design provides for the safety of the public

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;

(f) provide well-lit public access at the ground floor level from any external car park.

The proposal addresses the Acceptable Solution as follows:

A1 (a) the main pedestrian entrances to the buildings are clearly visible from Macquarie Street.

(b) the ground level façade of the building exceeds 40% windows and openings.

(c) Openings on the ground floor façade exceed 30% of the frontage.

(d) The design of the building does not create any entrapment spaces.

(e) & (f) no external car parking areas or pathways are proposed. Car parking will be located within building footprint at ground and basement levels (x2) and will be accessed via internal lifts and stair wells. The internal car park will be provided with lighting in accordance with relevant Australian Standard.

As such the proposal complies with the acceptable solution.

4. CODES

4.1 POTENTIALLY CONTAMINATED LAND CODE

The site was previously used as a petrol station and significant remediation and monitoring has taken place since the site was decommissioned.

4.1.1 USE STANDARDS

E2.5 Use Standards
Objective: *To ensure that potentially contaminated land is suitable for the intended use*

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.

P1 - An Environmental Site Assessment has been provided which complies with c) which has found that the land use suitable for residential use and no ongoing management requirements have been identified. The proposal meets the performance criteria.

4.1.2 DEVELOPMENT STANDARDS

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.*

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.

The proposal meets P1 (b). An environmental site assessment accompanies this report and no specific remediation measures are required. The ESA has determined the site does not pose a risk to human health of the environment.

4.2 ROAD AND RAILWAY ASSETS CODE

The following Use and Development Standards are relevant.

4.2.1 USE STANDARDS

E5.5.1 Existing road accesses and junctions

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

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.

The proposal will require the relocation of the existing access to the site and will result in intensification of the use. The proposal is required to respond to the Performance Criteria.

P3

(a) The accompanying TIA identifies that the proposal will provide 40 on-site car parking spaces for residents only, resulting in approximately 3.5 vehicles trips per apartment per day. This number is slightly higher than what is likely to be expected (3.75 trips per apartment per day).

The childcare centre will be provided with 5 spaces and is expected to generate a total of 170 vehicle movements per day.

The total peak traffic generation of the development will be approximately 310 vehicle movements per day.

(b) The traffic generated by the use will be primarily private residential traffic, with additional traffic generated by the childcare centre, primarily during the morning and afternoon. It is not yet clear what uses will occupy the ground floor tenancies, however no on-site parking has been provided for these uses.

(c) & (d) Macquarie Street carries approximately 770-840 vehicle movements per hour during the morning and afternoon peak periods, respectively. Macquarie Street is a one-way street, therefore vehicles will utilise the far right-hand lane when exiting the site.

It is considered that the access is sufficient to ensure safe and efficient exit and entry to the site.

(e) The speed limit along Macquarie Street is signposted at 50km/hr and traffic flows in one direction toward the CBD.

(f) n/a

(g) The development will provide an additional boost to residential apartment living within proximity to the CBD and other key socio-cultural and economic areas such as Sandy Bay and Salamanca Place. The site will also ensure that a currently vacant and underutilised site is redeveloped, significantly improving the streetscape.

The location of an additional childcare centre within walking distance of the CBD will also provide more convenient options for parents.

(h) Please refer to the attached TIA for details.

(i) Due to recent legislative changes, the Macquarie Street road reserve is now managed by the Department of State Growth. However, no changes to the existing access to the site are proposed.

4.2.2 DEVELOPMENT STANDARDS

E5.6.1 Development adjacent to roads and railways

Objective: To ensure that development adjacent to category 1 or category 2 roads or the rail network:

(a) ensures the safe and efficient operation of roads and the rail network;

(b) allows for future road and rail widening, realignment and upgrading; and

(c) is located to minimise adverse effects of noise, vibration, light and air emissions from roads and the rail network.

A1.1 Except as provided in A1.2, the following development must be located at least 50m from the rail network, or a category 1 road or category 2 road, in an area subject to a speed limit of more than 60km/h:

(a) new buildings;

(b) other road or earth works; and

(c) building envelopes on new lots.

A1.2 Buildings, may be:

(a) located within a row of existing buildings and setback no closer than the immediately adjacent building; or

(b) an extension which extends no closer than:

(i) the existing building; or

(ii) an immediately adjacent building.

A1.2 Macquarie Street is a Category 1 road. A1.2 is relevant to the proposal and the proposed building is located within a row of existing buildings and setback no closer than the immediately adjacent property located at 200 Macquarie Street.

E5.6.2 Road accesses and junctions

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

***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.

A2 - The site has two existing crossovers. However, only the southern crossover will be used to provide both entry and exit from the site. Therefore, the proposal complies with A2.

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

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

***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 …

A1 - Given the one-way nature of Macquarie Street, the only applicable sight distance is to the west. The sight distance from the access point is well over the required 69-77m for vehicle speeds between 50-55km/hr.

The sight distance complies with A1.

4.3 PARKING AND ACCESS CODE

4.3.1 USE STANDARDS

E6.6.1 Number of Car Parking Spaces

Objective: *To ensure that:*

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

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

(i) preventing regular parking overspill;

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

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.

A1 -The site is subject to E6.6.5 of the Hobart Interim Planning Scheme therefore the proposal complies with A1.

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

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

A1 *- Car parking spaces provided for people with a disability must:*

(a) satisfy the relevant provisions of the Building Code of Australia;

(b) be incorporated into the overall car park design;

(c) be located as close as practicable to the building entrance.

P1 *- No Performance Criteria.*

A1 *- One parking space has been provided for people with a disability. The space has been incorporated into the design at ground level, as close as practical the entry to the building. Furthermore, the space will comply with the relevant provisions of the Building Code of Australia.* ***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.*

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.

A1 - Although no parking is required in the Central Business Zone, the proposal will provide 45 car parking spaces. Therefore, a requirement for 1 motorcycle parking space is generated.

Two motorcycle parking spaces have been provided on Basement Level 1 and therefore complies with A1.

E6.6.4 Number of Bicycle Parking Spaces

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

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

A1 - It has not yet been confirmed which uses will occupy the ground floor tenancies, and any future use will be subject to a separate application.

The childcare centre generates a requirement for bicycle spaces. The centre will support a maximum of 51 children which generates a requirement for 2 bicycle spaces. One additional space is also required per 20 employees. This generates 3 Bicycle spaces.

A total of 5 bicycle parking spaces are provided. Residential use does not generate a requirement for bicycle parking, however bicycles for residents can be stored within the storage areas provided in the basement parking levels.

The proposal complies with A1.

E6.6.5 Number of Car Parking Spaces - Central Business Zone

Objective: *To ensure that pedestrian activity generated by retailing, entertainment and multi -storey office uses in the central business district is not compromised through the provision of on-site car parking.*

A1 *- (a) No on-site parking is provided; or*

(b) on-site parking is provided at a maximum rate of 1 space per 200m^2 of gross floor area for commercial uses; or

(c) on-site parking is provided at a maximum rate of 1 space per dwelling for residential uses; or

(d) on-site parking is required operationally for an essential public service, including, hospital, police or other emergency service.

A1- The proposal provides a total of 45 car parking spaces, therefore A1(a) is not applicable.

A1(b) The commercial uses include the two tenancies and the childcare centre, which in total generates a requirement for 5 parking spaces. 5 spaces have been provided.

(c) The remaining 40 spaces have been allocated at a rate of 1 space per apartment.

Therefore, the proposal complies with A1(b) and (c).

4.3.2 DEVELOPMENT STANDARDS

E6.7.1 Number of Vehicular Accesses

***Objective**: To ensure that:*

(a) safe and efficient access is provided to all road network users, including, but not limited to: drivers, passengers, pedestrians, and cyclists, by minimising:

(i) the number of vehicle access points; and

(ii) loss of on-street car parking spaces;

(b vehicle access points do not unreasonably detract from the amenity of adjoining land uses;

(c) vehicle access points do not have a dominating impact on local streetscape and character.

***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.*

A1 - There are currently two vehicle access points to the site. The north-eastern crossover will be removed as it is no longer required, whilst the south-western crossover will be retained to provide access to the basement car parking. Therefore, the proposal complies with the acceptable solution.

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.*

***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.

A1 - As per the accompanying TIA, although the site will provide parking for the ground floor commercial tenancies and childcare centre, these uses will not require commercial vehicles (B99 and above) to enter and exit the site. The access, circulation and parking areas have been constructed in accordance with AS 2890.1 for non-commercial vehicle access.

Therefore, the proposal complies with A1(a).

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.

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.

A1 - The access serves more than 5 car parking spaces. The design of the access and driveway is sufficient to allow vehicle to exit and enter to and from Macquarie Street in a forward direction, as well as passing one another along the driveway. Please refer to page 16 of the TIA which accompanies this report. The proposal complies with A1.

E6.7.4 - On-Site Turning
Objective: To ensure safe, efficient and convenient access for all users, including drivers, passengers, pedestrians and cyclists, by generally requiring vehicles to enter and exit in a forward direction.
A1 - On-site turning must be provided to enable vehicles to exit a site in a forward direction, except where the access complies with any of the following:
(a) it serves no more than two dwelling units;
(b) it meets a road carrying less than 6000 vehicles per day.

A1 - The access and parking areas have been designed to ensure that vehicles can turn onsite and enter and exit in a forward direction. The proposal complies with A1.

E6.7.5 - Layout of Parking Areas
Objective: To ensure that parking areas for cars (including accessible parking spaces), motorcycles and bicycles are located, designed and constructed to enable safe, easy and efficient use.

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.

A1 - The parking areas have been designed in accordance with the relevant Australian Standard. Refer to page 17-18 of the TIA which accompanies this report.

E6.7.9 - 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.

A1 - Parking spaces and vehicle circulation roadways must be in accordance with all of the following;

(a) paved or treated with a durable all-weather pavement where within 75m of a property boundary or a sealed roadway;
(b) drained to an approved stormwater system, unless the road from which access is provided to the property is unsealed.

A1 - Parking areas will be treated with an all-weather pavement and drained to the proposed stormwater system. Please refer to the accompanying concept servicing plans provided by Gandy and Roberts.

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.

***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.

A1 - Internal parking areas and circulation will be provided with lighting in accordance with A1.

E6.7.8 - Landscaping of Parking Areas

The site is in the Central Business Zone, no landscaping is required.

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.*

***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.

A1 -The motorcycle parking areas will be constructed in accordance with the Australian Standard.

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.

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.
….

A1- The bicycle parking has been provided in accordance with Table E6.2 and is located well within 30m of the main pedestrian entrance to the site. The proposal complies with A1.

A2 - The design of bicycle parking spaces must be to the class specified in table 1.1 of AS2890.3-1993 Parking facilities Part 3: Bicycle parking facilities in compliance with section 2 "Design of Parking Facilities" and clauses 3.1 "Security" and 3.3 "Ease of Use" of the same Standard.

P2 - The design of bicycle parking spaces must be sufficient to conveniently, efficiently and safely serve users without conflicting with vehicular or pedestrian movements or the safety of building occupants.

A2 -Bicycle parking complies with the relevant Australian Standard. Refer to page 15 of the TIA.

E6.7.11 - Bicycle End Trip Facilities

Objective:
To ensure that cyclists are provided with adequate end of trip facilities.

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.

A1 -The proposal does not generate a requirement for more than 5 employee bicycle spaces, therefore no end of trip facilities are required.

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.

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….

This provision does not apply to developments in the Central Business Zone.

A2 - In the Central Business Zone on-site parking at ground level adjacent to a street block frontage must comply with all of the following:
(a) new vehicular access points are not provided;
(b) an active street frontage is retained;
(c) parked cars are not visible from the street.

A2 - The proposed car parking areas will be located at basement level and will not be visible from the street. This will ensure an active street frontage is retained and only one existing crossover will be utilised. The proposal complies with A2.

E6.7.13 - Facilities for Commercial Vehicles
***Objective**: To ensure that facilities for commercial vehicles are provided on site, as appropriate.*

***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.

The proposed uses are not primarily dependant on outward delivery of goods from the site. Any future use of the commercial areas which may require inward bound deliveries will be subject to a separate future application.

E6.7.14 - Access to a Road
***Objective**: To ensure that access to the road network is provided appropriately.*

***A1** - Access to a road must be in accordance with the requirements of the road authority.*

***P1** - No performance criteria*

The road authority for Macquarie Street is the Department of State Growth, consent has been provided.

4.4 STORMWATER MANAGEMENT CODE

4.4.1 DEVELOPMENT STANDARDS

E7.7.1 - Stormwater Drainage and Disposal
***Objective**: To ensure that stormwater quality and quantity is managed appropriately.*

***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.

A1 - Stormwater will be disposed of via gravity to public stormwater infrastructure. Please refer to the plans by Gandy and Roberts for detailed design.

A2 - A stormwater system for a new development must incorporate water sensitive urban design principles R1 for the treatment and disposal of stormwater if any of the following apply:

(a) the size of new impervious area is more than 600 m2;

(b) new car parking is provided for more than 6 cars;

(c) a subdivision is for more than 5 lots.

P2 A stormwater system for a new development must incorporate a stormwater drainage system of a size and design sufficient to achieve the stormwater quality and quantity targets in accordance with the State Stormwater Strategy 2010, as detailed in Table E7.1 unless it is not feasible to do so.

P2 - A stormwater treatment train will be implemented which will comply with the requirements of P2. Please refer to Gandy and Robert's plan which accompany this application.

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.

The stormwater connection is designed to accommodate a storm with an ARI of 20 years. Please refer to the accompanying plans by Gandy and Roberts.

4.5 HISTORIC HERITAGE CODE

The site is not identified as a heritage place on the HIPS or the Tasmanian Heritage Register. The site is not located within a Heritage Precinct; however, it has been mapped in a Place of Archaeological Potential. Therefore, the following standards apply.

4.5.1 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.*

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'.

P1 - As the proposed development incorporates two basement levels, there is a requirement to undertake excavation on the site. Therefore, a response to the performance criteria is required.

A Statement of Historical Archaeological Potential has been provided. As the site was previously a petrol station, the installation and subsequent removal and remediation of the site would have impacted the archaeological potential, it is likely that any surviving archaeological material would have been impacted if not completely obliterated by site remediation works following the closure of the service station. It is considered that the site has little or no archaeological potential.

4.6 SIGNS CODE

No signage is proposed as part of this application.

5. CONCLUSION

The proposed mixed-use development including residential accommodation, a commercial unit and an early childhood centre designed in accordance with the relevant scheme provisions of the Hobart Interim Planning Scheme.

There is a demonstrated need for additional residential accommodation options within Hobart and the proposal will aid in supplying a mix of residential apartments (and potentially visitor accommodation apartments) within close proximity to the CBD and a number of key social and cultural sites.

The proposal has also been carefully designed to ensure that it sits within the current amenity building envelope, thereby reducing any undue impacts from height or bulk that would likely be apparent if the building extended beyond the envelope. The materials and finishes applied to the front façade have been chosen to maintain the general characteristics of the streetscape.

Although car parking is not required within the Central Business Zone, a total of 45 spaces have been provided for residents along with motorcycle and bicycle parking facilities. These amenities have been provided to provide flexibility for residents and guests and to enable alternate transport options.

The proposal will require modifications to the current crossover to the site. The changes proposed will require both Council Consent and State Growth Consent, and an application for both has been submitted to both Council and State Growth as part of this application.

ireneinc & smithstreetstudio
PLANNING & URBAN DESIGN

August 2020

Cameron Sherriff
Hobart City Council
GPO Box 503
HOBART TAS 7001

Dear Cameron

FURTHER INFORMATION - 202-206 MACQUARIE STREET

I am writing in response to your letter of the 7/08/20 requesting further information in response to the proposed development at 202-206 Macquarie Street (PLN-20-104).

The following is in response to your enquiries:

Planning - PLN Fi1

1. Please provide a revised assessment of the height of the proposed development addressing Clause 22.4.1 A5(a) and (c), with relevance to the Stephenville heritage building, and if necessary addressing the corresponding tests of performance criteria P5.

Please refer to the amended planning report which provides a response to A5/P5.

PLN Fi3

An architectural visualisation from the base of the Cenotaph looking west.

Please see the accompanying architectural visualisation from the base of the Cenotaph.

PLN Fi4

A Davey Street urban block elevation from Barrack to Molle Street.

This request relates to the determination of A5/P5 to Clause 22.4.1. As the clause specifically relates to the height of the proposed building *within 15m of the frontage*, the urban section from Davey Street is not relevant as the section of the building relevant for consideration will not be visible from this location by virtue of the building form behind.

Therefore, the Davey Street urban block elevation is not necessary to make a determination against P5 and has not been provided.

PLN Fi5

A Macquarie Street urban block elevation from Molle Street to Barrack Street.

Please see the accompanying urban block elevation along Macquarie Street.

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PLANNING TAS PTY LTD TRADING AS IRENEINC PLANNING & SMITH STREET STUDIO PLANNING & URBAN DESIGN ABN 78 114 905 074

PLN Fi6

An urban section taken through the block bounded by Macquarie, Davey, Barrack and Molle Streets. Taken through the Stephenville building.

Response to additional information received 05/08/2020 - the urban section taken through the block bounded by Macquarie, Davey, Barrack and Molle Streets has not been taken through the Stephenville building. Request not satisfied.

No changes to the urban section submitted on the 05/08/2020 are proposed. As discussed with Council officers, the section accurately references the Stephenville building, whilst also accurately referencing the section of the proposed development relevant in consideration against P5.

PLN Fi7

An architectural visualisation, taken from Macquarie Street, standing in front of Collegiate (e.g. including the significant place: Stephenville) showing the visual impact of the proposal.

Please refer to the accompanying architectural visualisation and revised planning report.

In response to the advice received from Megan Baynes, the architectural elevation along Macquarie Street has been updated to ensure consistency with the visualisation submitted on the 21/08/20.

PLN Fi8

Information/details regarding the exact bricks/coursing being specified on the ground floor elevation in Macquarie Street. Please specify the colour, size and finish of proposed brick product.

Further details regarding the external materials has been provided on the updated architectural documentation.

Parking and Access

PA 5.1 & PA 5.2

Please refer to the revised civil documentation submitted 19.0123 C 20200826 Concept Services.

PA 13

1. 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.

2. A waste management plan that: Includes provisions for commercial domestic waste services for the handling, storage, transport and disposal of domestic waste and recycle bins from the development Demonstrates that all commercial domestic waste collection processes can be undertaken wholly within the boundaries of the property.

Advice:

Commercial domestic rubbish collection will be required for this development. The Councils solid waste services division have indicated they will not provide kerbside rubbish collection for this proposal.

Alternatively, if you choose not to provide the above requested information and it is still proposed that "Commercial tenancy serving and waste will be attended to by commercial or private contractors from on street parking" as stated in the information submitted to Council on 22/06/2020, you will need to supply evidence from the Department of State Growth that they are aware of this aspect of the proposal and that their Crown Landowner Consent dated 11th May 2020 was granted on this basis or otherwise, if their consent was not granted on this basis and they were not aware of this aspect of the proposal provide their updated consent to cover rubbish collection from the street and that this will remain possible in perpetuity.

As outlined in the accompanying statement from Milan Prodanovic and discussed with Council officers on Wednesday 12th of August, waste removal will occur from the kerbside which does not require on-site commercial vehicle facilities.

Written advice from the Department of State Growth has been received and provided along with the statement from Milan Prodanovic which confirms that the consent provided acknowledges the requirement for waste removal to occur from the street.

It is understood that Council will not undertake rubbish removal from the site and that this will need to be undertaken by a private contractor. As a result, a waste management plan can be provided as a condition of approval.

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

Yours sincerely,

P. Gartrell

Phil Gartrell
Planner
IRENEINC PLANNING & URBAN DESIGN

City of HOBART

Enquiries to: City Planning
Phone: (03) 6238 2715
Email: coh@hobartcity.com.au

4 May 2020

Phil Gartrell (Ireneinc Planning and Urban Design) mailto: phil@ireneinc.com.au
49 Tasma Street
NORTH HOBART TAS 7001

Dear Sir/Madam

202 - 206 MACQUARIE STREET, HOBART - WORKS IN ROAD RESERVE NOTICE OF LAND OWNER CONSENT TO LODGE A PLANNING APPLICATION - GMC-20-11

Site Address:

202-206 Macquarie Street, Hobart

Description of Proposal:

New Building for 40 Multiple Dwellings, Educational and Occasional Care (Childcare Centre) and General Retail and Hire, Business and Professional Services and Food Services

Applicant Name:

Phil Gartrell
Ireneinc Planning and Urban Design

PLN *(if applicable)*:

PLN-20-104

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

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

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

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

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

Yours faithfully

(N D Heath)
GENERAL MANAGER

Relevant documents/plans:

Plan by Jaws Architects - Awning over Footpath 18052_GM01

Plans by Gandy and Roberts
Siteworks and Vehicle Sight Plan - C010 Rev 1
Concept Services - Basement - H011 Rev 2
Concept Services - Ground - H010 Rev 2

Hobart Town Hall
50 Macquarie Street
Hobart TAS 7000

Hobart Council Centre
16 Elizabeth Street
Hobart TAS 7000

City of Hobart
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CityofHobartOfficial

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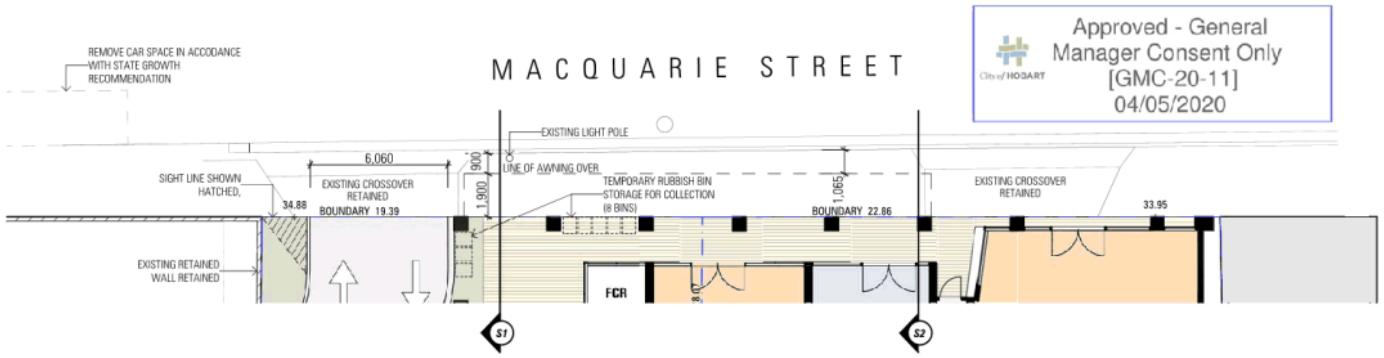
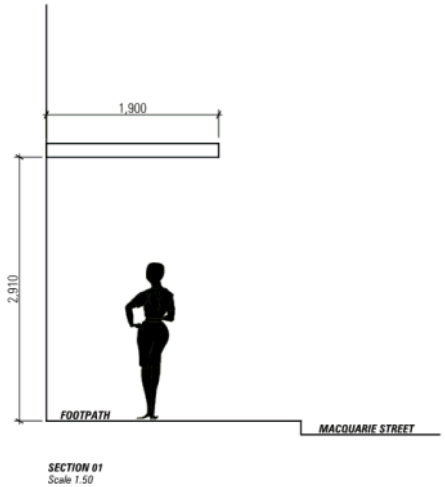
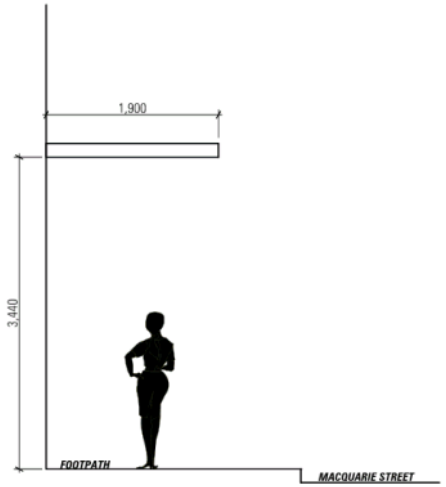


Approved - General Manager Consent Only [GMC-20-11] 04/05/2020



SECTION 01
Scale 1.50



SECTION 02
Scale 1.50

DO NOT SCALE DRAWINGS. WRITTEN DIMENSIONS GOVERN. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE. THIS DRAWING MUST BE READ IN CONJUNCTION WITH ALL RELEVANT CONTRACTS, SPECIFICATIONS, REPORTS AND DRAWINGS.

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ARCHITECTSJAWS

PROJECT

MACQUARIE ST APARTMENTS
206 Macquarie Street HOBART TAS 7000 AUSTRALIA
For
NEW PLEASANT N0.2 PTY.LTD

DRAWING

SCALE	1:200, 1:50 @ A3
DATE	11/10/2019
DRAWN	
CHECKED	
ACCREDITED DESIGNER	
ACCREDITED NUMBER	
PLOT DATE	31/03/2020
CAD REF	BIMcloud: JAWS3 - BIMcloud Basic for ARCHICAD 22/18052 - 206 Macquarie St Hob/18052 - 206 MACQUARIE ST_DD_191004

PROJECT NORTH

ISSUE

DEVELOPMENT APPLICATION

DRAWING NAME

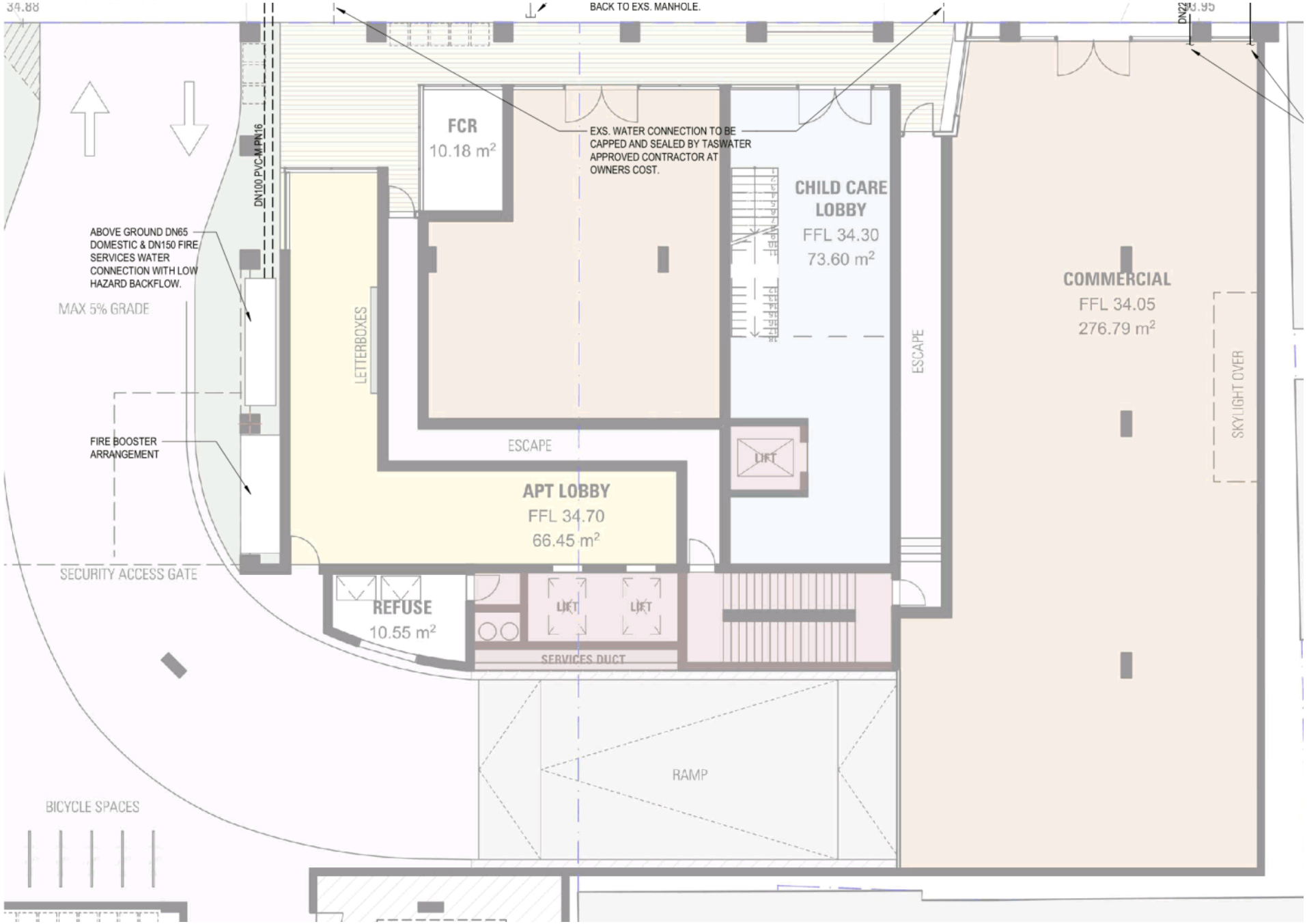
AWNING OVER FOOTPATH

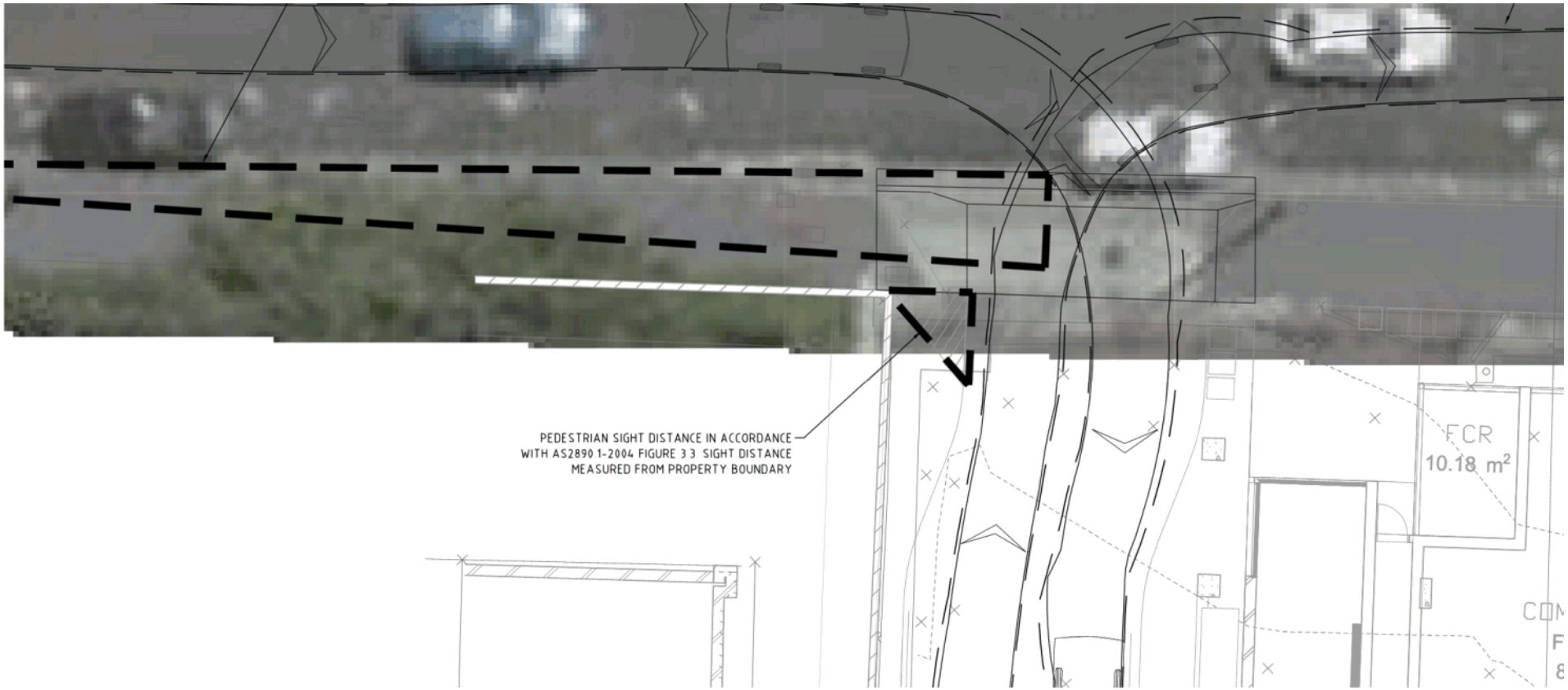
DRAWING NO

18052_GM01

REVISION

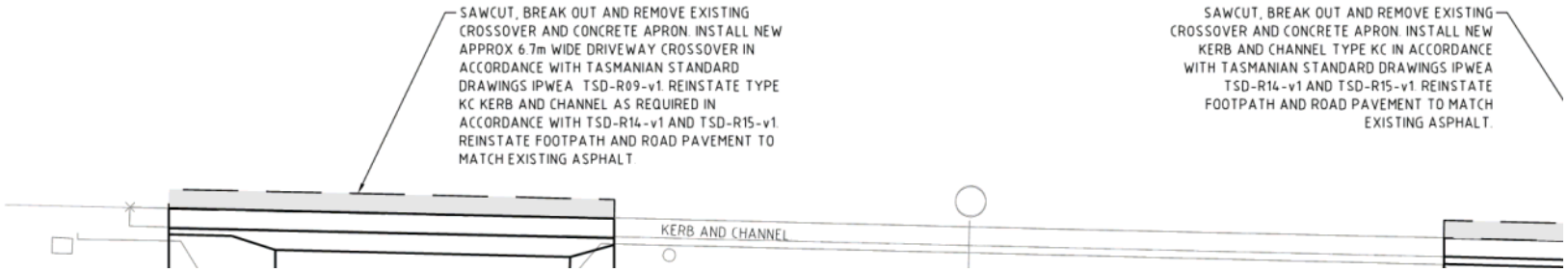
02 DEVELOPMENT APPLICATION
01 CLIENT SIGN-OFF

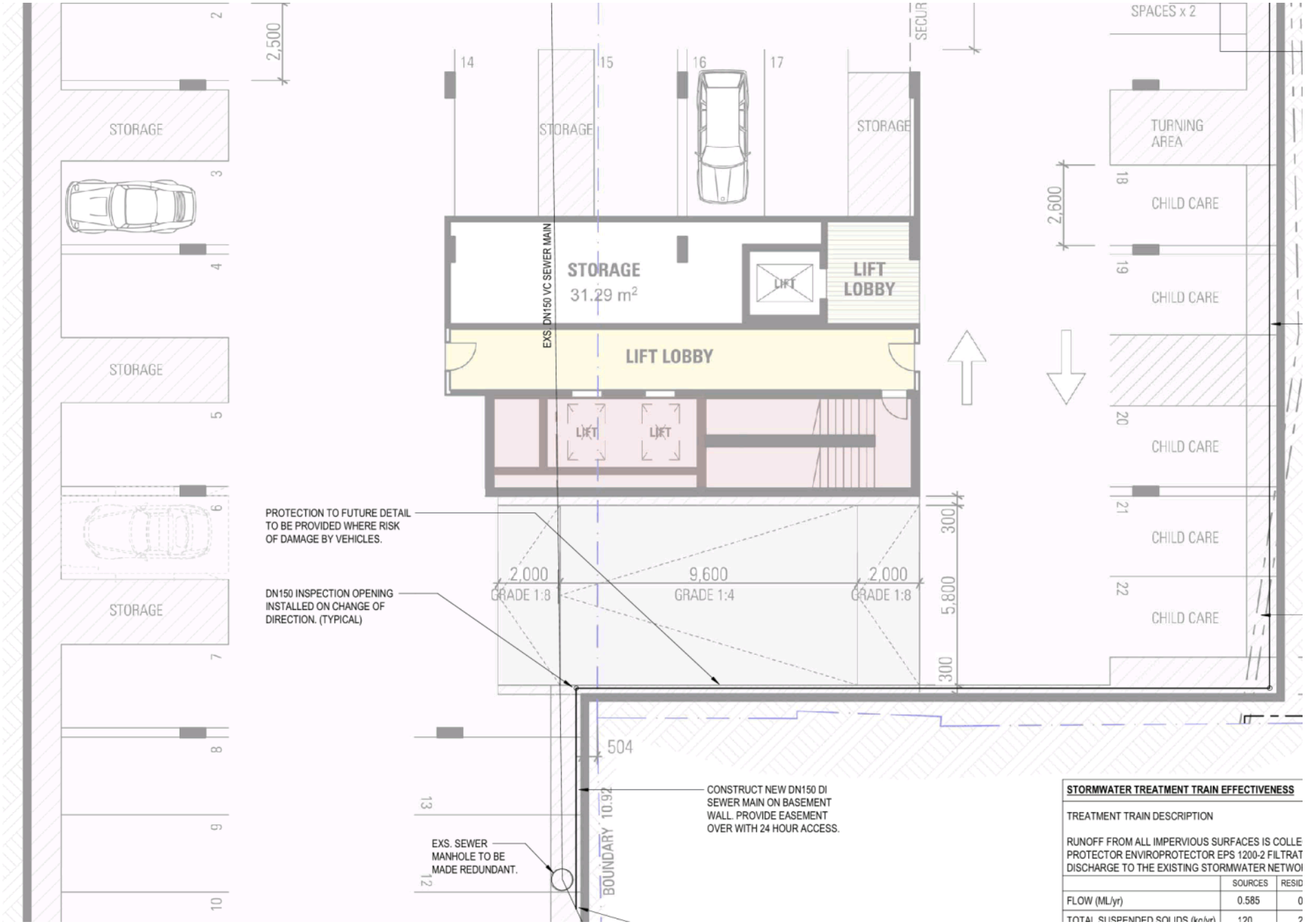

34.88
BACK TO EXS. MANHOLE.
DN225 33.95
FCR
10.18 m²
EXS. WATER CONNECTION TO BE CAPPED AND SEALED BY TASWATER APPROVED CONTRACTOR AT OWNERS COST.
CHILD CARE LOBBY
FFL 34.30
73.60 m²
COMMERCIAL
FFL 34.05
276.79 m²
DN100 PVC-M PN16
ABOVE GROUND DN65 DOMESTIC & DN150 FIRE SERVICES WATER CONNECTION WITH LOW HAZARD BACKFLOW.
MAX 5% GRADE
LETTERBOXES
ESCAPE
FIRE BOOSTER ARRANGEMENT
LIFT
APT LOBBY
FFL 34.70
66.45 m²
ESCAPE
SKYLIGHT OVER
SECURITY ACCESS GATE
REFUSE
10.55 m²
LIFT
LIFT
SERVICES DUCT
RAMP
BICYCLE SPACES



VEHICLE SITE MOVEMENTS AND SIGHT DISTANCE

SCALE 1:100




STORAGE
STORAGE
STORAGE
STORAGE
2,500
14
15
16
17
STORAGE
STORAGE
SECUR
SPACES x 2
TURNING AREA
CHILD CARE
CHILD CARE
CHILD CARE
CHILD CARE
CHILD CARE
2,600
18
19
20
21
22
EXS. DN150 VC SEWER MAIN
STORAGE
31.29 m²
LIFT
LIFT LOBBY
LIFT LOBBY
LIFT
LIFT
PROTECTION TO FUTURE DETAIL TO BE PROVIDED WHERE RISK OF DAMAGE BY VEHICLES.
DN150 INSPECTION OPENING INSTALLED ON CHANGE OF DIRECTION. (TYPICAL)
2,000
GRADE 1:8
9,600
GRADE 1:4
2,000
GRADE 1:8
300
5,800
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CONSTRUCT NEW DN150 DI SEWER MAIN ON BASEMENT WALL. PROVIDE EASEMENT OVER WITH 24 HOUR ACCESS.
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BOUNDARY 10.92
STORMWATER TREATMENT TRAIN EFFECTIVENESS
TREATMENT TRAIN DESCRIPTION
RUNOFF FROM ALL IMPERVIOUS SURFACES IS COLLE
PROTECTOR ENVIROPROTECTOR EPS 1200-2 FILTRAT
DISCHARGE TO THE EXISTING STORMWATER NETWO
SOURCES
RESID
FLOW (ML/yr)
0.585

Department of State Growth

Salamanca Building Parliament Square
4 Salamanca Place, Hobart TAS
GPO Box 536, Hobart TAS 7001 Australia
Email permits@stategrowth.tas.gov.au Web www.stategrowth.tas.gov.au
Ref: D20/40561

Tasmanian Government

Phil Gartrell
Irenelnc Planning Design obo New Pleasant Investment No.2 P/L
c/o 49 Tasma Street
NORTH HOBART TAS 7000
phil@ireneinc.com.au; William.Harkness@jawsarchitects.com

Dear Mr Gartrell

Crown Landowner Consent Granted - 202-206 Macquarie Street, Hobart

I refer to your recent request for Crown landowner consent relating to the development application at 202-206 Macquarie Street, Hobart, for removal of crossovers, construction of new crossover and alterations to water connections in Macquarie street road reserve.

I, Andrew Hargrave, Manager Asset Management, State Roads, the Department of State Growth, having been duly delegated by the Minister under Section 52 (1F) of the *Land Use Planning and Approvals Act 1993* (the Act), and in accordance with the provisions of Section 52 (1B) (b) of the Act, hereby give my consent to the making of the application, insofar as it affects the State road network and any Crown land under the jurisdiction of this Department.

The consent given by this letter is for the **making of the application only** insofar as that it impacts Department of State Growth administered Crown land and is with reference to your application dated 30 January 2020, and the documents approved, as follows:

Approved Document Name	Author	Date Received	Notes
Application for Crown Landowner Consent Form	-	18th February 2020	
Folio Plan and Text – CT 145283/1 and 145283/2	-	18th February 2020	
Development Application Drawings Set – Drawings DA01-DA20, Issue: Development Application, Dated 11/10/19, Plot Date 28/1/20	Jaws Architects	18th February 2020	
Planning Submission to Hobart City Council, last updated 7th February 2020	Irenelnc and Smith Street Studio	18th February 2020	
Traffic Impact Assessment – Proposed Residential Apartment and Commercial Development, 202 – 206 Macquarie Street, Hobart, dated October 2019	Milan Prodanovic	18th February 2020	

Statement of Historical Archaeological Potential, October 2019	Praxis Environment	18th February 2020	
Document Transmittal – Planning Approval, 19.0123 206 Macquarie Street, Hydraulics, dated 11/10/2019	Gandy and Roberts Consulting Engineers	18th February 2020	
Letter to Mac Hull – Subject: Mobil Hobart (T02603) – No Further Action Report, dated 6 November 2019	Golder Associates Pty Ltd	18th February 2020	
Drawing: Concept Services – Ground, Drawing Ref. H010, Rev 2, Dated 2/4/2020	Gandy and Roberts Consulting Engineers	9th April 2020	
Drawing: Concept Services – Basement, Drawing Ref. H011, Rev 2, Dated 2/4/2020	Gandy and Roberts Consulting Engineers	9th April 2020	
Drawing: Awning over footpath, Rev 02. Drawn 11/10/19, Plot date 31/3/20,	Jaws Architects	9th April 2020	

In giving consent to lodge the subject development application, the Department notes the following applicable advice:

- The removal of the first parking meter adjacent (up-steam) of the crossover to create a short left turn taper and remove turning vehicles out of the through lane is supported by the Department of State Growth.

- Please note that traffic flows on Macquarie Street are under constant review and that the current kerb site parking arrangement could change at any time. Therefore, development should not rely on these parking spaces in the longer term.

- There is an expectation that lane closures on Macquarie Street for construction works should be avoided as much as possible. Any works that do require traffic management on Macquarie Street should be undertaken between 6.30pm and 6.30am and in accordance with the guidelines on our website for planned work on major commuting routes.

- Pedestrian safety in the area needs to be prioritised and there should be some means, whether through signage or line marking, to make it clear to internal users of the site that they must be aware of pedestrians at this location.

Access – construction or alteration (Access works permit required):
In giving consent to lodge the subject development application, the Department notes that the proposed access to the State road network will require the following additional consent:

The consent of the Minister under Section 16 of the *Roads and Jetties Act 1935* to undertake works within the State road reservation.

For further information please visit http://www.transport.tas.gov.au/road/permits or contact permits@stategrowth.tas.gov.au.

On sealed State roads all new accesses must be sealed from the road to the property boundary as a minimum.

A single access serving multiple properties must be constructed with sufficient width to enable vehicles to enter and leave the roadway simultaneously.

Pursuant to Section 16 of the Roads and Jetties Act 1935, where a vehicle access has been constructed from land to a State highway or subsidiary road, the owner of that land is responsible for the maintenance and repair of the whole of the vehicular access.

The Department reserves the right to make a representation to the relevant Council in relation to any aspect of the proposed development relating to its road network and/or property.

Yours sincerely

Andrew Hargrave
MANAGER ASSET MANAGEMENT

Delegate of
Minister for Infrastructure and Transport
Michael Ferguson MP

11 May 2020

cc: General Manager, Hobart City Council

RESULT OF SEARCH

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

SEARCH OF TORRENS TITLE

VOLUME	FOLIO
145283	1
EDITION	DATE OF ISSUE
5	21-Apr-2009

SEARCH DATE : 11-Feb-2020
SEARCH TIME : 12.14 PM

DESCRIPTION OF LAND

City of HOBART
Lot 1 on Plan 145283
Being the land described in Conveyance No.29/9494
Derivation : Part of 0a-0r-37p granted to James Roberts & part of 0a-1r-23p granted to James Grant
Derived from A19210

SCHEDULE 1

MOBIL OIL AUSTRALIA PTY LTD

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
BURDENING EASEMENT: Right of Drainage (appurtenant to for George Alfred Jackson over the Drainage Easement as shown on Plan No.145283

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

RESULT OF SEARCH

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

SEARCH OF TORRENS TITLE

VOLUME	FOLIO
145283	2
EDITION	DATE OF ISSUE
3	24-Oct-2008

SEARCH DATE : 11-Feb-2020
SEARCH TIME : 12.15 PM

DESCRIPTION OF LAND

City of HOBART
Lot 2 on Plan 145283
Being the land described in Conveyance No.29/9493
Derivation : Part of 0a-0r-37p granted to James Roberts & part of 0a-1r-23p granted to James Grant
Derived from A19210

SCHEDULE 1

MOBIL OIL AUSTRALIA PTY LTD

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

FILE NUMBER A.19210

GRANTEE PART OF 0A.0R.37P GRANTED TO JAMES ROBERTS + PART OF 0A.1R.23P GRANTED TO JAMES GRANT.

CONVERSION PLAN

LOCATION CITY OF HOBART (SEC. C.)

CONVERTED FROM 29/9493 + 29/9494

NOT TO SCALE LENGTHS IN METRES

REGISTERED NUMBER **P145283**

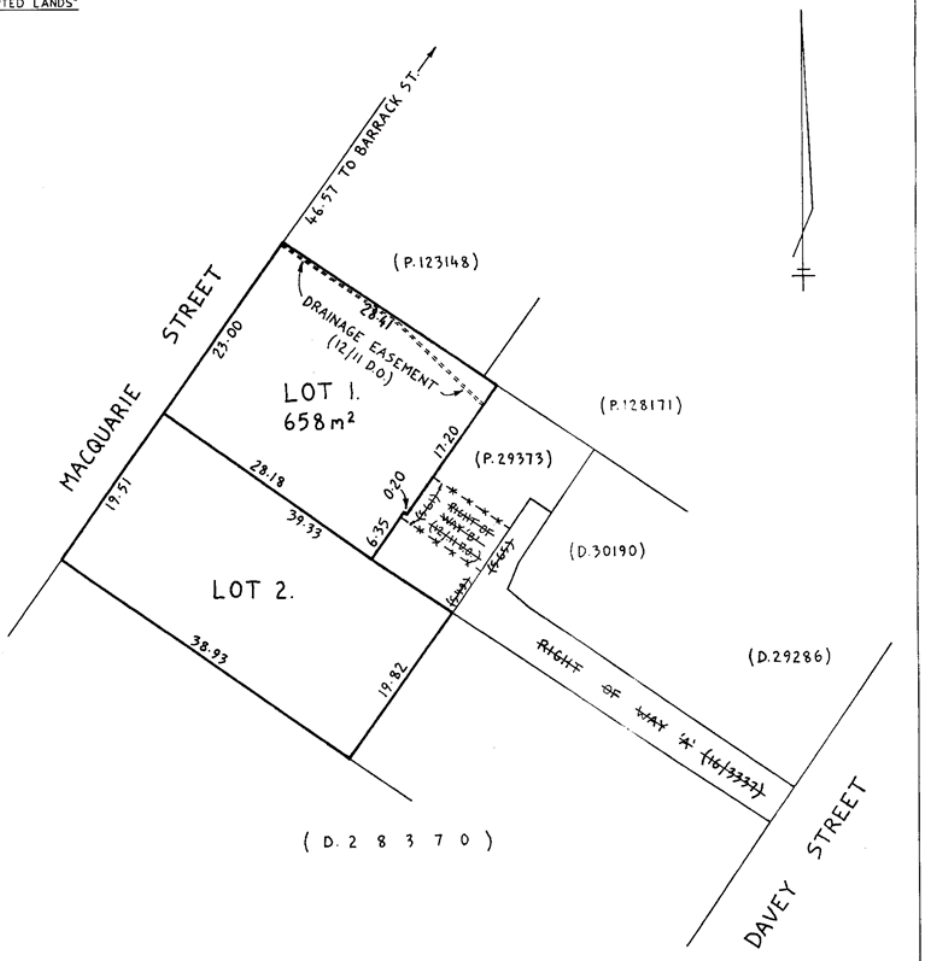
APPROVED 8 NOV 2005

Alice Kava
Recorder of Titles

MAPSHEET MUNICIPAL CODE No. 114 (5225-52) | LAST UPI No. GCM85 + GCM86 | ALL EXISTING SURVEY NUMBERS TO BE CROSS REFERENCED ON THIS PLAN | DRAWN V.B.

SKETCH BY WAY OF ILLUSTRATION ONLY

"EXCEPTED LANDS"



C896241 RELEASE OF EASEMENT
RIGHTS OF WAY 'A' & 'B' DELETED
PURSUANT TO SECTION 108
LAND TITLES ACT 1980

Alice Kava 21 APR 2009

RECORDER OF TITLES DATE

DOCUMENT TRANSMITTAL
Planning Approval

GANDY AND ROBERTS
159 DAVEY ST
HOBART TASMANIA
AUSTRALIA 7000
CONSULTING ENGINEERS

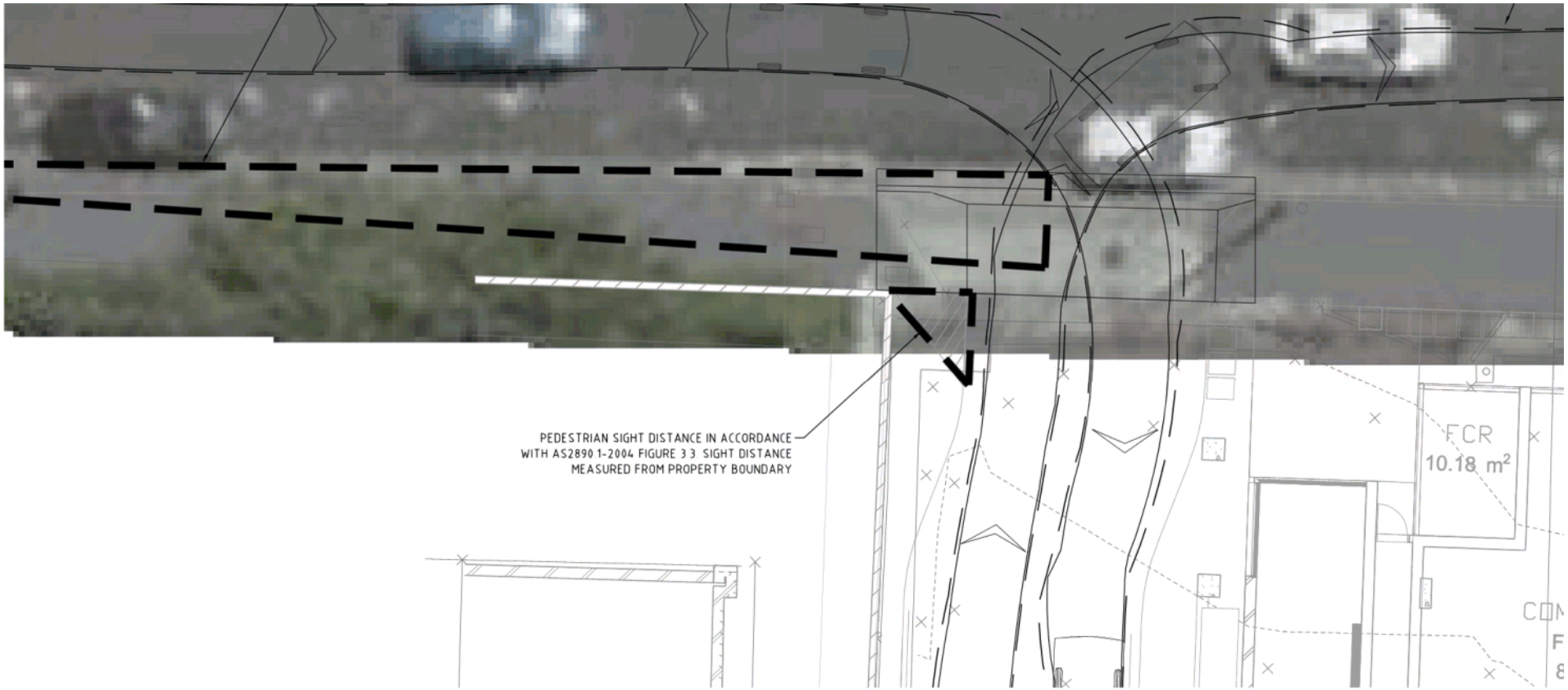
19.0123 206 Macquarie Street Hydraulics

Date:	11/10/2019
Transmittal #:	19.0123 TR-X01
From:	Adam Kohl
How Delivered:	Emailed
Issue Type:	Development Approval
Format:	PDF
Subject:	Planning Approval
Note:	

Distributed To	Company
William Harkness	Jacob Allom Wade Pty Ltd

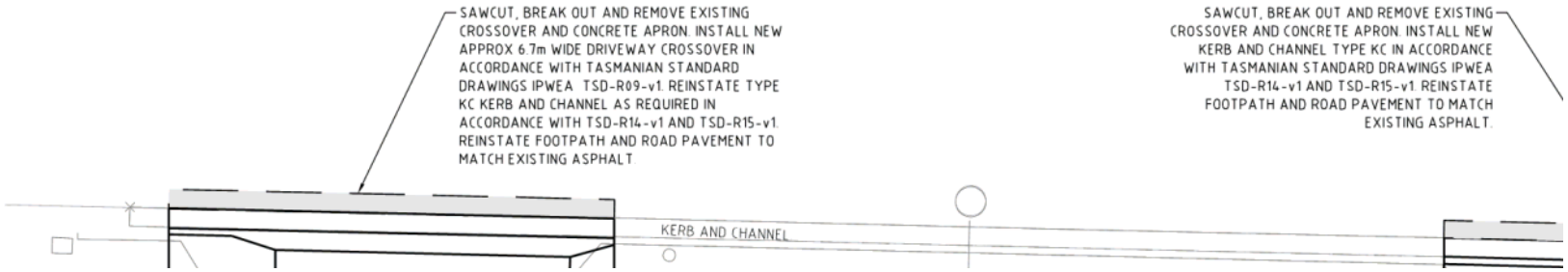
We issue here with the documents listed below. The recipient is responsible to remove superseded issues of the accompanying documents from circulation.

Document (ProjNo_DocNo_Rev_DocName)
19.0123_C010_1_SITEWORKS AND VEHICLE SIGHT PLAN.pdf
19.0123 Calculations.pdf
19.0123 H010.pdf
19.0123 H011.pdf



VEHICLE SITE MOVEMENTS AND SIGHT DISTANCE

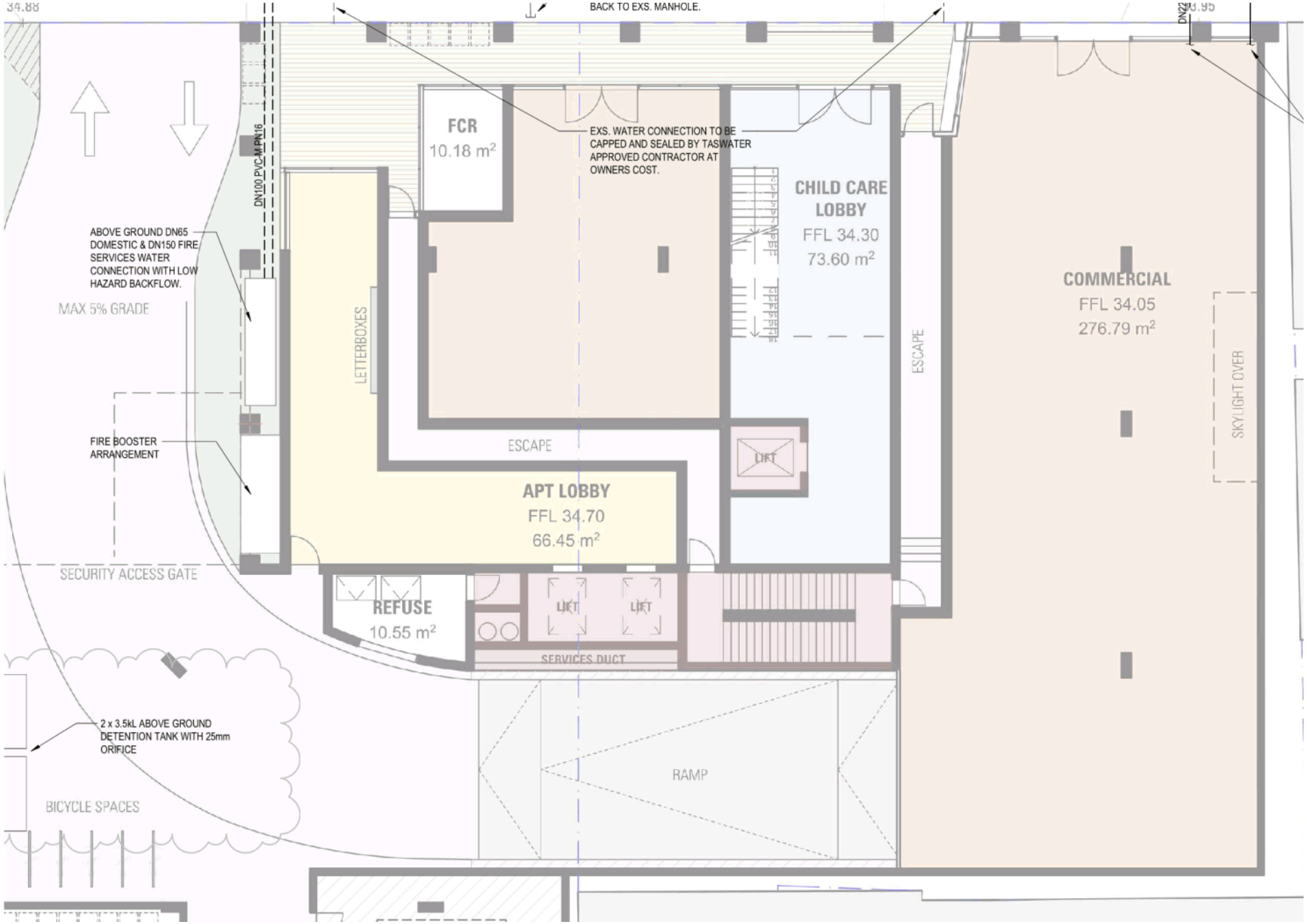
SCALE 1:100



Level	Basins	Bath	DWM	Water Closet	Sink	CWM	FHR	TRO	Shower	ET's	Area Type
Basement L2	0	0	0	0	0	0	1	0	0	0	Carpark
Basement L1	0	0	0	0	0	0	1	0	0	0	Carpark
Ground Floor	2	0	1	1	3	0	0	1	5	0.88	Lobby/Café MP01
1st Floor	4	0	1	4	2	0	0	1	1	8	Child Care CF01
2nd Floor	14	0	7	14	7	7	0	7	12	5.25	Apartments RA02
3rd Floor	16	0	7	16	7	7	0	7	15	5.25	Apartments RA02
4th Floor	16	0	7	16	7	7	0	7	15	5.25	Apartments RA02
5th Floor	16	0	7	16	7	7	0	7	15	5.25	Apartments RA02
6th Floor	7	0	4	8	4	4	0	4	8	3	Apartments RA02
7th Floor	7	0	4	7	4	4	0	4	7	3	Apartments RA02
8th Floor	8	1	4	8	4	4	0	4	8	3	Apartments RA02
Totals	90	1	42	90	45	40	2	42	86	38.88	
Fixture Units	90	4	126	360	135	200		210	172		
Loading Units	90	8	126	180	135	120	46	126	172		
Total Fixture Units	1297										
Total Loading Units	1003										
Fixture Unit Flow (Sewer)	12.3	L/s							Extrapolated from AS3500.3		
Loading Unit Flow (Water)	4.47	L/s									
Average Dry Weather Flow	0.209952	L/s									
d' From WSA02 Figure C1	12.79										
Peak Dry Weather Flow	2.685286	L/s									

Water Demands

Probable Simultaneous Domestic Water Flow	1766	Loading Units	
Domestic Flow	4.47	L/s	600kPa
Fire Hydrant Flow	20	L/s	600kPa
Fire Sprinkler Flow	12	L/s	600kPa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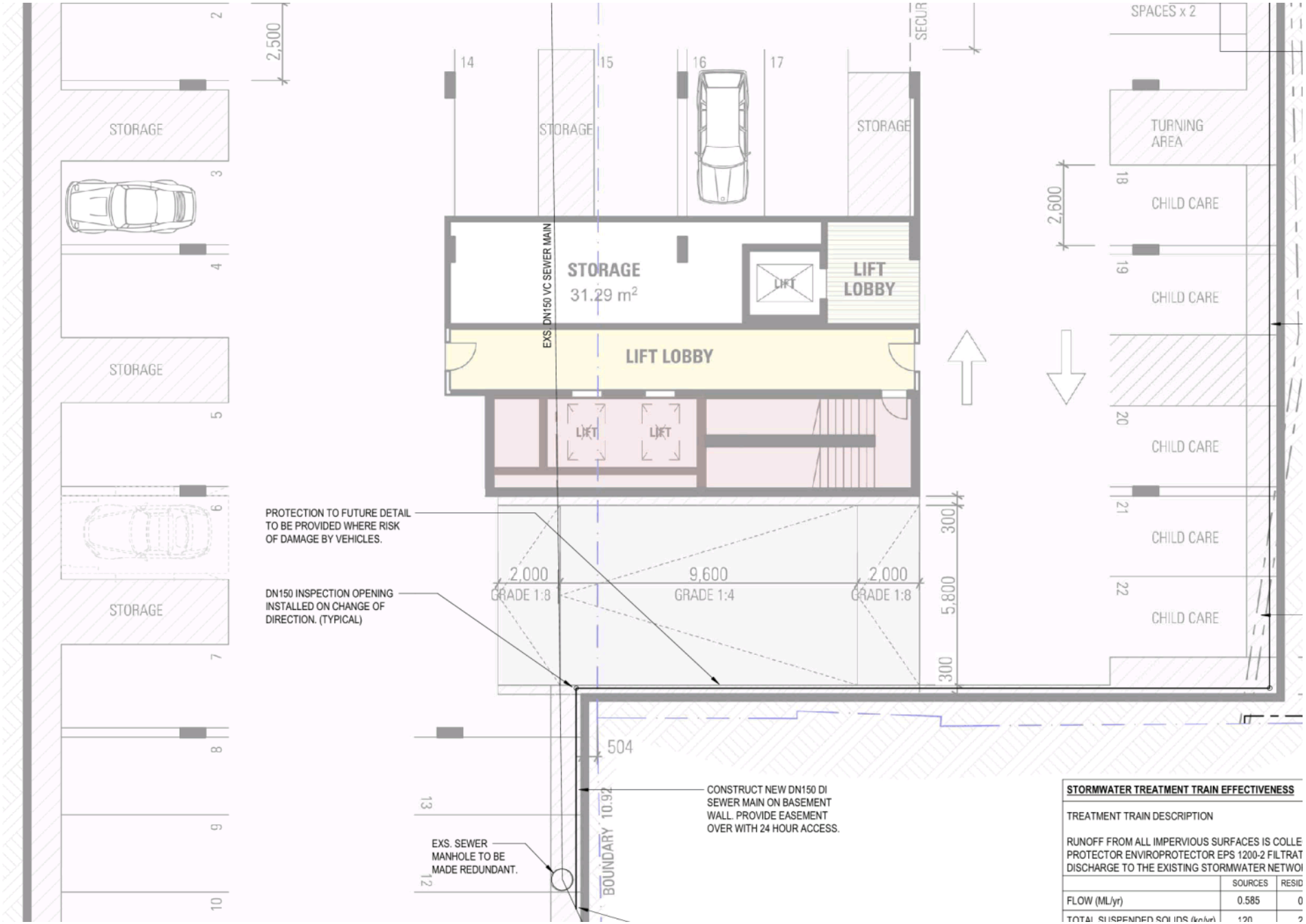
ABOVE GROUND DN65 DOMESTIC & DN150 FIRE SERVICES WATER CONNECTION WITH LOW HAZARD BACKFLOW.
MAX 5% GRADE
LETTERBOXES
ESCAPE
SKYLIGHT OVER
FIRE BOOSTER ARRANGEMENT
LIFT
APT LOBBY
FFL 34.70
66.45 m²
SECURITY ACCESS GATE
REFUSE
10.55 m²
LIFT
LIFT
SERVICES DUCT
2 x 3.5kL ABOVE GROUND DETENTION TANK WITH 25mm ORIFICE
RAMP
BICYCLE SPACES


STORAGE
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2,500
14
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16
17
STORAGE
STORAGE
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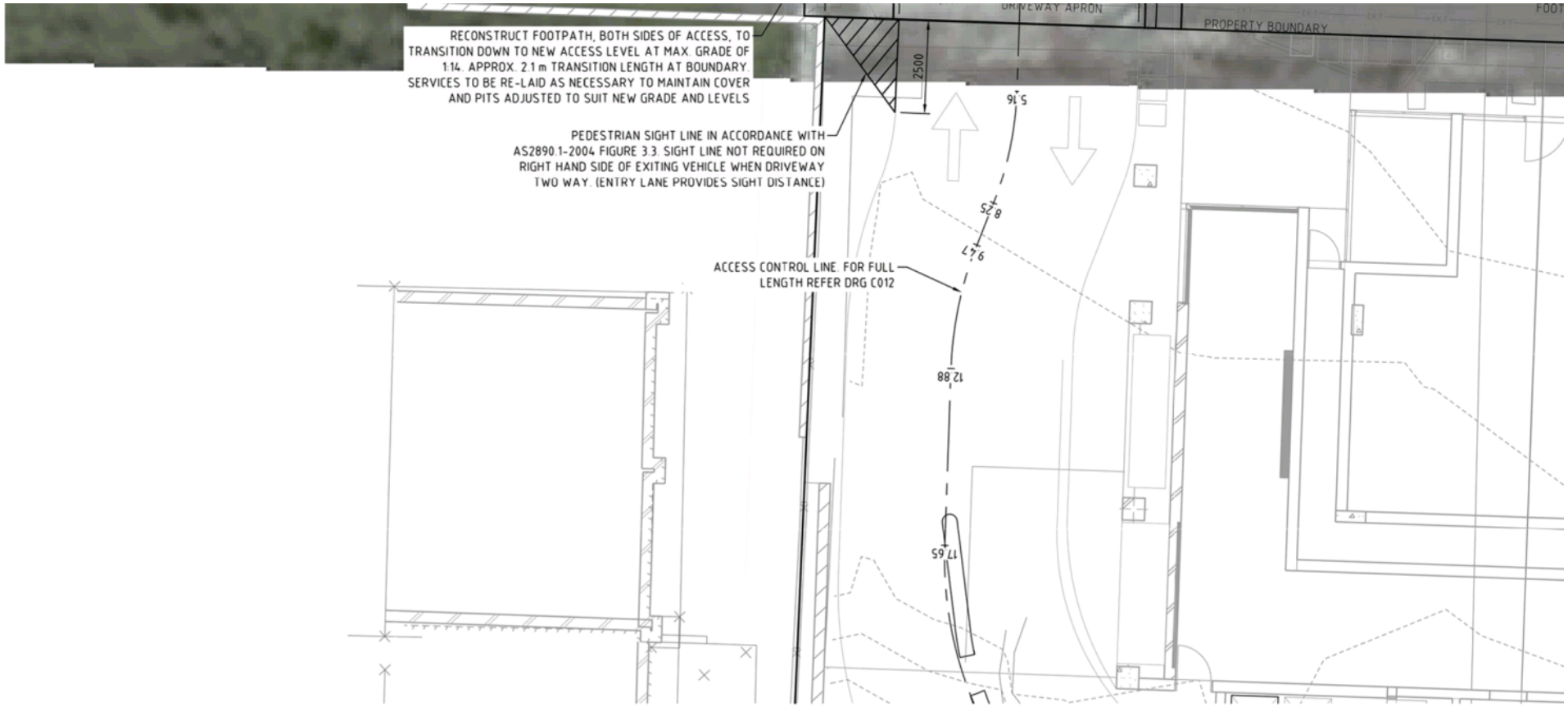
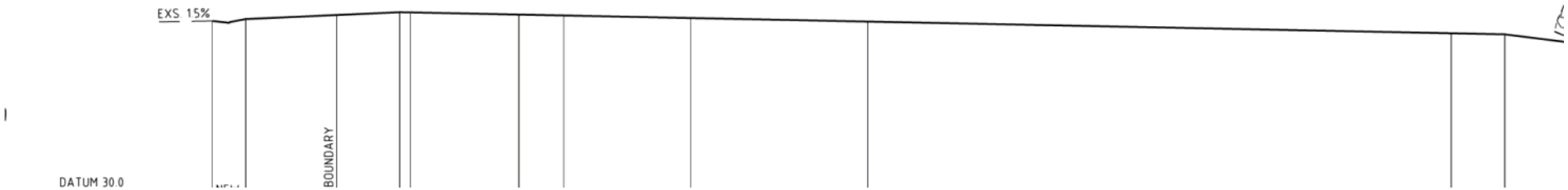
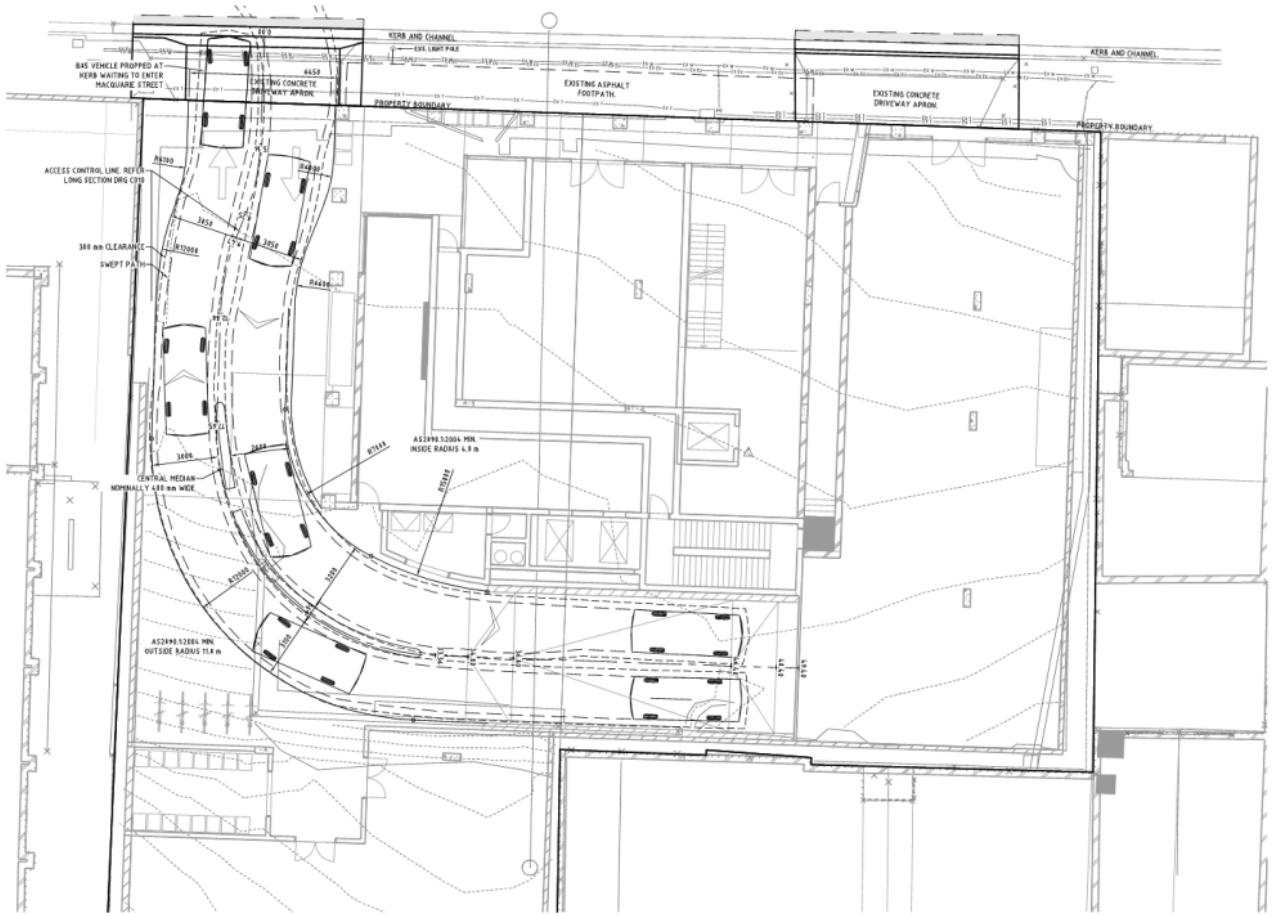
SPACES x 2
TURNING AREA
CHILD CARE
CHILD CARE
CHILD CARE
CHILD CARE
CHILD CARE
CHILD CARE
2,600
18
19
20
21
22
EXS. DN150 VC SEWER MAIN
STORAGE
31.29 m²
LIFT
LIFT LOBBY
LIFT LOBBY
LIFT
LIFT
PROTECTION TO FUTURE DETAIL TO BE PROVIDED WHERE RISK OF DAMAGE BY VEHICLES.
DN150 INSPECTION OPENING INSTALLED ON CHANGE OF DIRECTION. (TYPICAL)
2,000
GRADE 1:8
9,600
GRADE 1:4
2,000
GRADE 1:8
300
5,800
300
504
CONSTRUCT NEW DN150 DI SEWER MAIN ON BASEMENT WALL. PROVIDE EASEMENT OVER WITH 24 HOUR ACCESS.
EXS. SEWER MANHOLE TO BE MADE REDUNDANT.
BOUNDARY 10.92
STORMWATER TREATMENT TRAIN EFFECTIVENESS
TREATMENT TRAIN DESCRIPTION
RUNOFF FROM ALL IMPERVIOUS SURFACES IS COLLE
PROTECTOR ENVIROPROTECTOR EPS 1200-2 FILTRAT
DISCHARGE TO THE EXISTING STORMWATER NETWO
SOURCES
RESID
FLOW (ML/yr)
0.585
0



SITEWORKS PLAN

SCALE 1:100





ACCESS RAMP DETAILS AND SWEPT PATHS
NTS

REV	DESCRIPTION	APP'D	DATE
3	REISSUED FOR PLANNING APPROVAL	SP	16.07.2020
2	REISSUED FOR PLANNING APPROVAL	SP	15.06.2020
1	PLANNING APPROVAL	AR	11.10.2019

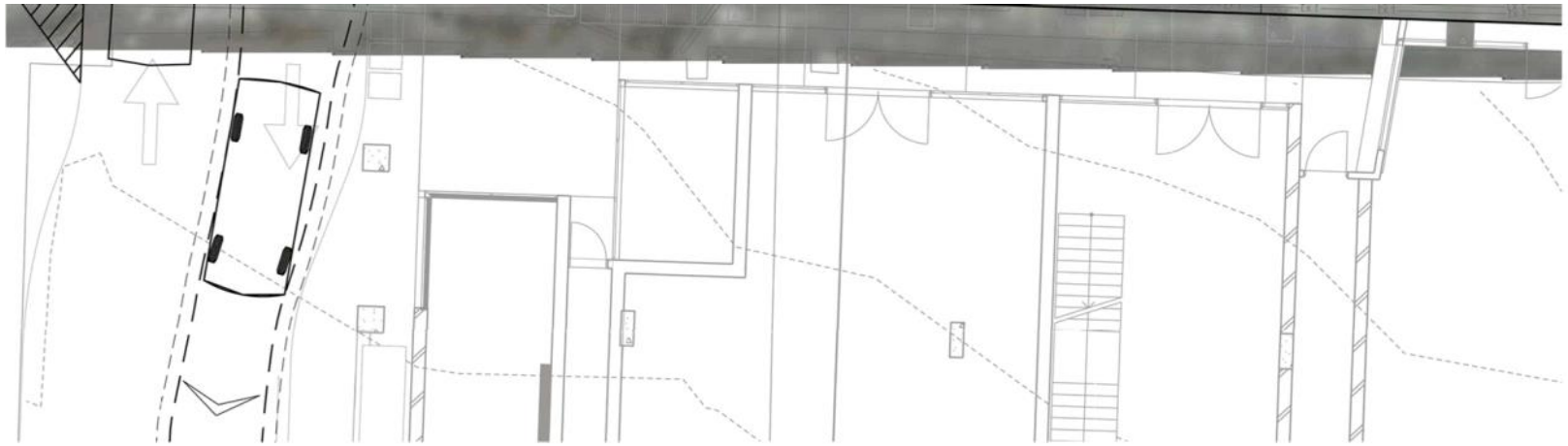
THIS DRAWING HAS NOT BEEN APPROVED FOR CONSTRUCTION

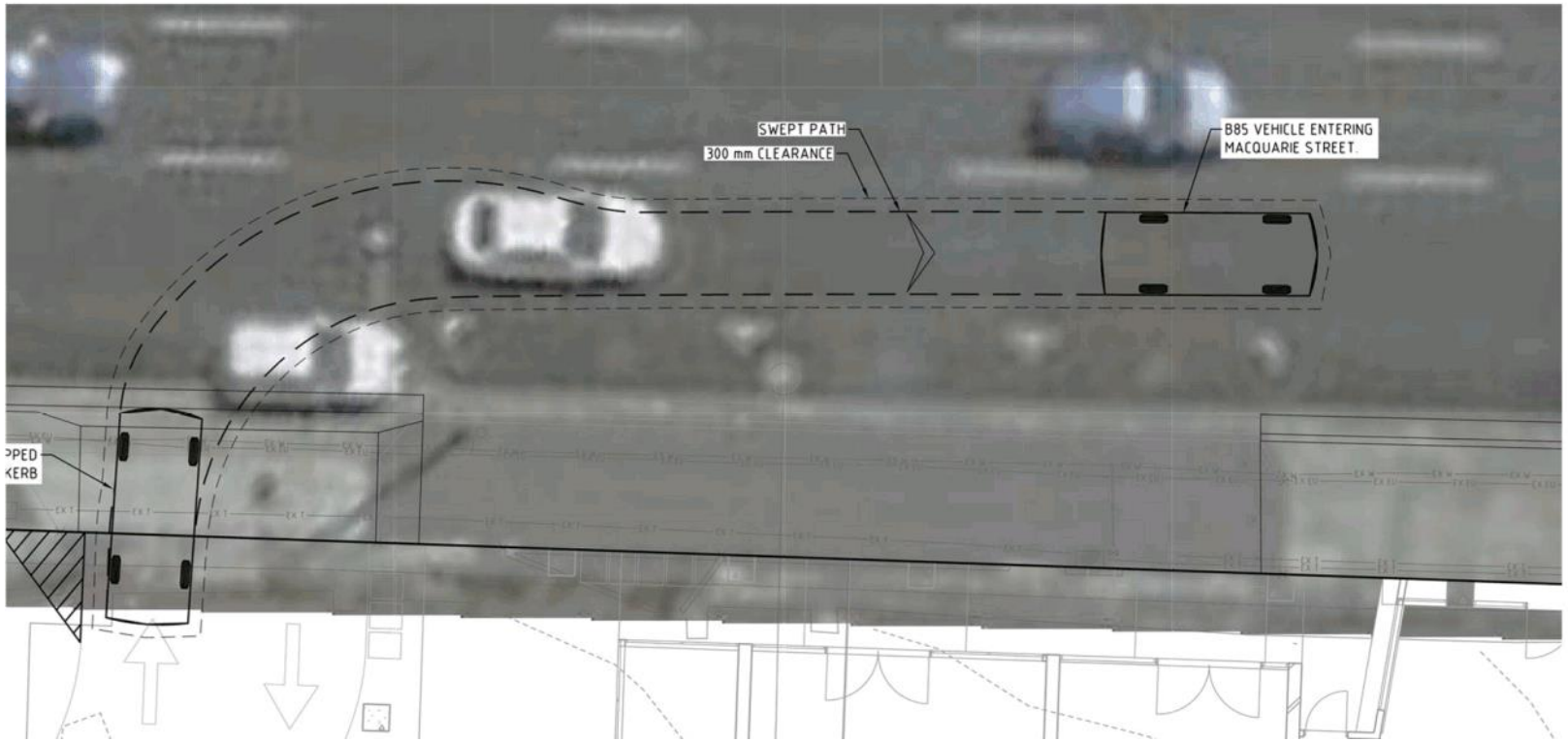
GANDY AND ROBERTS CONSULTING ENGINEERS
159 DAVEY ST, HOBART
TASMANIA, AUSTRALIA 7000
www.gandyandroberts.com.au
mail@gandyandroberts.com.au
ph 03 6223 8877 fx 03 6223 7183

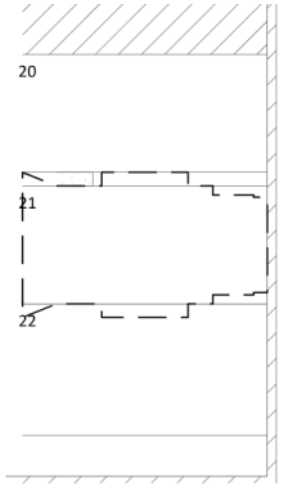
MACQUARIE ST APARTMENTS
206 MACQUARIE STREET
HOBART 7000
DRAWING TITLE
ACCESS RAMP DETAILS AND SWEPT PATHS

SCALE	DESIGNED	DRAWN	CHECKED
1:100 @A1	DH	DH	AC

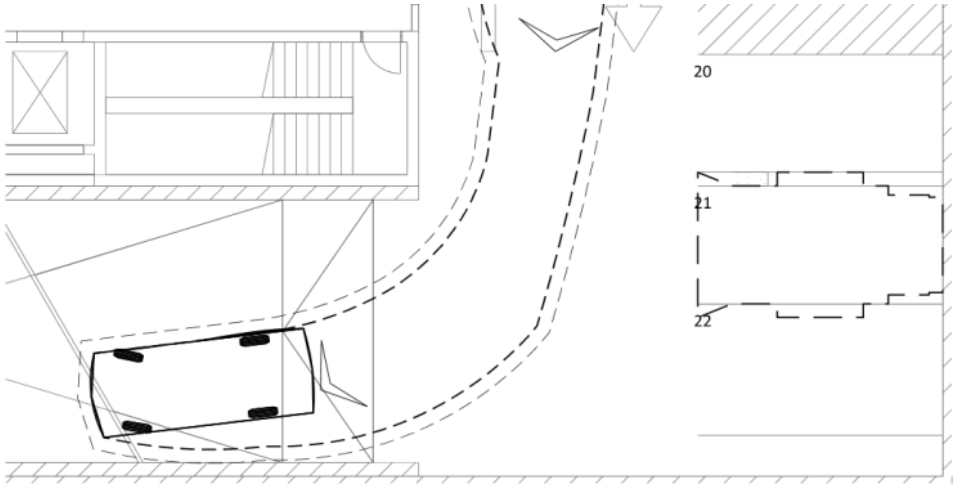
PROJECT	DRAWING	REVISION
19.0123	C011	3




SWEPT PATH
300 mm CLEARANCE
B85 VEHICLE ENTERING
MACQUARIE STREET
PPED
KERB

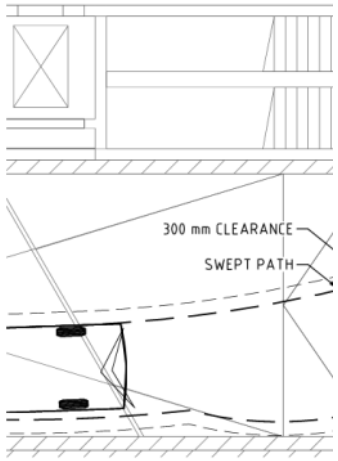


RSE ENTRY MANEUVERE FOR BASEMENT 1
ND BASEMENT 2 BAYS 17-22

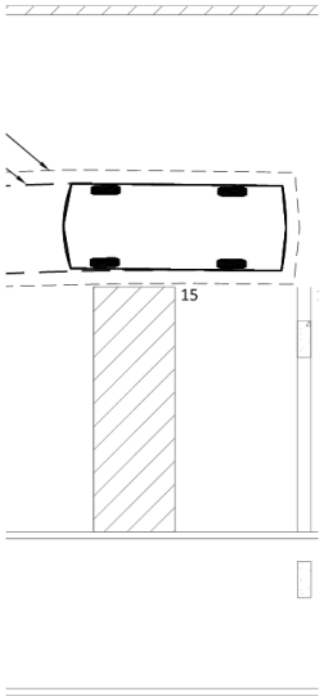


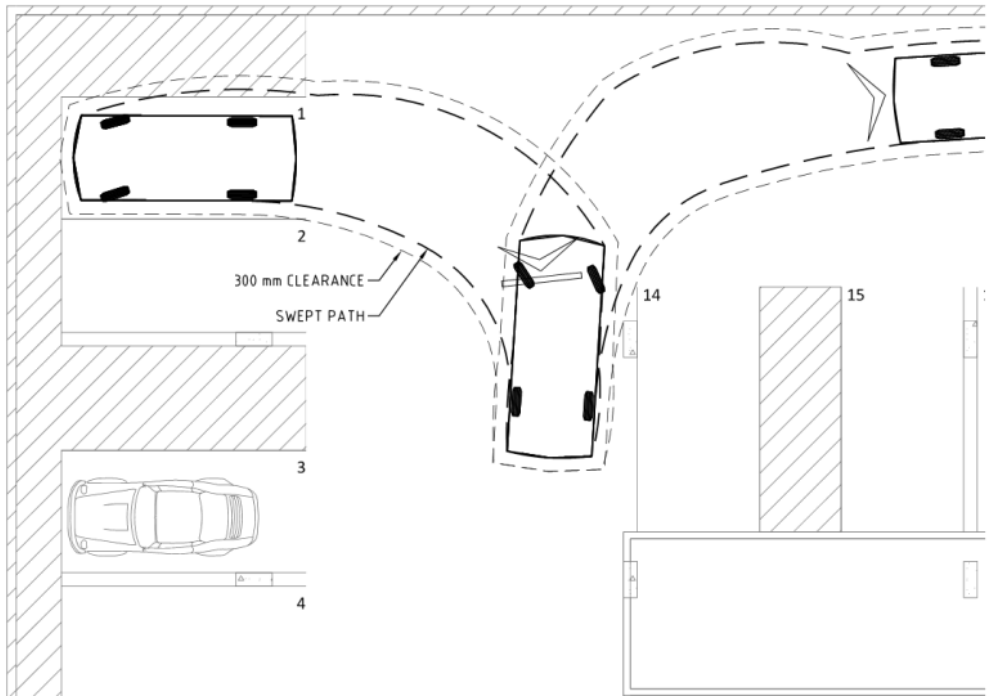
BASEMENT 1 BAY 18 - FORWARD EXIT

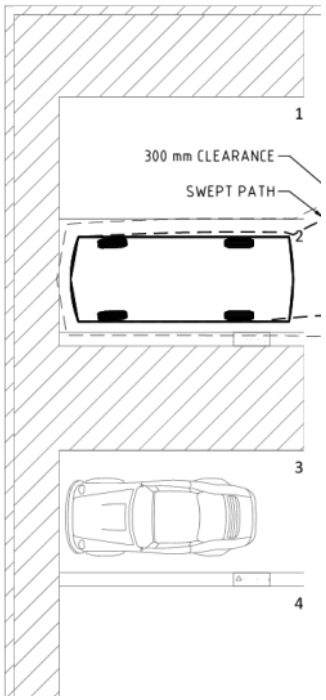
TYPICAL FORWARD EXIT MANEUVERE FOR BASEMENT 1
BAYS 18-22 AND BASEMENT 2 BAYS 17-22

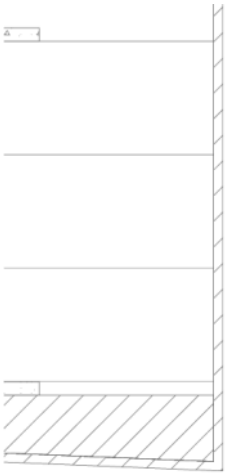


BASEMENT 1 BAY 22 - RI

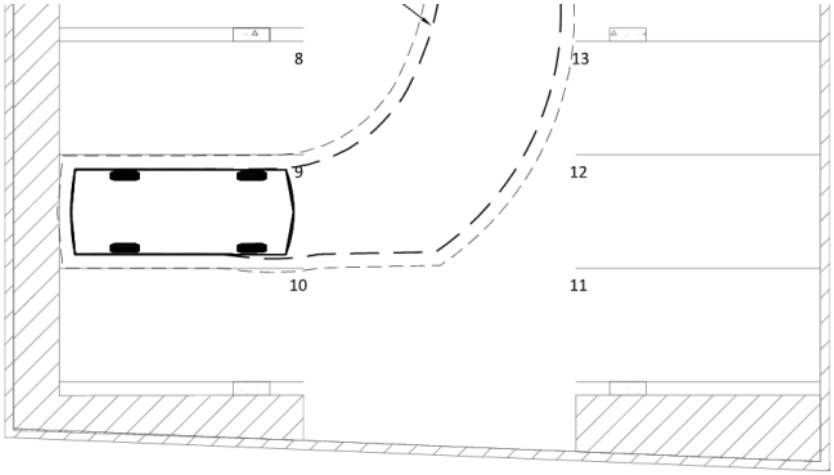






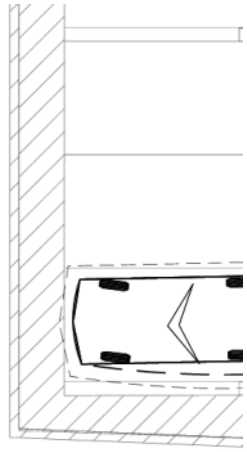


SE ENTRY MANEUVERE FOR BASEMENT 1
13 AND BASEMENT 1 BAYS 3-8 & 11-12

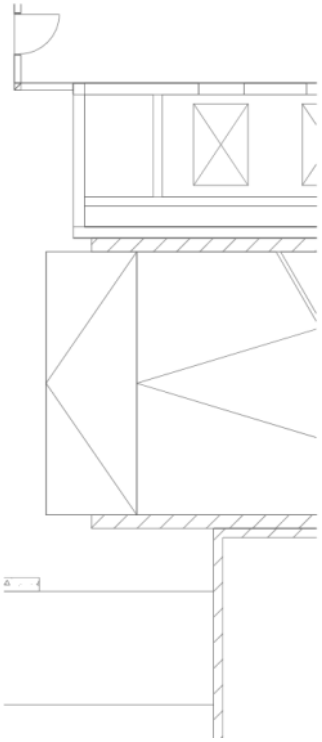


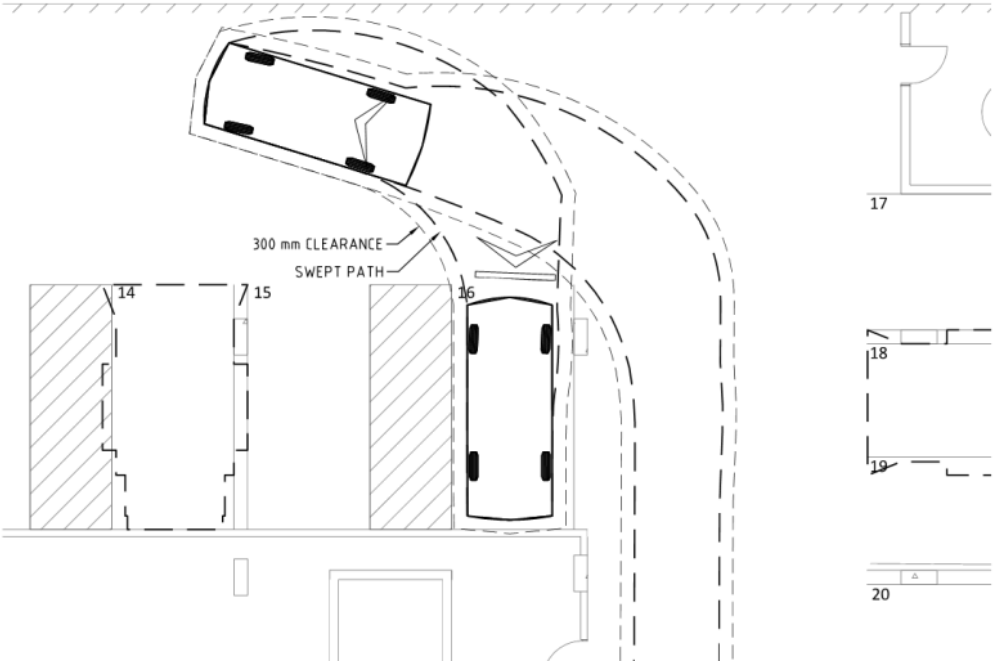
BASEMENT 1 BAY 9 - FORWARD EXIT

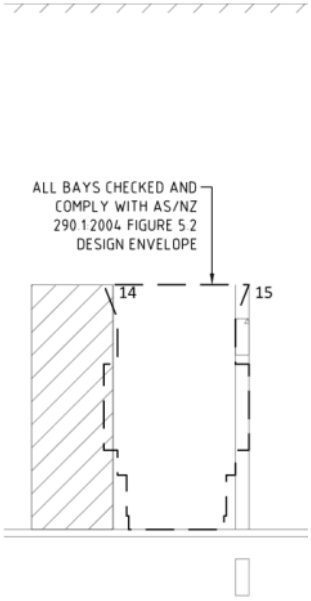
TYPICAL FORWARD EXIT MANEUVERE FOR BASEMENT 1
BAYS 5-9 & 12-13 AND BASEMENT 1 BAYS 3-8 & 11-12

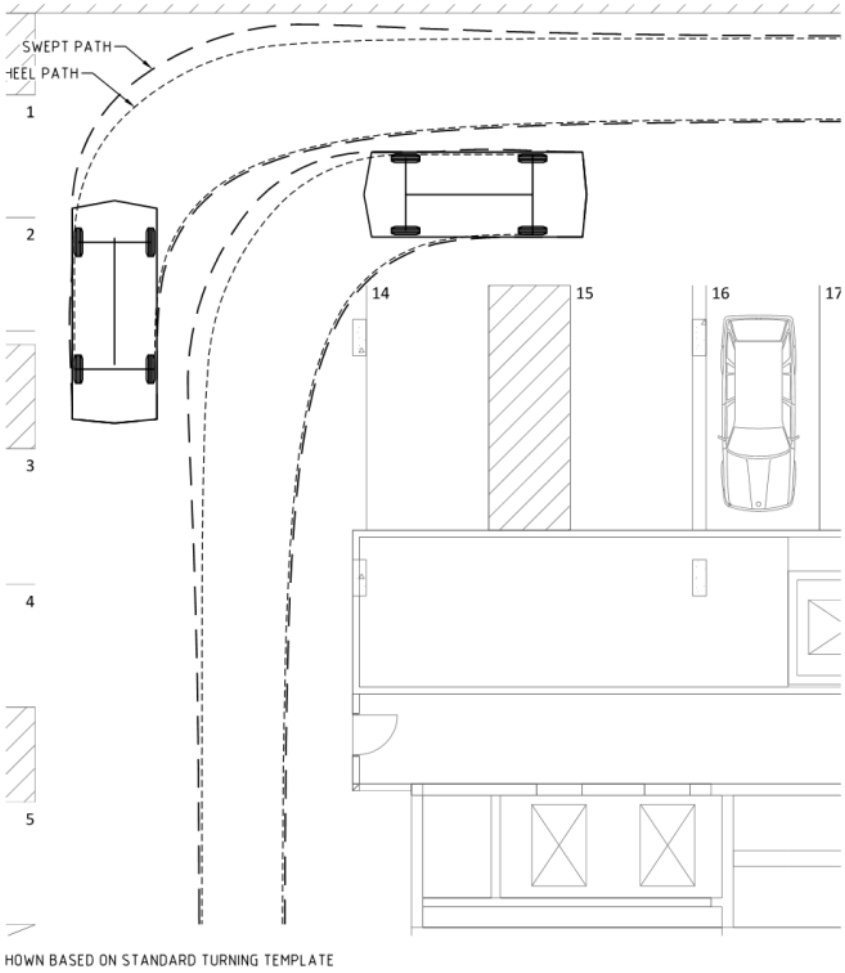


BASEMENT 1 BAY 10 - I



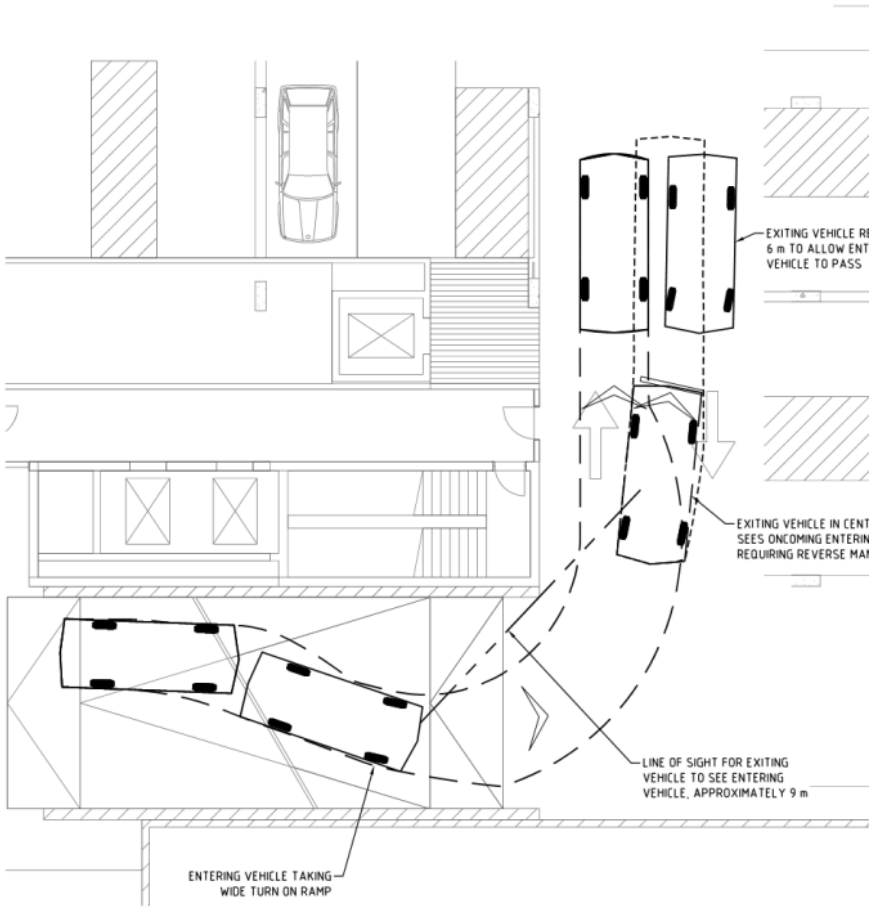




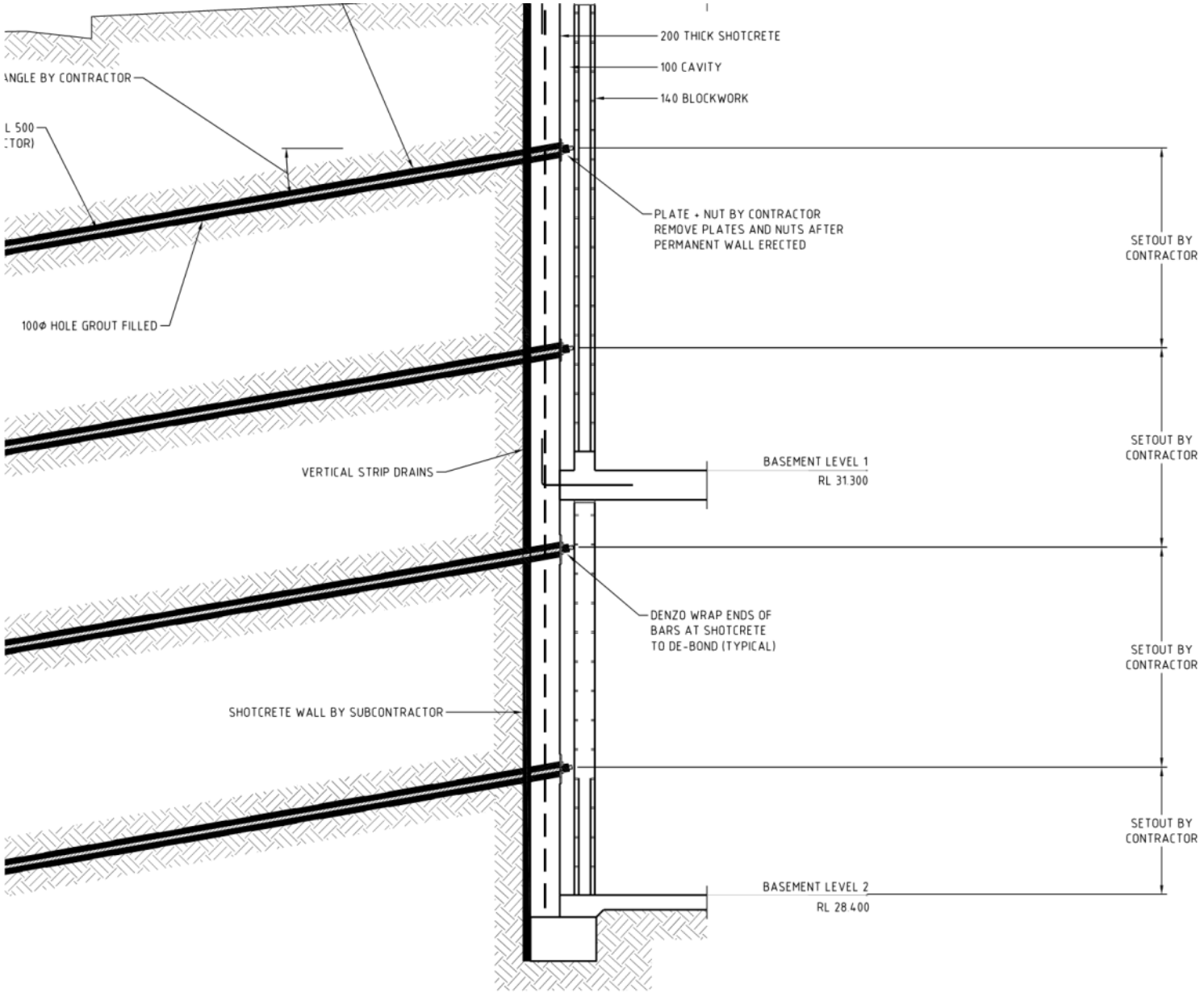


HOWN BASED ON STANDARD TURNING TEMPLATE

ASEMENT 90° BEND SWEPT PATH

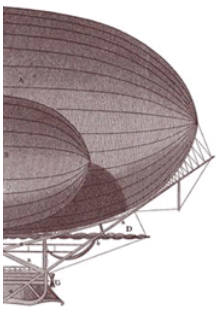


TYPICAL RAMP SWEPT PATH



SOIL NAIL WAL
1. LOCATE ALL SE
2. EXCAVATE NOM
3. DRILL SOIL NAIL
4. INSERT NAILS A
5. INSTALL STRIP
6. INSTALL PLATE
7. CONTINUE WITH
8. INSTALL FLOOR
9. GROUTED BARS

ON-GOING MAINTENA



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159 DAVEY ST
HOBART TASMANIA
AUSTRALIA 7000
CONSULTING ENGINEERS

15.06.2020

Our ref: 19.0123

Ireneinc Planning and Urban Design
49 Tasma Street
North Hobart TAS 7001

Att: Phil Gartrell

Dear Phil

PROPOSED RESIDNETIAL APARTMENT AND COMMERCIAL DEVELOPMENT 202-206 MACQUARIE STREET, HOBART

We refer to the Request for Additional Information from the City of Hobart, dated 25 May 2020, regarding the planning permit application at the above address.

We have been requested to address Items PA 1, PA 2.1, PA 2.2, PA 5.1, PA 5.2 and the sections Stormwater Code and Engineering Road. Responses to these items have been detailed in Attachment A.

Yours faithfully

Simon Palmer BE DipPM MIEAust
Senior Civil Engineer

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Attachment A - Request for Information Response

Parking and Access

PA 1 *Scaled and dimensioned design drawing(s) demonstrating the number of vehicle access points (i.e. driveway entrances) for the property.*
To satisfy Hobart Interim Planning Scheme 2015 clause E5.6.2 Acceptable Solution A2, the scaled and dimensioned design drawings must include:

- *Fully dimensioned site plan showing the location of one (1) proposed vehicle access point for an access providing both entry and exit; and*
- *Site plan showing the redundant vehicle access point to be reinstated in accordance with the relevant Public Works Engineering Australia (IPWEA), Local Government Association Tasmania (LGAT) standard drawing.*

Response:

- The existing 8.4 m wide southern access to the site is to be retained and this is noted on drawing 19.0123 C010 Rev 2.
- Redundant vehicle access point reinstatement requirement was noted on the previously submitted drawing 19.0123 C010 Rev 2.

The acceptable solution has been demonstrated.

PA 2.1 *Scaled and dimensioned drawing(s) demonstrating the vehicular access design, or a design that provides safe and efficient access.*
To satisfy Hobart Interim Planning Scheme 2015 clause E6.7.2 Acceptable Solution A1 and AS/NZS 2890.1:2004 Section 3, the scaled and dimensioned design drawings must include

- *Plan view and long section along the proposed crossover, any footpath(s) and access centreline, showing the gradient and elevation of the finished surface level and existing natural surface level; including transitions at change of grades, where required to comply with AS/NZS 2890.1:2004 Section 2.5.3(d). The long section must demonstrate that a B85 vehicle, in accordance with AS/NZS 2890.1:2004 Section 2.6.2, can access the driveway from the road pavement into the property without scraping the car's underside.*
- *Plan view of the proposed vehicular access showing turning swept paths for B85 vehicle for right hand turns entering and exiting the driveway. The swept paths must demonstrate that a vehicle entering from Macquarie Street can do so whilst a vehicle exiting the carpark is propped at the kerb.*

Where the access design drawing(s) do not comply with the Australian Standards AS/NZS 2890.1:2004 provide a certification by a suitably qualified engineer that the design provides for a safe and efficient access, this will then be assessed under Performance Criteria.

Response:

- A long section has been provided on drawing 19.0123 C010 Rev 2 demonstrating that a B85 vehicle does not bottom out.
- A swept path has been provided on drawing 19.0123 C012 Rev 2 demonstrating that a vehicle entering from Macquarie Street can do so whilst a vehicle exiting the car park is propped at the kerb.

The acceptable solution has been demonstrated.

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PA 2.2 *Scaled and dimensioned drawing(s) demonstrating vehicular and pedestrian sight distances. To satisfy Hobart Interim Planning Scheme 2015 clause E6.7.2 Acceptable Solution A1, clause E5.6.4 Acceptable Solution A1, and AS/NZS 2890.1:2004 Section 3, the scaled and dimensioned design drawings must include:*

- *Fully dimensioned plan view and elevation showing pedestrian sight lines 2.0m either side of the vehicular access (i.e. driveway entrance) at the boundary to the site in accordance with AS/NZS 2890.1:2004 Section 3.2.4. Pedestrian sight lines must be entirely within the subject property;*
- *Fully dimensioned plan view and elevation showing vehicular sight lines either side of the vehicular access (i.e. driveway entrance) 2.5m from the road frontage in accordance with AS/NZS 2890.1:2004 Section 3.2.4;*

Where the design drawing(s) do not comply with the above clause(s) and Australian Standard(s), provide a certification by a suitably qualified engineer that the design provides for a safe, efficient and convenient access. This will then be assessed under performance criteria of the Hobart Interim Planning Scheme 2015.

Response:

The pedestrian sight line on the left-hand side of the exiting lane was shown on the previously submitted drawing 19.0123 C010 Rev 1. A pedestrian sight line is not required on the right-hand side of the exiting vehicle as noted in Figure 3.3 AS/NZS 2890.1:2004. The existing footpath level remains unchanged and the internal property grade is 2%. The area is relatively flat with no vertical obstructions and a clear line of sight; therefore, elevations are not warranted.

Vehicle sight lines were provided on the previously submitted drawing 19.0123 C010 Rev 1 with further commentary on this in Milan Prodanovic's Traffic Impact Assessment (TIA), dated October 2019.

The acceptable solution has been demonstrated.

PA5.1 *Scaled and dimensioned plan(s) showing the layout of car parking spaces, turning areas, driveway and access designed to comply with AS/NZS 2890.1:2004 or a design which ensures that parking areas enable safe, easy and efficient use.*
To satisfy Hobart Interim Planning Scheme 2015 clauses E6.7.5 Acceptable Solution A1 the scaled and dimensioned design drawings must include:

- *A 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.*
- *Where the design drawing(s) do not comply with the above clauses, provide a certification by a suitably qualified engineer that the design is safe and ensures ease of access, egress and manoeuvring on site. This will then be assessed under performance criteria of the Hobart Interim Planning Scheme 2015.*

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;*
- *Fully dimensioned plan view and long section along the proposed driveway, showing the gradient*

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and elevation of the full driveway's finished surface level; including transitions at change of grades, where required to comply with AS/NZS 2890.1:2004 Section 2.5.3(d);

- *Elevation or section view showing sufficient headroom to satisfy Section 5.3 of AS/NZS 2890.1:2004.*

Where the design drawing(s) do not comply with the above clause and/or AS/NZS 2890.1:2004 provide a certification by a suitably qualified engineer that the design provides for a safe and efficient access, this will then be assessed under Performance Criteria of the Hobart Interim Planning Scheme 2015.

Response:

- Dimensions are provided on the architectural drawings.
- Driveway dimensions on the driveway from Macquarie Street to Basement Level 1 are shown on drawing 19.0123 C011 Rev 2.
- A long section on the driveway from Macquarie Street to Basement Level 1 is shown on drawing 19.0123 C010 Rev 2. Grades and transitions comply with AS/NZS 2890.1:2004 Section 2.5.3.
- The vertical clearance has been indicated on the long section on drawing 19.0123 C010 Rev 2. The clearance complies with AS/NZS 2890.1:2004 Section 5.3.1.

The TIA by Milan Prodanovic, dated October 2019, indicates that the internal traffic access, circulation and car parking has been reviewed as part of the TIA thereby addressing the performance requirement.

***PA 5.2** Scaled and dimension drawing(s) showing vehicular swept paths (turning paths) into and out of all of the proposed car parking space(s) for a B85 vehicle in accordance with AS/NZS 2890.1:2004, or a design that ensures safe and efficient vehicular manoeuvring.*
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 B85 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.*
- *Standard single turn B85 swept paths (including 300mm manoeuvring clearance) on all proposed curved ramps which have radii which do not comply with AS2890.1 Section 2.5.2 (b) and associated Figure 2.9 / Table 2.2.*
- *If proposing waste removal (commercial and residential waste) via service vehicles parked within the Macquarie Street Highway Reservation, demonstrate how the waste bins will be transported to the kerb side. If this utilises the circulation roadways and ramps as a pedestrian path, demonstrate how conflicts will be minimised and what the proposed grade for the pedestrian path will be (with reference to the NCC pedestrian ramp gradients). If vehicular access to the onsite waste storage area is required, please provide documentation for assessment against E6.7.13.*

Where the design drawing(s) do not comply with the above clauses, provide a certification by a suitably qualified engineer that the design is safe and ensures ease of access, egress and manoeuvring on site. This will then be assessed under performance criteria of the Hobart Interim Planning Scheme 2015.

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Response:

- Typical parking swept paths have been provided on drawings 19.0123 C013 Rev 1 & C014 Rev 1. These swept paths are indicative of access to all parking bays.
- The traffic impact assessment by Milan Prodanovic, dated October 2019, indicates that the internal traffic access, circulation and car parking has been reviewed as part of the TIA thereby addressing the performance requirement.
- Waste removal from Macquarie Street has been confirmed in a separate response by Milan Prodanovic, dated 10 June 2020. Waste bins will be transported along the access ramp which rises from the waste bin enclosure to Macquarie Street at a grade of 2%. This is well within the maximum grades defined by the NCC for pedestrian paths. A kerb ramp will be provided to facilitate waste bins to access the access ramp surface. There is 17 m sight distance available to view exiting vehicles from this ramp. This is more than adequate for safe use of the access ramp for waste bin transportation given the 10 km/h shared zone speed limit. A waste bin movement path has been provided on drawing 19.0123 C011 Rev 2.

Stormwater Code

To enable the Council to assess the application against the relevant provisions of the Stormwater Management Code of Hobart Interim Planning Scheme 2015, please provide:
Applicable to Acceptable solution 3 of the stormwater code
***Sw 6** A stormwater drainage design prepared by a suitable qualified person which demonstrates compliance with the following:*

a) accommodate a storm with an ARI of 20 years when the land serviced by the system is fully developed.
b) Stormwater runoff will be no greater than pre-existing runoff or any increase can be accommodated within existing or upgraded public stormwater infrastructure.

Response:

a) Stormwater drainage will be designed to AS/NZS 3500.3:2018 and will accommodate a storm with an ARI of 20 years. Drawing 19.0123 H011 Rev 2 indicates a total design flow rate of 46 L/s with a DN225 connection to the public stormwater system. The connection at 0.5% grade has a capacity of 49 L/s.
b) A stormwater detention tank has been added to drawing 19.0123 H010 Rev 3 to restrict stormwater runoff to pre-development levels. Two linked 3500 L rainwater tanks will be provided to detain a minimum of 6420 L of stormwater detention; a 25 mm orifice will be used to restrict discharge to 1.8 L/s. A minimum of 50% of the impervious surface will be directed to the detention tank. The remaining impervious surfaces will be undetained. The undetained area will generate 22.8 L/s providing an overall discharge total of 24.6 L/s which equates to the pre-development discharge rate.

Engineering Road - Infrastructure in a Road Reservation

***ENGrFi2** To ensure that the Council's road infrastructure is protected please provide:*

1. State on plan that the works within Macquarie Street highway reservation will require separate Council (footpath, stormwater and kerb) and State Growth (road pavement) approval. Permits such as a road opening permit and permit to construct public infrastructure for the works. Approval from City's Parking division required for removal of parking metered spaces.

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2. *Show and label the height of awning and clearance from the light pole and vehicle crossover within the highway reservation.*
3. *State on plan if the awning forms part of the building or is attached to the building. State on plan that the existing northern crossover will be removed - there is a discrepancy in the plans submitted.*
4. *State on the plan that any modifications to footpath will be in accordance with TSD-R11-v1 within and/or adjacent to the highway reservation.*
5. *Provide indicative plan of how the highway will be retained for the underground parking and state on plan that the responsibility of maintenance of retaining structure to be private responsibility.*

Response:

1. Note added to drawing 19.0123 C010 Rev 2.
2. Clearances noted drawing 19.0123 C010 Rev 2. Refer architect's drawings for canopy height.
3. Refer architect's drawings for awning information. Removal of northern driveway noted on previously submitted drawing 19.0123 C010 Rev 1.
4. Note added to drawing 19.0123 C010 Rev 2.
5. Detail added to drawing 19.0123 C014 Rev 1.

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Statement of Historical Archaeological Potential

202-206 Macquarie Street

HOBART TASMANIA

For Mew Pleasant Investments Pty. Ltd.

October 2019

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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. ACN 63 700 818.

Unless otherwise stated, all photographs were taken by Brad Williams, October 2019

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 Mew Pleasant Investments Pty. Ltd. in order to provide a sound understanding of any archaeological potential 202-206 Macquarie Street, Hobart (the *subject site*), in order to meet statutory requirements in any future redevelopment of the site.

The subject site is on the southern side of Macquarie Street Hobart near the intersection of Barrack Street and comprises of C/T's 54396/1 (PID 5660956) and was until recently the site of a service station which had occupied that site for over 50 years.

The site is not listed on the Tasmanian Heritage Register, nor is it a Heritage Place as defined by 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 scheme, therefore the provisions of Part E.13.10 of the 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.

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 boundaries of the subject site and surrounds – the subject site depicted in red. 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 was outside the scope.
- Particularly given the nature and extent of past decontamination works on the site (see Section 5), the assumption has been made that these were implemented as per the various cited plans.

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.

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.

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

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 # 18459466) did not identify any registered Aboriginal relics or apparent risk of impacting Aboriginal relics (search valid until 27/4/20). The Tasmanian Government's Unanticipated Discovery Plan – Procedure for the management of unanticipated discoveries of Aboriginal relics in Tasmania must be adhered to in the event that any Aboriginal heritage items are discovered during the course of any works.

[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

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.

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.

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.

Secondary sources

No secondary source documents are known to exist which are of particular relevance to the history or archaeology of the subject site.

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.

4.2. Historical overview

The land was the home of the Mouheneener people for tens of thousands of years, prior to displacement by European settlers in 1804.

The subject site comprises of portions of two pre-c1830 land grants, one to James Roberts and one to Hames Grant. The c1832 survey of Hobart shows that by that time Roberts had built a timber building on his property, and that Grant had built a stone building on his (see Figure 4.1). Both of these buildings were within the subject site. A similar arrangement is seen on the 1839 Frankland map of Hobart (Figure 4.2). Only Grant's building is depicted on Sprent's c1845 survey of Hobart, which suggests that the Roberts building had been demolished by that time (Figure 4.3).

Figure 4.1 – Excerpt from a c1832 map of Hobart and surrounds. DPIPWE Map Hobart 6.

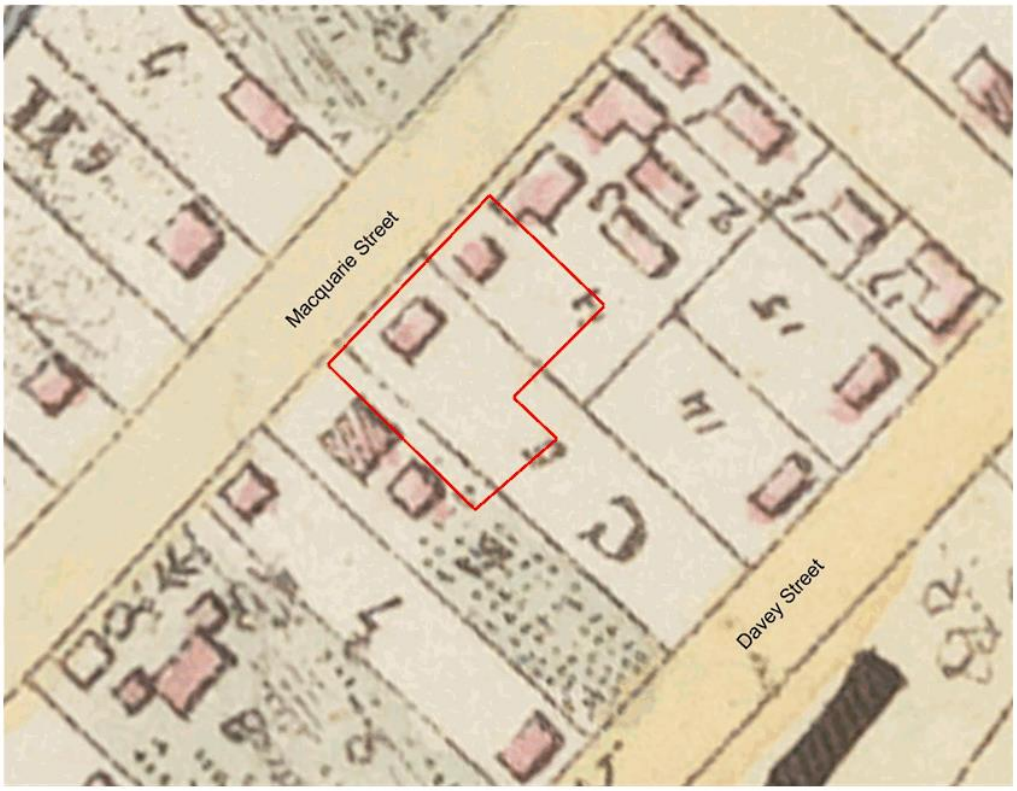

Figure 4.2 – Excerpt from Frankland's 1839 map of Hobart and surrounds. State Library of Tasmania, Allport Stack 912.94661MAP.

Figure 4.3 - Excerpt from Sprent's c1845 map of Hobart and surrounds (www.thelist.tas.gov.au).

It is likely that the omission of the Roberts building on the Sprent survey indicates that the earlier building had been demolished at that time to make way for the second phase of development that can be seen as a row of three substantial two-storey sandstone terrace houses on that site (probably plus basement given their elevated position above the street). Figure 4.4 depicts these buildings, which are not unlike the style of other such buildings in Macquarie Street (e.g. the pair of houses at 258-260 Macquarie Street) which date from the late 1840s – which would be consistent with the Sprent survey. The Grant building can be seen in that image as a single storey masonry dwelling as per the earlier surveys.

Figure 4.4 - Excerpt from a c1890 panorama of Hobart, showing the buildings on the subject site comprising of a row of three substantial terrace houses and a smaller single storey house. Tasmanian Archive and Heritage Office.

That arrangement continued into the 1940s, with the 1907 Metropolitan Drainage Board survey (Figure 4.5), a 1920s photograph (Figure 4.6) and the 1946 aerial photograph (Figure 4.7) all depicting the three terrace houses and the earlier Grant house (known as 120-126 Macquarie Street in 1907). Figure 4.4 depicts that this building was set above street level with what is likely to be a semi-basement. Figure 4.4 depicts 8 steps to the front door and each terrace house having lightwells, which suggests that the ground floor of the building as at least 1.5-metres above street level and that the basal lave of the basement was probably only a metre below street level (assuming a 2.5-metre ceiling height in the basement).

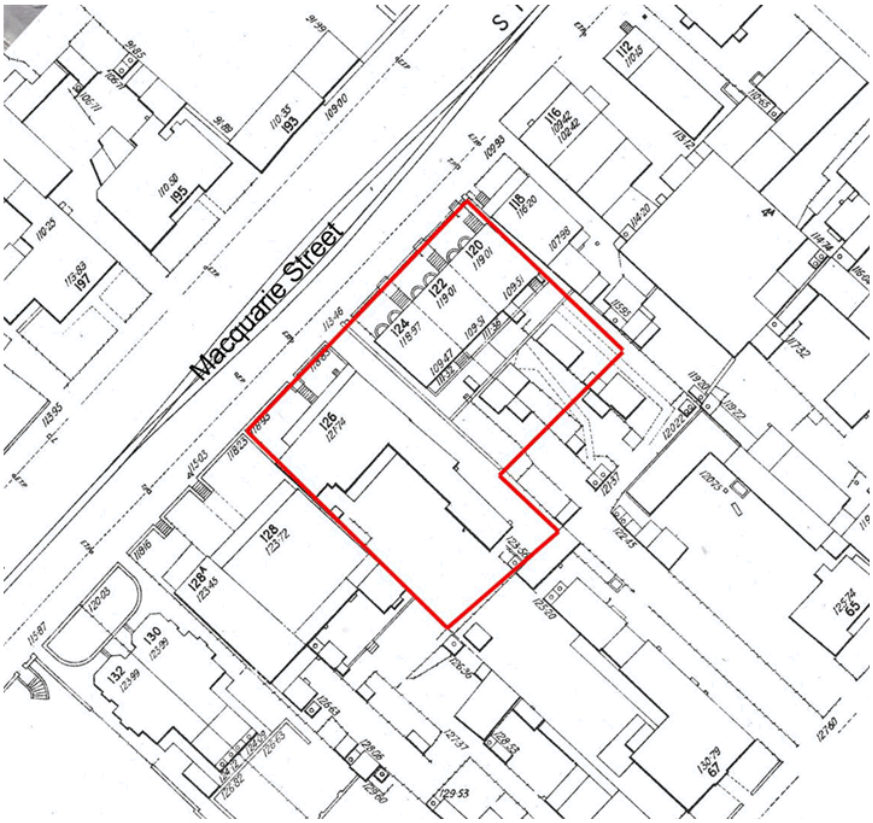

Figure 4.5 – 1907 Metropolitan Drainage Board survey showing the subject site and surrounds (Hobart Sheet 9).

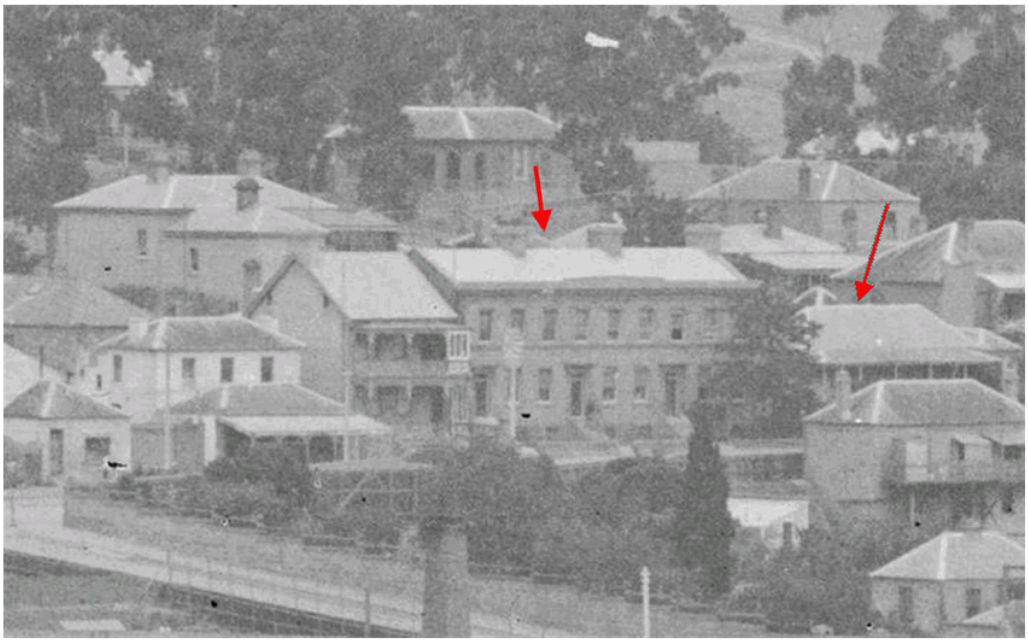

Figure 4.6 - Excerpt from a c1920 panorama of Hobart, showing the buildings on the subject site comprising of a row of three substantial terrace houses and a smaller single storey house. Tasmanian Archive and Heritage Office NS392-1-736.

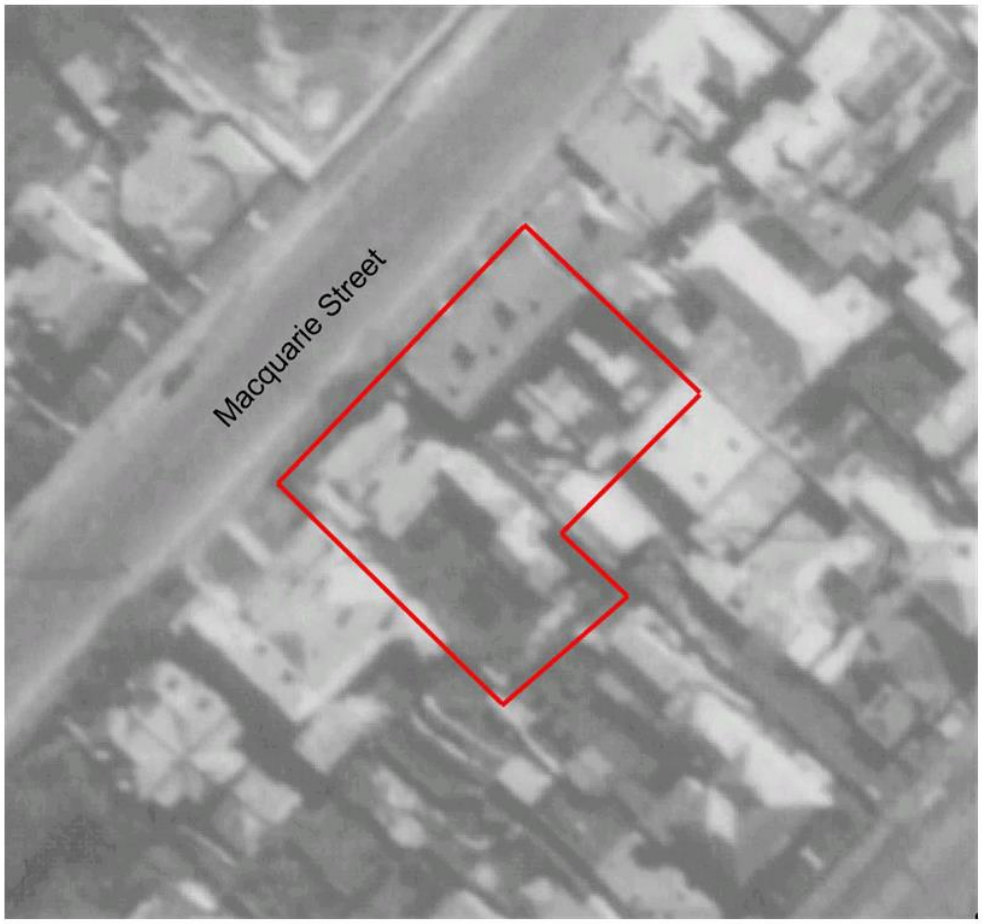

Figure 4.7 - The subject site taken from the 1946 aerial run of Hobart (Run 1, 10894).

In 1956 the Vacuum Oil Company acquired the site which was cleared of earlier buildings and the first phase of what was to be an evolving service station complex had been built (Figure 4.8). The site was used as a service station until closure and demolition in 2002.

Figure 4.8 - The subject site taken from the 1958 aerial run of Hobart (Hobart Run 5 T332-12 March 1958).

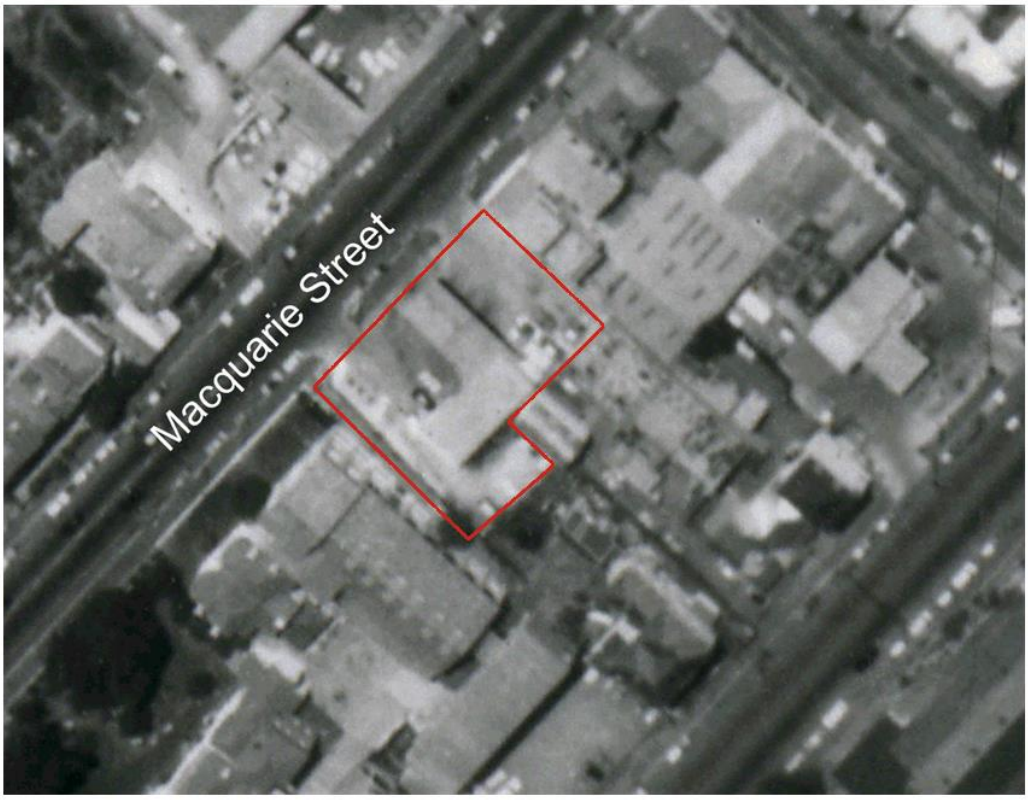

Figure 4.9 - The subject site taken from the 1968 aerial run of Hobart (Hobart Run 6-153 February 1968).

Summary of development of the subject site

The above historical summary shows that:

- The site was initially developed as two sites prior to 1832, with a masonry building and a timber building – both probably residential.
- The timber building was demolished pre-mid-1840s and redevelopment soonafter into three substantial sandstone terrace houses.
- These buildings survived until the mid-19f50s when all were demolished and the site levelled for a service station.
- The service station was in-use until c2002 until it was demolished soonafter and the site has been vacant since.

The following figures show overlay plans of known historic development on the subject site, drawn from the survey plans depicted above which are considered to have the greatest accuracy:

Figure 4.10 – Overlay of the of the c1832 depiction of the buildings on/near the subject site (blue). Note that the accuracy of this survey is known to be low – merely depicting the *presence* of buildings, rather than necessarily an accurate location.

Figure 4.11 – Overlay of the of the c1850-c1950 depictions of the buildings on the subject site (green) in relation to the subject site (red). This is based on the 1907 Metropolitan Drainage Board survey and 1946 aerial photograph, both of which are known to have a very high accuracy.

Figure 4.12 – Composite overlay of the footprint of all known pre-c1950 buildings and site features (colours as per coding above) in relation to the subject site (red).

5. Current site observations and assessment of prior disturbance

As per the methodology outlined in Section 2.1, Section 3.3 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 detail on any possible archaeological potential can be gained through site inspection. Currently, the site is largely level (with the exception of the south-eastern corner) with a graveled surface resulting from backfill of the various decontamination areas as per below. There are a series of groundwater monitoring wells across the site. Towards the rear of the site there is a retaining wall running across the eastern boundary and dividing the rear (narrower) section of the subject site. This wall is 1.0-1.5 metres in height and retains a slightly higher area which is expected to be similar to historic ground level. This means that the entire front portion of the site has been excavated to approximately footpath level i.e. from approximately 1.5-metres at the rear to 0 at the front to gain the current ground level (likely to be consistent with service station forecourt use and the footprint of the service station building. As discussed below, this is likely to have impacted or wholly removed any archaeological remains in the central portion of the site, of diminishing impact further forward to the footpath where the current ground level is likely to be closer to historic ground level.

Figure 5.1 – View across the site to the rear corner (facing south-east). Note the retaining wall and distinct terracing of the site c1950s for construction of the service station and flattening of driveway area.

Figure 5.2 – View across the site to the rear corner (facing east).

5.2. Natural/geological conditions

The various environmental reports cited below include bore-logs from site testing (e.g. from groundwater monitoring well drilling and geotechnical investigations). These have been examined here in order to gain an understanding of the strata of the site which may contain (or preclude) archaeological remains.

Bore-logs from 31/5/2005 from 20 locations across the site indicate that natural bedrock (dolerite) was in all cases found at a depth of 700-1300mm below the current ground surface across the flat area of the site. The upper fill level is described in the logs as 'fill, cobbles, clay matrix, minor gravel'. Brick rubble is not mentioned in any log. On the higher rear portion of the site two bore-logs indicate bedrock at 600-800mm below a sterile sand upper strata and no mention of cultural material.

Geological cross sections are included in environmental reports from February 2005 which also indicate that this 'fill' layer is limited to the top (approx..) 1 metre of the site.

5.3. Specific known disturbance events

Demolition of the earlier buildings and construction of the service station buildings

No information has been found in the historical research undertaken for the current document which gives any clue as to the extent or method of demolition of the earliest buildings on the site – however it appears that the front and central portion of the site was extensively excavated to form a flat/terraced area for the service station. The rear portion of the site appears to be consistent with what is expected to be historic ground level, with a retaining wall on what was formerly the rear line of the service station building and the ground level in the area in front of that wall having been cut by a minimum of 1.5 metres. This would have severely impacted, if not totally removed all archaeological remains in the central portion of the site and is also likely to have impacted any remains to the front of the site (i.e. the slope of the land is downwards to the street from the rear of the site, therefore less grading would have been required at the front of the site).

Subsequent service trenches etc.[5]

A search of underground asset registers (via *Dial Before You Dig*) revealed that the only underground service on the site appears to be a TasWater sewer gravity main running through the central portion of the site (in-line with the north-eastern edge of the rear section, to the street. Information from the decontamination reports (see Figure 5.3) indicates a depth of 5-0 metres for this line which would have involved widespread disturbance to gain such excavation depth.

It is unknown if there are any redundant minor service assets in the subject site (i.e. services to the former building) or lines of disused/redundant services however it is likely that these have been removed with the extensive decontamination works detailed below.

TABLE 3
SUMMARY OF UNDERGROUND UTILITIES
FORMER MOBIL SERVICE STATION HOBART (TO2603)
POST PHASE 2 ENVIRONMENTAL SITE ASSESSMENT (OCTOBER - NOVEMBER 2005)

Service	Owner	Type	Approximate Depth	Manholes within 20m	Known Preferred Pathways
Sewer	Hobart City Council	Concrete	5 to 6m bgs	4	NA
Water	Hobart City Council	Mains	<1.0m bgs	1	Via on site water
Electricity	Aurora Energy	Conduit	<1m bgs	1	None known
Phone	Telstra Corporation Ltd	Conduit	<1.2m bgs	1	None known

Notes:
m bgs = metres below ground surface

Figure 5.3 – Table derived from environmental reports listing services on the site just post-demolition of the service station.

[5] Note that the comments here are indicative only and based on information available from Dial Before You Dig and the various environmental reports. These comments must not be relied upon for accurate service location during physical works and it is recommended that a professional service locator be engaged to verify ahead of any works program.

Installation and removal of fuel tanks and other site remediation works

From the Phase 2 Environmental Site Assessment[6] (pp16-17) the following tanks had been installed on the site:

1956 2x 3000 Gal. 1x 2000 Gal.

1957 2x 3000 Gal. 1x 2000 Gal. (duplicate of above?) 1x 1250 Gal.

1957 1x 1250 Gal.

1957 2x 3000 Gal. 1x 2000 Gal. (duplicate of above?) 1x 250 Gal.

1988 1x 11.9KL. 1x 2.25KL.

The Phase 2 ESA reported that in 2002 there were the following tanks present:

- 1x 15KL
- 1x 13.6KL
- 1x 10KL
- 1x 11.9KL
- 1x 1.1KL
- 1x 2.0KL

Several environmental reports have been relied upon here to determine the extent of excavation on the site for remedial works, as per the following table:

Previous Environmental Site Investigation(s):	Two existing groundwater monitoring wells and five existing soil bores were observed in the field on the first inspection of the site by *IT* staff on the 2 December 2002, however, *IT* were unable to obtain a report from Mobil of any previous investigation to which these wells related. • *IT* (2003) *Phase 1 Environmental Site Assessment*, Former Mobil Hobart Service Station (TO2603), IT Environmental, October 2003. • *IT* (2003) *Phase 2 Environmental Site Assessment*, Former Mobil Hobart Service Station (TO2603), IT Environmental, October 2003. • *IT* (2004) *Water Sampling and Vapour Monitoring Works undertaken at 198 Macquarie St, Hobart*, (Letter Report). IT Environmental, October 2004 • *IT* (2005) *Water Sampling and Vapour Monitoring Works undertaken at 198 Macquarie St, Hobart*, (Letter Report). IT Environmental, March 2005 • *IT* (2005) *Post Phase 2 Environmental Site Assessment*, Former Mobil Hobart Service Station (TO2603), IT Environmental, April 2005.

Figure 5.4 – Citation of environmental assessments on the site utilised in the current disturbance assessment.

[6] *Phase 2 Environmental Site Assessment, Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania.* IT Environmental (Australia) Pty., Ltd. 22/10/2003.

The various environmental reports (and associated historical documentation from the initial 1950s tanks to new tanks installed in the 1980s) indicate that tanks were located in the following areas (the footprint of the service station building is also depicted):

Figure 5.4 – Tank and fuel line locations (yellow) derived from the various environmental reports and historical data (the service station building footprint depicted in blue. Adapted from www.thelist.tas.gov.au

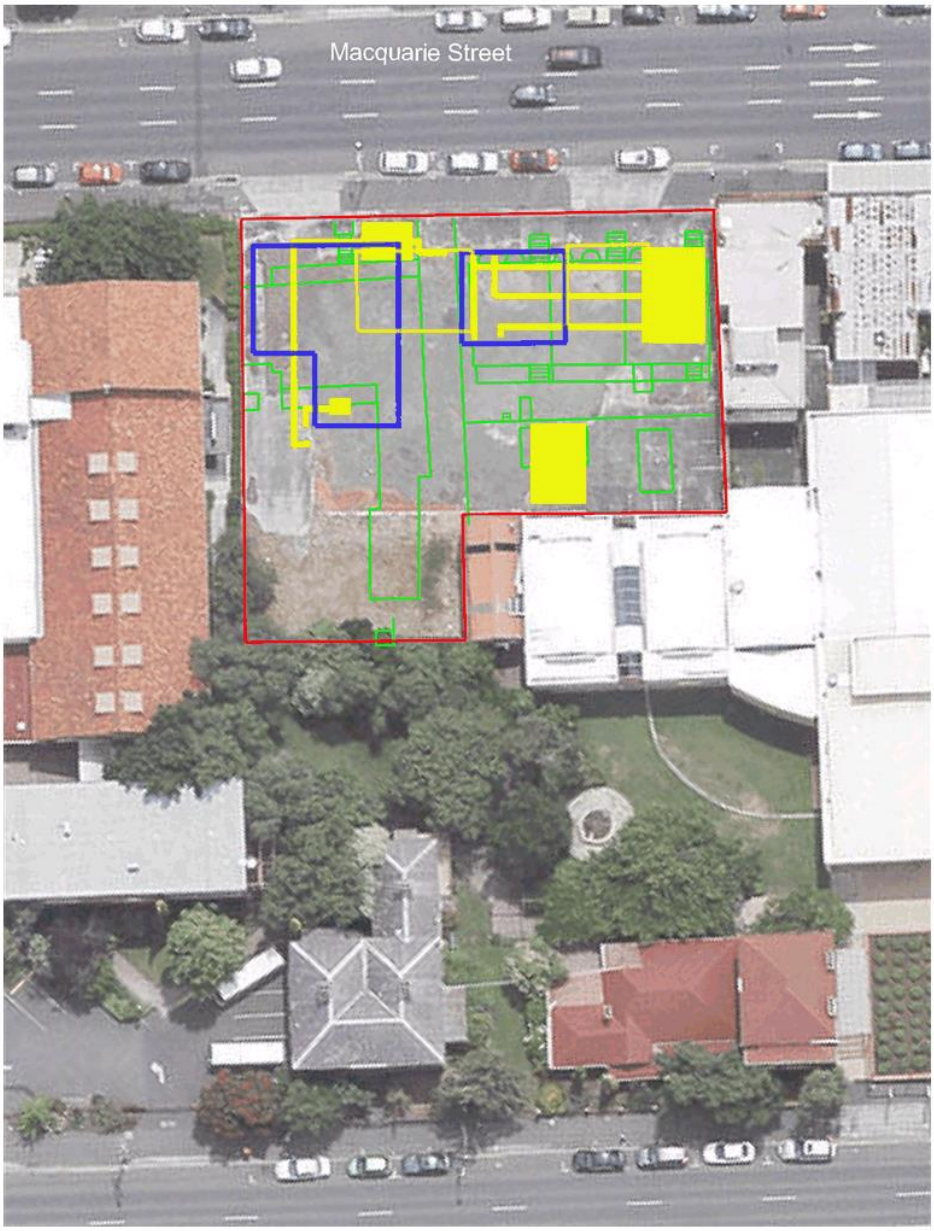

Figure 5.5 – Tank and fuel line locations (yellow) overlaid on historic building footprints (blue = c1832, green = c1850+). Adapted from www.thelist.tas.gov.au

These tanks were all removed in May 2005.[7] At that time, the 6 tanks, surrounding soil and all associated service lines (i.e. to bowsers) were excavated. Overall, 1031.5m^3 of soil was excavated (plus the volume of the tanks themselves – which would result on over 1200m^3 of volume being removed). Overall, 992m^2 of the 1300m^2 site was excavated to a depth of at least 1 metre and up to 3.5 metres in the immediate vicinity of the tanks (i.e. the entire front portion of the site has been excavated to at least 1-metre – with only the rear portion remaining unexcavated).

Approximately 1500 tonnes of imported fill was brought to the site after remediation between June and September 2005. Note also that some areas were again re-excavated in 2007 and re-filled with imported material.

5.4. Summary and consequences of site conditions and disturbance

From the above overview of the various environmental reports and known site conditions it is known that:

- Natural bedrock is generally 800-1300mm below current ground level, which is likely to limit any archaeological remains to that higher strata. This is supported by the historical images which indicate a semi-basement in the terrace house buildings with a depth likely to not exceed that bedrock level.
- Terracing of the site for the 1950s service station construction would almost certainly have removed any archaeological remains in the central portion of the site (i.e. all outbuildings and backyard deposits associated with the earlier development) and also likely to have impacted any remains on the front of the site (albeit probably to a lesser degree).
- The installation and removal of fuel tanks would have had major impact upon various parts of the site, in particular the northern corner of the site which was the site of the terrace houses and earlier building on that part of the site.
- Decontamination works c2005 have removed extensive amounts of material which would most likely have contained any surviving archaeological material across the site.

[7] *Post Phase 2 Environmental Site Assessment. Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart Tasmania 7000.* IT Environmental. Report date 22/2/2006. Page 55.

6. The likely significance and research potential of the site

As concluded in Section 5.4, it is almost certain that any significant archaeological remains deriving from the pre-1832 development of the site and subsequent c1850 redevelopment of the site would have been largely impacted by the construction of the service station in the 1950s and subsequent service station infrastructure upgrades.

Any surviving archaeological material would have been further impact, if not completely obliterated by the site remediation works post-service station closure.

Accordingly, is it considered that the site has little or no archaeological potential. No further archaeological input into any development process is considered necessary.

GOLDER

6 November 2019 Project No. 1418584-345-L-Rev0

Mac Hull
Contract Project Manager
Mobil Oil Australia Pty Ltd
Level 9, 664 Collins Street
Docklands, Vic 3008

MOBIL HOBART (TO2603)
NO FURTHER ACTION REPORT

Dear Mac,

1.0 INTRODUCTION

Golder Associates Pty Ltd (Golder) was commissioned by Mobil Oil Australia Pty Ltd (Mobil) to undertake environmental site assessment works at the Mobil Hobart site (Facility ID. TO2603) located at 202 Macquarie Street, Hobart, Tasmania ("the site"). A site contamination audit was conducted by Ms. Rowena Salmon of Ramboll Australia (the Auditor).

The end point goals with respect to covered[1] contamination is to:

a) make the site suitable for residential use; and

b) confirm offsite areas impacted by the site are suitable for their as of right land use.

This letter has been prepared to confirm that the final site conditions meet these end point goals and that No Further Action (NFA) is required for environmental investigations at the site.

2.0 BACKGROUND

This letter should be read in conjunction with:

- *"Site Audit Report, Former Mobil Service Station TO2603, 202 Macquarie Street, Hobart Tasmania"* ("The SAR")
  (ref: RS TAS 001), dated 30 October 2019 (Attached).
- "Site Audit Statement" (the SAS) (ref: RS TAS 001), dated 30 October 2019 (Attached).

Several phases of environmental assessment have been conducted at the site. The results of the historical assessments have been utilised to prepare the 'SAR'.

CONCLUSIONS

Based on the completion and findings of the SAR with respect to covered contamination Golder considers:

[1] Refer to *'Definitions'* at the end of this report

- The conditions on-site are considered suitable for Residential land use; and
- The conditions of off-site areas have been determined to be suitable for their 'as of right' land use.

Golder concludes that no further action is warranted in regard to assessment, monitoring or remediation of covered contamination at the site or off-site.

Golder Associates Pty Ltd

Andrew Boothe
Senior Project Manager

Ken De Greene
Principal Environmental Engineer

TAB/KDD/jd

CC: Scott Porman – Mobil Oil Australia

Attachments: 1: Site Audit Report
2: Site Audit Statement
3: Important Information Relating to this Report

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Definitions

[1] ***Covered Contamination*** **means Contamination**

a) Disclosed in the Site Summary Sheets or other accompanying Due Diligence data or that becomes known to the Contractor during the execution of Remediation necessary to achieve NFA status or during a three (3) year period after NFA status has been achieved;

b) That existed at, on, in or under a site ("on-site") or which originated from such site and has been discharged, seeped, emitted or migrated to any other land and whether are, on , in or under the surface of other land ("off-site") on or prior to the Contract Date;

c) Which if is "off-site" must have originated from Company's operations "on-site"

d) That existed at a concentration exceeding applicable standards under Environmental laws in effect at the Contract Date or the date that NFA status is achieved even if those standards have changed between those dates;

e) That would be required to be remediated by any duly authorized and competent authority or department under Environmental Laws in effect at the Contract Date and which for the avoidance of doubt extends to and includes any such Contamination arising from any presence, use, storage at, in on or under a site, or the discharge, release, seepage, emission or migration of any such Contamination to any other land whether at, in on or under that other land; and

f) That is acknowledged and agreed to extend to and include removal of all known aboveground fixtures and improvements located at or on a site and underground fixtures and improvements (such as remnant piping) whether known of unknown that are encountered during progression to NFA status. ; and

g) Any excavated areas of a (present or former) Company freehold site are required to be filled with soil or landfill which is "clean", if so provided in a relevant divestment contract or otherwise which meets Acceptance Criteria for the designated end use specified for that site. Subject to Acceptance Criteria being met any excavated soil may be re-deposited. At the completion of any excavation works so as to avoid surface water ponding, the surface of the excavated area of a site is to be graded but is not required to be compacted.

h) Any excavated areas of a (present or former) company leasehold site will require compaction of filled areas to the level of compaction consistent with the level generally prevailing across the site.

i) Sites are required upon completion of Remediation of Covered Contamination to be free from debris.

Mac Hull
Contract Project Manager

Project No. 1418584-345-L-Rev0
6 November 2019

ATTACHMENT 1

Site Audit Report

Prepared for
Mobil Oil Australia Pty Ltd
Prepared by
Ramboll Australia Pty Ltd
Date
30 October 2019
Project Number
318000205
Audit Number
RS TAS 001

SITE AUDIT REPORT
FORMER MOBIL SERVICE STATION TO2603, 202 MACQUARIE STREET, HOBART, TASMANIA

RAMBOLL

RAMBOLL

30 October 2019

Mobil Oil Australia Pty Ltd
Attn.: Mac Hull
Level 9, 664 Collins Street
Docklands, VIC 3008

By email: mac.hull@exxonmobil.com

Dear Mac

SITE AUDIT REPORT - FORMER MOBIL SERVICE STATION TO2603, 202 MACQUARIE STREET, HOBART, TASMANIA

I have pleasure in submitting the Site Audit Report for the subject site. The Site Audit Statement, produced in accordance with the NSW *Contaminated Land Management Act 1997*, is included as Appendix B. The Audit was commissioned by Mobil Oil Australia Pty Ltd to assess the suitability of the site for residential use. The audit comprises an 'environmental audit' assessment in accordance with section 5B of the Tasmania *Environmental Management and Pollution Control Act 1994* and has been undertaken by Rowena Salmon, who is a Site Auditor accredited under the NSW *Contaminated Land Management Act 1997*. The Audit has considered the guidelines and decision-making process approved under section 105 of the NSW *Contaminated Land Management Act 1997* to determine whether the site is suitable for residential land use.

Thank you for giving me the opportunity to conduct this Audit. Please call me on 02 9954 8100 if you have any questions.

Ramboll Australia
Level 3, 100 Pacific Highway
PO Box 560
North Sydney NSW 2060

T +61 2 9954 8100
www.ramboll.com

Ref 318000205

Yours faithfully,
Ramboll Australia Pty Ltd

Rowena Salmon
NSW EPA Accredited Site Auditor 1002

Cc (Site Audit Statement only):

Tasmania EPA, by email: enquiries@epa.tas.gov.au

City of Hobart Council, by email: coh@hobartcity.com.au

Ramboll Australia Pty Ltd
ACN 095 437 442
ABN 49 095 437 442

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APPENDICES

Appendix A
Attachments

Appendix B
Site Audit Statement

LIST OF ABBREVIATIONS

Measures

%	per cent
µg/L	Micrograms per Litre
µg/m³	Micrograms per Cubic Metre
ha	Hectare
km	Kilometres
L/s	Litres per second
m	Metre
mAHD	Metres Australian Height Datum
mbgl	Metres below ground level
mg/kg	Milligrams per Kilogram
mg/L	Milligrams per Litre
mg/m³	Milligrams per Cubic Metre
mm	Millimetre
ppm	Parts Per Million

General

ADWG	Australian Drinking Water Guidelines
AHD	Australian Height Datum
ALS	Australian Laboratory Services
APHA	American Public Health Association
ANZECC	Australian and New Zealand Environment and Conservation Council
BaP	Benzo(a)pyrene
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes & Naphthalene
CLM Act	NSW Contaminated Land Management Act 1997
CO_2	Carbon Dioxide
COC	Chain of Custody
Coffey	Coffey Environments Pty Ltd
COPC	Chemicals of Potential Concern
Council	City of Hobart Council
CSM	Conceptual Site Model
DPIWE	Tasmania Department of Primary Industries, Water and Environment
DQI	Data Quality Indicator
DQO	Data Quality Objective
DTAE	Department of Tourism, Arts and Environment
EIL	Ecological Investigation Level
EMP	Environmental Management Plan
EMPC Act	Tasmania Environmental Management and Pollution Control Act 1994
ENSR	ENSR Australia Pty Ltd
Envirolab	Envirolab Services Pty Ltd
EPA	Environment Protection Authority (Tasmanian)
EPN	Environment Protection Notice
ERM	Environmental Resources Management Australia Pty Ltd
ESA	Environmental Site Assessment
ESL	Ecological Screening Level
Golder	Golder Associates Pty Ltd
GME	Groundwater Monitoring Event
GMP	Groundwater Monitoring Plan
He	Helium
HIL	Health Investigation Level
HRA	Health risk Assessment
HSL	Health Screening Level
IRIS	Integrated Risk Information System
IT Environmental	IT Environmental (Australia) Pty Ltd
JFTA	JFTA Pty Ltd
LCS	Laboratory Control Sample
LEL	Lower Explosive Limit
LOR	Limit of Reporting
LNAPL	Light Non-Aqueous Phase Liquid
Mercury	Inorganic mercury unless noted otherwise

Metals	As: Arsenic, Cd: Cadmium, Cr: Chromium, Cu: Copper, Ni: Nickel, Pb: Lead, Zn: Zinc, Hg: Mercury
MNA	Monitored natural attenuation
MS	Matrix Spike
MOECC	Ministry of the Environment and Climate Change
MPEAT	Multiphase Extraction and Air Treatment Event
NATA	National Association of Testing Authorities
NC	Not Calculated
ND	Not Detected
NEHF	National Environmental Health Forum
NEPM	National Environment Protection Measure
NHMRC	National Health and Medical Research Council
NRMMC	Natural Resource Management Ministerial Council
NL	Non-Limiting
NSW EPA	Environment Protection Authority (NSW)
n	Number of Samples
O_2	Oxygen
OCPs	Organochlorine Pesticides
OEH	Office of Environment and Heritage
OEHHA	Office of Environmental Health Hazard Assessment
OH&S	Occupational Health & Safety
OPPs	Organophosphorus Pesticides
ORC	Oxygen Release Compound
PAHs	Polycyclic Aromatic Hydrocarbons
PCBs	Polychlorinated Biphenyls
PCE	Tetrachloroethene
PEVs	Protected Environmental Values
pH	A measure of acidity, hydrogen ion activity
PID	Photoionisation Detector
PP2	Post Phase 2
PSH	Phase Separated Hydrocarbon
QA/QC	Quality Assurance/Quality Control
RAP	Remediation Action Plan
RBSLs	Risk Based Site Specific Screening Levels
RPD	Relative Percent Difference
RSL	Regional Screening Level
SAQP	Sampling Analysis and Quality Plan
SAR	Site Audit Report
SAS	Site Audit Statement
SCR	Site Closure Report
SILs	Soil Investigation Levels
SMN	Site Management Notice
SPR	Source-Pathway-Receptor
SVME	Soil Vapour Monitoring Event
SVOCs	Semi Volatile Organic Compounds
SWL	Standing Water Level
TEA	Tank Excavation Assessment
TCE	Trichloroethene
TCEQ	Texas Commission on Environmental Quality
TDS	Total Dissolved Solids
TIT	Triple Interceptor Trap
TMBs	Trimethylbenzenes
TPHs	Total Petroleum Hydrocarbons
TRHs	Total Recoverable Hydrocarbons
TV	Trigger Value
UCL	Upper Confidence Limit
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VCH	Volatile Chlorinated Hydrocarbons
VOCs	Volatile Organic Compounds
-	On tables is "not calculated", "no criteria" or "not applicable"

1. INTRODUCTION

1.1 Audit Details

A site contamination audit has been conducted in relation to the former Mobil service station site (TO2603) located at 202 Macquarie Street, Hobart, Tasmania.

An 'environmental audit' assessment in accordance with section 5B of the Tasmania *Environmental Management and Pollution Control Act 1994 (the EMPC Act)* has been undertaken by Rowena Salmon, who is a Site Auditor accredited under the NSW *Contaminated Land Management Act 1997.* The Audit has considered the guidelines and decision-making process approved under section 105 of the NSW *Contaminated Land Management Act 1997* to determine whether the site is suitable for residential land use.

Details of the Audit are:

Requested by:	Mac Hull on behalf of Mobil Oil Australia Pty Ltd
Request/Commencement Date:	10 April 2017 by Graeme Nyland (previous Auditor) (GN TAS 001), transferred to Rowena Salmon 29 June 2018 (RS TAS 001)
Auditor:	Rowena Salmon
Accreditation No.:	NSW 1002
Auditor's Assistant	Xanthe Holford
Expert Support Team (risk)	Dr Anand Chandra

There is currently no active regulation of the site. Environment Protection Notice (EPN) 7222/1 was issued to Mobil by the Tasmania Environmental Protection Authority (EPA) on 31 October 2005. The EPN was completed and removed on 29 September 2011. Statutory regulation was then conducted for the site through Site Management Notices (SMN) 8625/1 and 8626/1 issued on 3 October 2011.

SMN 8625/1 and SMN 8626/1 applied to the site (referred to as 202 to 206 Macquarie Street comprised in Certificates of Title 145283/1&2) and related to hydrocarbon contamination in groundwater. SMN 8625/1 was for the purpose of monitoring in accordance with the Groundwater Management Plan (GMP). SMN 8626/1 was for the purpose of prohibiting groundwater extraction and managing excavation works. The SMNs were revoked on 21 March 2014.

In the revocation letter, EPA noted that the information provided demonstrated the site was no longer a contaminated site as defined under section 74A of the EMPC Act, as the levels of contamination did not pose an unacceptable risk to the environment or human health for ongoing commercial/industrial purposes. The EPA made reference within the revocation letter to the potential that additional remediation and/or management may be required to demonstrate to the Planning Authority that no unacceptable risk to the environment or human health will arise from the intended use should the site be redeveloped or use of the site change.

In Tasmania, the contaminated site sign-off process is tendered by the proponent wishing to redevelop or rezone a site and the Third Party review process is completed by the EPA rather than an appointed Site Auditor. Currently, Mobil are not intending to redevelop the site, hence are not in a position where they can make application to the Director of EPA. Subsequently, Mobil have engaged the Auditor to undertake a non-statutory audit. The intention is that the Site Audit report will provide additional surety to prospective purchasers of the site, that the site is suitable for the intended residential land use and offsite areas are suitable for their 'as of right' uses.

1.2 Scope of the Audit

The scope of the Audit included:

- Review of the following reports:

- 'Phase 1 Environmental Site Assessment – Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart Tasmania', 14 October 2003, IT Environmental (Australia) Pty Ltd (IT Environmental) ('**the Phase 1 ESA'**)
- 'Phase 2 Environmental Site Assessment – Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart Tasmania', 22 October 2003, IT Environmental ('**the Phase 2 ESA'**)
- Letter 'Re Water sampling and vapour monitoring works undertaken at 198 Macquarie Street, Hobart, TAS, 7000', 5 October 2004, IT Environmental
- Letter 'Re Temporary risk control measures undertaken at the property located at 198 Macquarie Street, Hobart, TAS, 7000', 22 December 2004, IT Environmental
- Letter 'Re Water sampling and ongoing vapour monitoring works undertaken at 198 Macquarie Street, Hobart, Tasmania, 7000', 30 March 2005, IT Environmental
- 'Post Phase 2 Environmental Site Assessment (February 2005) – Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 1 April 2005, IT Environmental ('**the PP2 ESA 2005**')
- 'Remediation Action Plan - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 22 November 2005, IT Environmental ('**the RAP**')
- 'Post Phase 2 Environmental Site Assessment - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 22 February 2006, IT Environmental ('**the PP2 ESA 2006**')
- 'Air Sampling and Groundwater Monitoring Event, Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 1 March 2006, IT Environmental
- 'Tank Excavation Assessment Report - Former Mobil Hobart Service Station (TO2603) 202 Macquarie Street, Hobart, Tasmania', 4 April 2006, IT Environmental ('**the TEA**')
- 'Interim Air Sampling and Groundwater Monitoring Event - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 3 August 2006, Coffey Environments Pty Ltd (Coffey)
- 'Off-site Health Risk Assessment - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 27 July 2006, Coffey
- 'Site Summary Environmental Report - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 10 November 2006, Coffey
- 'On-site Health Risk Assessment - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 10 November 2006, Coffey
- 'Annual Groundwater Monitoring Event and Air Sampling, Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 18 January 2007, Coffey
- Letter 'Former Mobil Hobart Service Station (T02603) - Well Decommissioning and Excavation and Backfilling of the Former Tank Pit', 2 May 2007, Coffey ('**Letter dated 2 May 2007**')
- 'Post Phase 2 Environmental Site Assessment – Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 23 May 2007, Coffey ('**the PP2 ESA 2007**')
- 'Updated On-site Health Risk Assessment- Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania' 19 June 2007, Coffey
- 'Interim Groundwater Monitoring Event and Air Sampling, Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 30 July 2007, Coffey

- 'On-site Health Risk Assessment, Basement Structures - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 16 August 2007, Coffey
- 'Post Phase 2 Environmental Site Assessment – Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 24 January 2008, Coffey ('**the PP2 ESA 2008**')
- Letter 'Re: Groundwater Multiphase Extraction and Air Treatment Event (23rd – 27th January 2008), Former Mobil Service Station, 202 Macquarie Street, Hobart, Tasmania 7000', 13 February 2008, JFTA Pty Ltd (JFTA)
- 'Mobil Groundwater Attenuation Assessments - Former Hobart Service Station Site, Hobart, Tasmania (TO2603)', 26 March 2008, ENSR Australia Pty Ltd (ENSR)
- 'Recommendation Letter, Mobil Hobart TO2603', 31 March 2008, ENSR
- Letter 'Groundwater Gauging Results (28 March 2008) for the Former Mobil Hobart Service Station (TO2603)', 21 April 2008, Coffey
- Letter 'Re: Groundwater Multiphase Extraction and Air Treatment Event (21st – 25th May, 2008), Former Mobil Service Station, 202 Macquarie Street, Hobart, Tasmania 7000', 25 July 2008, JFTA
- 'Remediation Technology Screening Review for Former Mobil Hobart Service Station (TO2603)', 4 August 2008, Coffey
- 'Interim Groundwater Monitoring Event and Air Sampling - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 16 September 2008, Coffey
- 'Annual GME & Air Sampling Event, Well Installation and Injection of Wells, Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 11 February 2009, Coffey
- 'Soil Vapour Well Installation and Sampling - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 18 February 2009, Coffey ('**the Coffey 2009 Soil Vapour Report**')
- 'Updated Off-site Health Risk Assessment - Former Mobil Hobart Service Station (TO2603) 202 Macquarie Street, Hobart, Tasmania', 3 March 2009, Coffey ('**the Updated Offsite HRA**')
- 'Limited Groundwater Monitoring Event, Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania 7000', 26 May 2009, Coffey
- 'Interim Groundwater Monitoring Event and Air Sampling - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 28 July 2009, Coffey
- 'Review of Hydrogeological Data - Former Mobil Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 18 September 2009, Coffey
- 'Multiphase Extraction and Air Treatment Event (4th to 8 October 2009) - Former Mobil Service Station', 14 October 2009, JFTA
- 'Annual Groundwater Monitoring Event, Air Sampling Event and Well Injection Event - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 30 March 2010, Coffey
- 'Soil Vapour Sampling and Limited Groundwater Monitoring Event (GME) - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 2 August 2010, Coffey
- 'Combined MPEAT and Injection Event and Interim Groundwater Monitoring and Air Sampling Event, Former Mobil Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 10 September 2010, Coffey ('**the Coffey 2010 MPEAT Report**')

- 'Soil Vapour Sampling and Limited Groundwater Monitoring Event - Former Mobil Hobart Service Station (TO22603), 202 Macquarie Street, Hobart, Tasmania', 22 November 2010, Coffey
- 'Site Status Report - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 18 January 2011, Coffey
- 'Health Risk Assessment - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 28 January 2011, Coffey
- 'Annual Groundwater Monitoring and Air Sampling Event, Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania 7000', 15 February 2011, Coffey
- 'Groundwater Monitoring Plan - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 9 May 2011, Coffey ('**the GMP**')
- 'Environmental Management Plan - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 15 June 2011, Coffey
- 'Interim Groundwater Monitoring and Air Sampling Event, Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania 7000', 24 August 2011, Coffey ('**the Coffey Interim GME and Air Sampling 2011**')
- 'Annual Groundwater Monitoring Event - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 20 February 2012, Coffey
- Annual Groundwater Monitoring Event - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 13 March 2013, Coffey
- 'Groundwater Monitoring Event - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 29 January 2014, Environmental Resources Management Australia Pty Ltd (ERM)
- 'Groundwater Management Plan Progress Report - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 12 February 2014, ERM
- 'Soil Vapour Monitoring Well Installation and Soil Investigation (Post Phase II ESA) - Mobil Hobart (TO2603)', 19 November 2014, ERM ('**the ERM 2014 PP2 ESA**')
- 'Soil Vapour Monitoring Event Report (Final) - Former Mobil Depot Hobart (TO2603)', 10 November 2014, ERM ('**the ERM SVME Report 2014**')
- 'Soil Vapour Monitoring and Groundwater Monitoring Event (SVME and GME Report Final) - Mobil Hobart (TO2603)', 2 December 2014, ERM ('**the ERM 2014 SVME and GME**')
- 'Mobil Hobart Site Closure Report, Mobil Hobart T02603', 4 October 2019 and earlier drafts dated 23 August 2019, 30 July 2019 and 6 March 2019, Golder Associates Pty Ltd (Golder) ('**the SCR**').

- Review of the following EPA correspondence:
  - Environment Protection Notice 7222/1, 202 to 206 Macquarie Street, Hobart, Tasmania (Property Identification No. 5669117), issued to Mobil Oil Australia Pty Ltd by the Tasmania Department of Primary Industries, Water and Environment, 31 October 2005
  - Letter 'Former Mobil Service Station – 202 to 206 Macquarie Street, Hobart, Review of Site Status Report and EPN, issued to ExxonMobil Environmental Services by Tasmania EPA, 9 February 2011
  - Environment Protection Notice Completion Certificate, Notice 7222/1, 202 to 206 Macquarie Street, Hobart, Tasmania (Property Identification No. 5669117), issued to Mobil Oil Australia Pty Ltd by Tasmania EPA, 29 September 2011

- Site Management Notice 8625/1, 202 to 206 Macquarie Street comprised in Certificates of Title 145283/1&2), issued to Mobil Oil Australia Pty Ltd by Tasmania EPA, 3 October 2011
- Site Management Notice 8626/1, 202 to 206 Macquarie Street comprised in Certificates of Title 145283/1&2, issued to Mobil Oil Australia Pty Ltd by Tasmania EPA, 3 October 2011
- Site Management Notice Completion Certificate, Notice 8625/1, 202 to 206 Macquarie Street comprised in Certificates of Title 145283/1&2, issued to Mobil Oil Australia Pty Ltd by Tasmania EPA, 21 March 2014
- Site Management Notice Completion Certificate, Notice 8626/1, 202 to 206 Macquarie Street comprised in Certificates of Title 145283/1&2, issued to Mobil Oil Australia Pty Ltd by Tasmania EPA, 21 March 2014.

- A site visit by the previous Auditor on 3 August 2017.
- Discussions with Mobil and with Golder, who prepared the SCR.

2. SITE DETAILS

2.1 Location

The site locality is shown on Attachment 1, Appendix A.

The site details are as follows:

Street address:	202 Macquarie Street, Hobart, TAS 7000
Identifier:	Certificates of Title Volume 145283, Folio 1 and Volume 145283, Folio 2
Local Government:	City of Hobart
Owner:	Mobil Oil Australia Pty Ltd
Site Area:	Approximately 1,380 m^2

The boundaries of the site are well defined by Macquarie Street to the northwest and adjoining properties along the remaining boundaries.

2.2 Zoning

The current zoning of the site is Central Business as defined in the Hobart Interim Planning Scheme 2015. Zoning was provided by Golder in the SCR and was confirmed by the Auditor by review of Hobart City Maps.

2.3 Adjacent Uses

The site is located within an area of mixed uses as follows:

- North: 200 and 198 Macquarie Street with basement structures and commercial properties further north and northeast including a car dealership/garage across Macquarie Street to the north and northwest (Zoned Central Business). Groundwater has been known to ingress into the basement at 198 Macquarie Street which is deeper than the basement at 200 Macquarie Street.
    - The basement at 198 Macquarie Street was described in the letter by IT Environmental dated 30 March 2005 as 5.4 m by 6.9 m by 2.3 m below ground level (mbgl) with sandstone walls and a concrete floor. A sump pump collects groundwater ingress from seasonal fluctuation in the groundwater table (i.e. the basement floods after heavy rainfall). The basement was reportedly used for storage purposes.
    - The 198 site underwent renovations to convert the building from a former takeaway shop to a school uniform shop and is owned by St Michael's Collegiate School.
    - The 200 site was referred to as "St Hilda's Dormitory Residence". Recent Google street view imagery indicates residential usage of this building.
- East: Residential properties, commercial properties, St Michael's Collegiate School (Zoned Central Business (north) and Urban Mixed Use (south)).
- South: St Michael's Collegiate School (Zoned Urban Mixed Use).
- West: Macquarie Street with commercial and residential properties further west (Zoned Central Business (north) and Urban Mixed Use (south)).

With respect to site contamination, the surrounding land uses have not been identified to have the potential contaminate the site.

2.4 Site Condition

The current site condition as described in the relevant reports is summarised below.

The site is vacant and decommissioned with no sealed surfaces. It is situated at an elevation of approximately 35 m above Australian height Datum (AHD) sloping northwest towards Macquarie Street.

The surface is generally level along the Macquarie Street boundary with higher ground in the southeast supported with a low retaining wall (refer Attachment 8, Appendix A). Soil across the surface of the site consists of silty sand, silty gravel and silty clay.

The topography of the surrounding area slopes in a general westerly and north-westerly direction towards Hobart Rivulet.

The descriptions provided in the relevant reports are consistent with the observations made by the previous Auditor during the site visit on 3 August 2017 and with recent Google street view imagery.

The former site layout and the vacant/decommissioned layout before the residual concrete slabs were removed (aerial imagery) are shown on Attachments 1 and 11, Appendix A, respectively. Cross-sections through the site and surrounds showing topography and basements are shown on Attachment 16, Appendix A.

2.5 Previous Layout

Infrastructure and buildings removed from the site associated with service station usage are shown on Attachment 3, Appendix A, and consist of:

- A workshop and adjoining sales room with external wash down area in the southern portion of the site.
- A forecourt with canopy and bowsers in the central portion of the site.
- Underground storage tanks (USTs) in the north (UST numbers shown on Attachment 7, Appendix A):
  - T1 - 15,000 L, unleaded petrol
  - T2 – 13,600 L, leaded petrol
  - T3 - 10,000 L, leaded petrol.
- UST in the west (adjacent to the Macquarie Street boundary):
  - T4 - 11,900 L, diesel.
- USTs in the south (with bowser located in front of the former workshop):
  - T5 – 1,100 L, kerosene
  - T6 – 1,000 L, waste oil.
- Triple interceptor trap (TIT) in the eastern portion of the site.

2.6 Proposed Development

The site is part of a Mobil 'Cost to Closure' programme of divestment and the objectives of the SCR include to:

- *"Make the site suitable for residential land use.*
- *Confirm offsite areas impacted by the site are suitable for their 'as of right' land use".*

The future use is unknown but could include residential or commercial use and could include basements. For the purposes of this audit, the 'residential with gardens and accessible soil' land use scenario has been assumed as the most sensitive potential future use.

3. SITE HISTORY

Site history review was undertaken during the Phase 1 and Phase 2 ESAs and were based on historical land titles, Department of Primary Industries, Water and Environment (DPIWE) Contaminated Sites Register, DPIWE licencing database and historical aerial photography.

The site was first used for the distribution and storage of petroleum products in 1956 by the Vacuum Oil Company. The site continued to operate as a fuel distribution and storage facility with fuel infrastructure being installed and upgraded between 1957 and 1988. The site operated as an active service station until 2004. The site has been remained vacant since 2005.

In late 2004, temporary risk control measures were installed in the basement at 198 Macquarie Street offsite to the north of the site. Groundwater ingress had accumulated in the basement after heavy rain and odour and hydrocarbon sheen were noted. A 150 mm ventilation pipe with whirly bird was installed from the basement to the roof and the existing electrical sump pump (that pumped water from seasonal fluctuations in groundwater level) was replaced with an explosion safe pump on 26 November 2004. The new pump was diverted to sewer with permission reportedly granted by City of Hobart Council (Council).

The PP2 ESA 2005 was based on field work undertaken in January and February 2005. Based on the information reported, the EPN was issued on 31 October 2005. The grounds the EPA provided for issuing the EPN were the identification of offsite groundwater contamination that constituted environmental harm and the unacceptable risk of indoor air exposure for the adjoining residential uses at 200 Macquarie Street. Additionally, a hydrocarbon sheen that was likely associated with the site was identified in the basement sump at 198 Macquarie Street constituting an environmental nuisance and potential human health risk. The contaminants identified in the PP2 ESA 2005 were considered by the EPA to be attributed to the failure of the USTs in the northern corner of the site or soil contamination in this area.

The RAP was prepared to detail the remedial risk management works to be undertaken to address the conditions of the EPN, which included:

- Remediation of environmental nuisance
- Offsite soil sampling
- Groundwater monitoring, health and ecological risk assessment
- Vapour monitoring and health risk assessment
- Reporting of soil sampling, groundwater and vapour monitoring
- Certificate of completion.

Site decommissioning and the bulk of the remediation was undertaken between May and September 2005. During this period, all petroleum related infrastructure was removed from the site including six USTs, a TIT, product lines, bowsers, site buildings and structures, hoists and compressors. During these excavations, the bulk of the concrete was removed, and excavated soils were stockpiled for characterisation for reuse onsite and/or offsite disposal. Concrete surfaces remained around the fringes of the site.

No sheen was observed in the water in the basement of 198 Macquarie Street in January 2006 during the round of monitoring completed after the excavation works in October 2005.

In February 2007, the excavation in the northern corner of the site was re-excavated and the excavated soil was sampled and disposed offsite in response to detections of volatile organic compounds (VOCs) in soil vapour. The excavation was backfilled with imported clay. No sampling was undertaken.

Subsequently, groundwater remediation activities were conducted at the site between January 2008 and April 2010 and consisted of multi-phase extraction and treatment (MPEAT) and chemical oxidation injection events to reduce hydrocarbon impacts in groundwater.

Coffey submitted a Final Site Status Report to the EPA to address the requirements of the EPN in January 2011 summarising the findings of the groundwater and soil vapour monitoring as well as documenting the remedial activities undertaken at the site. A program of monitoring residual impact was proposed as the appropriate action required for the site.

The EPA revoked the EPN and the SMNs were issued in October 2011 on the grounds that:

> *"The area of land is a contaminated site because there are under it hydrocarbon pollutants in groundwater in concentrations above background concentrations. These pollutants are likely to cause serious or material environmental harm in the future if not appropriately managed, in that they have the potential to have an adverse effect on human health through inhalation, dermal exposure or ingestion that is of a high impact or on a wide scale, or is not negligible."*

A Groundwater Management Plan (GMP) was prepared by Coffey in May 2011 and was implemented as a requirement of SMN 8625/1 and ongoing monitoring of groundwater was to be continued on a regular basis under this notice. A progress report to the EPA was required every three years.

Further assessment (test pitting) of shallow soil was also conducted in 2014 by ERM. Works for the demolition, removal and disposal of remnant concrete were undertaken in 2016 and targeted soil assessment from the immediate surface beneath the concrete.

A final GMP progress report was prepared in February 2014 by ERM as a review of the first three-year period of monitoring in compliance with the GMP (under the SMN). ERM concluded that there had been no breaches of the groundwater trigger levels and no contingency measures were required. Although some impact still remained, ERM discussed the suitability of this in relation to the ongoing use at the site and risk posed, providing the overall conclusion that removal of the SMN was recommended.

The SMNs were revoked by the EPA on 21 March 2014. In the letter accompanying the revocation certificates, the EPA stated that:

> *"The information provided demonstrates the site is no longer a contaminated site (as defined under section 74A of the Environmental Management and Pollution Control Act 1994. This decision does not infer that the site does not contain contaminants in soil and/or groundwater; rather it is considered that the current levels of contamination do not pose an unacceptable risk the environment or human health base on the information provided and the on-going use of the site for commercial/industrial purposes...*
>
> *However, should the site be redeveloped or use of the site change, further assessment and the implementation of remediation and/or management (including design and construction considerations) may be required to demonstrate to the Planning Authority that no unacceptable risk to the environment or human health will arise from the intended use. In particular I refer to remnant contamination in the vicinity of the former underground storage tanks the risk assessment conducted by Coffey Environments 2011 which indicates a potential vapour intrusion risk in relation to the construction of basement structures at the site."*

Subsequent soil vapour monitoring rounds were undertaken in 2014 by ERM and then again in 2017 for the SCR prepared by Golder (along with some additional soil and groundwater investigations).

The remediation and soil assessment works and the series of groundwater monitoring and soil vapour monitoring events are documented in more detail in Sections 6, 8, 9 and 10 of this report.

3.1 Auditor's Opinion

In the Auditor's opinion, the site history is broadly understood. Details regarding specific site usage and filling history prior to 1956 are lacking. However, this has been compensated for by the investigations and remediation conducted.

4. CONTAMINANTS OF CONCERN

Potential contaminants of concern were initially identified in the Phase 1 ESA and are associated with the storage of fuel including unleaded and leaded petrol, diesel and kerosene. The potential contaminants of concern consist of:

- Total petroleum hydrocarbons (TPH)
- Benzene, toluene, ethyl benzene and xylenes (BTEX)
- Metals (particularly lead)
- Polycyclic aromatic hydrocarbons (PAHs)
- Phenols.

4.1 Auditor's Opinion

The Auditor considers that the identified potential contaminants of concern and the analyte lists used by the consultants adequately reflect the site history and condition. These contaminants have been adequately assessed through various phases of the investigation.

The primary contaminants that have been identified as being present at the site in soil and groundwater are petroleum hydrocarbons (TPH and BTEXN). Lead was identified in soil.

Volatile TPH, BTEXN and trimethylbenzenes (TMBs) and styrene (also associated with petroleum hydrocarbons) were identified in soil vapour. Tetrachloroethene (PCE) has been identified at low concentrations in some rounds in soil vapour.

Volatile organics consisting of bromodichloromethane, chloroform and PCE have also been detected at low concentrations in some rounds in groundwater. Groundwater was not analysed for TMBs.

5. STRATIGRAPHY AND HYDROGEOLOGY

Following a review of the reports listed in Section 1.2, a summary of the site stratigraphy and hydrogeology was compiled by the Auditor as follows.

5.1 Stratigraphy

The SCR reviewed the Tasmanian Government Mineral Resources Tasmania online map (http://www.mrt.tas.gov.au/portal/digitalgeological-atlas-1-25000-scale-series) in June 2018 which showed that the site is underlain by Jurassic Age igneous rock comprising dolerite with locally developed granophyre.

The sub-surface profile encountered at the site was summarised in the SCR, as presented in Table 5.1.

Table 5.1: Stratigraphy

Depth (mbgl)	Subsurface Profile
Onsite	
0.0 – 1.3 (Average)	Fill: clayey sandy gravels, imported gravel (non-descript crushed rock) and reworked clay and dolerite.
Up to 14.0 depth	Weathered dolerite bedrock, blue grey, very fine grained, consolidated and frequently fractured. Groundwater was generally encountered between 4 and 5 mbgl.
Offsite	
0.0 - 0.1	Asphalt and concrete hardstand
0.1 – 1.0	Fill: Road base, imported gravel and clay.
Up to 14.0 depth	Weathered dolerite bedrock, blue grey, very fine grained, consolidated and frequently fractured. Groundwater was generally encountered between 4 and 5 mbgl.

The Auditor notes that the depth of fill presented by Golder is an average based on the IT, Coffey and ERM reports. Fill depth has been documented to a maximum of 2.5 m (with the exception of MW27 and MW28 which recorded deeper fill) and a natural orange brown clay with weathered gravel was also observed at some locations from approximately 0.5 mbgl above the dolerite.

A compacted clay barrier was also reportedly installed into the former tank pit excavation with reported depths between 1.0 and 2.9 mbgl.

Auditor's Opinion

The Auditor considers the above is a reasonable summary of the conditions based on the reports reviewed. Overall, the depth of fill and underlying stratigraphy have been adequately characterised for the purpose of the Audit.

5.2 Hydrogeology

Surface water runoff is anticipated to flow to the west and northwest and into the roadway stormwater catchment. The nearest surface water body to the site is the Hobart Rivulet, located approximately 130 m northwest of the site.

The SCR reviewed the Tasmanian Department of Infrastructure Energy and Resources Southeast Tasmania Groundwater Map 1 250,000 2006 and reported that:

- The aquifer is present within the fractured rock (dolerite).
- The top of the aquifer is approximately 3.5 m
- The aquifer is variable, however generally unconfined
- The flow is through fractures in the dolerite, with the expected flow towards Hobart Rivulet and average yield approximately 1.24 litres per second.

The complete network of groundwater monitoring wells installed at the site is shown in Attachment 8, Appendix A. Groundwater across the site was encountered within the dolerite and standing water levels (SWLs) typically ranged between 2.8 and 6.9 mbgl across the majority of the site and offsite (downgradient) in rounds of groundwater monitoring in 2014 and 2017. The depth ranged between 5.4 m and 7.9 mbgl in the south-eastern portion of the site at MW1, due to the raised topography in this area.

Groundwater flow has been assessed to be to the north towards the Hobart Rivulet.

SWLs have fluctuated over the years with differences up to 2 m at individual well locations. It is noted that these fluctuations are generally consistent across the monitoring network and have been noted by Coffey to be reflective of regional rainfall.

Two registered groundwater bores (Bore 3252 and Bore 3325) were reported by Golder to the southeast of the site, with the nearest located 1.6 km away. Coffey reported in the GMP that registration of groundwater bores is not a requirement in Tasmania.

Auditor's Opinion

The Auditor considers that the hydrogeology has been adequately characterised for the purpose of the Audit and indicates the presence of an unconfined shallow aquifer within fractured bedrock.

6. EVALUATION OF QUALITY ASSURANCE AND QUALITY CONTROL

6.1 Summary of Field Work and Data Collected

A summary of the field work undertaken and data collected at the site and surrounds over the history of investigations and remediation is provided in Table 6.1 (including reference to relevant Attachments).

The key environmental assessment infrastructure that was utilised in the late stages of remediation, assessment and monitoring includes:

- Nine onsite groundwater monitoring wells (MW1, MW6, MW12, MW17, MW19, MW22, MW26, MW27 and MW28)
- Seven offsite groundwater monitoring wells (MW15, MW16, MW18, MW20, MW21, MW23 and MW24)
- Five 8 m deep stainless steel onsite injection wells (IN1 to IN5)
- Two 3 to 4 m deep stainless steel on-site injection wells (IN6 and IN7)
- Over 20 on-site soil vapour monitoring wells (ERM SV01 to SV06, SV1 to SV14, some of these were lost or destroyed).

Table 6.1: Summary of Field Work Undertaken and Data Collected

Report	Field Work	Data Collected
Phase 1 ESA IT Environmental, 14 October 2003	Site inspections December 2002.	No Analytical data collected. Desktop assessment including site history review, fuel storage summary and site setting assessment. Preliminary Conceptual Site Model (CSM) prepared.
Phase 2 ESA IT Environmental, 22 October 2003	Field work December 2002 and January 2003. Drilling 14 soil bores onsite (BH01 to BH14) and installation and sampling of four groundwater monitoring wells (MW1, MW6, MW9 and MW12). Refer Attachment 3, Appendix A. Utility pit vapour monitoring	Soils analysed for TPH/BTEX (16), metals (1), lead (16), PAHs (7), total phenols (7) and volatile chlorinated hydrocarbons (VCH) (1) Groundwater analysed for TPH/BTEX (4), metals (1), lead (4), PAHs (2) and VCH (1) Includes duplicates
Letter dated 5 October 2004, IT Environmental	Sampling of water and from the basement at 198 Macquarie Street and analysis of 2 samples for TPH, BTEX and lead. Fingerprint analyses of a sample of sheen. Air monitoring with Photoionisation detector (PID) and Lower Explosive Limit (LEL) meter. PID max 2 ppm. LEL 0 % Water samples and fingerprint indicated dissolved phase petrol	
Letter dated 22 December 2004, IT Environmental	Ventilation and explosion-safe sump pump installation at 198 Macquarie Street. Connection of sump to sewer due to hydrocarbon sheen.	
Letter dated 30 March 2005, IT Environmental	Six rounds of vapour (PID, LEL) and odour monitoring at 198 Macquarie Street between October 2004 and February 2005.	
PP2 ESA 2005 IT Environmental, 1 April 2005	Field work January and February 2005. Drilling six soil bores and installation and sampling of six groundwater monitoring wells: • 3 x offsite in Macquarie Street (MW15, MW16 & MW18) • 1 x offsite in Barrack Street (MW20) • 2 x onsite along northeast boundary of site (MW17 & MW19)	Soils analysed for TPH/BTEX (8), metals (7), lead (8), PAHs (7), total phenols (7) and VCH (7) Groundwater samples analysed for TPH/BTEX (16), metals (4), lead (16), PAHs (6) and VCH (6) Includes duplicates

Report	Field Work	Data Collected
	Ten groundwater wells sampled (MW1, MW6, MW9, MW12, MW15-20). Refer Attachment 4, Appendix A. Utility pit vapour monitoring.	
RAP IT Environmental, 22 November 2005	Details the remedial risk management works to be undertaken to address the requirements of the Environmental Conditions contained in Schedule 2 of the EPN.	
PP2 ESA 2006 IT Environmental, 22 February 2006	Field work October 2005. Drilling five soil bores and installation of groundwater monitoring wells: • 1 x onsite in main tank pit (MW22) • 2 x offsite in Macquarie Street (MW21 & MW24) • 1 x offsite in Barrack Street (MW23) • 1 x offsite within 200 Macquarie Street (north of building) Attachment 5, Appendix A. Utility pit vapour monitoring.	Three locations (MW21, MW24, MW25) (seven soil primary samples) analysed for TPH/BTEX, PAHs and phenols. One location (three primary samples) analysed for volatile organic compounds (VOCs) and metals. Fourteen groundwater samples (MW1, MW6, MW12, MW15-25) analysed for TPH and BTEX, six for PAHs and phenols and monitored natural attenuation (MNA) parameters.
TEA Report IT Environmental, 4 April 2006	Field work May to October 2005. Initial excavation of fuel infrastructure followed by additional chasing out of contamination and validation and removal of top 1 m. Backfill with validated excavated spoil below 1 m. Remaining material disposed offsite. Imported quarried product was placed from 1 m to surface. Attachments 6, Appendix A.	209 primary soil validation samples collected from the walls and base of excavations. TPH, BTEX, lead (209), PAHs and phenols, metals (67) and VOCs (15). 63 soil samples collected from stockpiles. TPH, BTEX, lead (63), PAHs and phenols (22), metals (16), VOCs (4), OCPs (14) and OPP (1). Imported material validated with 4 samples prior to import and analysed for TPH, BTEX, PAHs, phenols and metals.
Air Sampling and GME IT Environmental, 1 March 2006	Field work 9-11 January 2006 GME (six onsite and eight offsite wells) (MW1, MW6, MW12, MW15-25) Vapour monitoring and air sampling in the basements in adjoining properties located on 198 and 200 Macquarie Street using a universal air sampling pump.	Fourteen groundwater samples analysed for TPH, BTEX, phenols, PAHs and lead Nine samples for MNA parameters. Four charcoal tubes were analysed for BTEX (two at each address sampled).
Interim Air Sampling and GME Coffey, 3 August 2006	Field work June 2006 GME (six onsite and eight offsite wells) (MW1, MW6, MW12, MW15-25) Air sampling from the basements in adjoining properties located on 198 and 200 Macquarie Street using a universal air sampling pump.	Fourteen groundwater samples analysed for TPH, BTEX, phenols, PAHs and lead. Four charcoal tubes were analysed for BTEX (two at each address sampled).
Offsite HRA Coffey, 27 July 2006	Assessment of risk posed to hydraulically downgradient offsite receptors from identified groundwater impacts.	
Annual GME and Air Sampling Coffey, 18 January 2007	Field work December 2006 GME (six onsite and eight offsite wells) (MW1, MW6, MW12, MW15-25) Air sampling from the basements in adjoining properties located on 198 and 200 Macquarie Street using a universal air sampling pump Utility pit vapour monitoring	Groundwater samples analysed for TPH, BTEX, phenols, PAHs and lead (14), MNA parameters (8), VOCs (6) Charcoal tubes were analysed for BTEX. Results for one sample only provided in report. However, report states sampling was undertaken at both basements and results less than LOR.

Report	Field Work	Data Collected
Onsite HRA Coffey, 10 November 2006	Nested soil vapour wells SV1 to SV4 (with implants at 1 m & 2 m each location) were installed onsite (in the former tank pit) in August 2006 and sampled using carbon sorbent tubes. Attachment 7, Appendix A. Assessment of risk posed by impacted groundwater and soil vapour to potential future residential or non-sensitive commercial land use.	Eight primary carbon sorbent tubes analysed for TO-17 suite (2 at each nested location).
Site Summary Environmental Report Coffey, 9 November 2006	Summary of available data to assess contamination status of the site and surrounds.	
Letter dated 2 May 2007, Coffey	Field work April to May 2007. Re-excavation works to further investigate the possible source of VOCs identified during soil vapour testing onsite. MW22 decommissioned due to re-excavation activities. Re-excavation of Pit 1. Excavated material was stockpiled (60 m^3) and classified for offsite disposal. The excavation was backfilled with imported clay from a quarry (Section 8.5).	
PP2 ESA 2007 Coffey, 23 May 2007	Field work April to May 2007. Installation of a replacement groundwater well (MW22). Replacement of nested soil vapour wells SV3 and SV4 which were destroyed during re-excavation. Sampling of SV1 to SV4 using carbon sorbent tubes.	One primary soil sample collected at 0.5 m and analysed for TPH, BTEX, PAHs, lead, phenols and VOCs. Groundwater sampling not completed in this event. Eight primary carbon sorbent tubes analysed for TO-17 suite (2 at each nested location).
Updated Onsite HRA Coffey, 19 June 2007	Update of the October 2006 HRA based on the additional data.	
Onsite HRA, Basement Structures Coffey, 16 August 2007	Assessment of health risk associated with potential future residential basement structures.	
Interim GME and Air Sampling. Coffey, 30 July 2007	Field work June 2007. GME (six onsite and eight offsite wells) (MW1, MW6, MW12, MW15-25). Air sampling from the basements of 198 and 200 Macquarie Street (method not described).	GME (six onsite and eight offsite wells) (MW1, MW6, MW12, MW15-25). Charcoal tubes were analysed for VOCs (one at each address, a duplicate and a blank).
PP2 ESA 2007 Coffey, 24 January 2008	Field work November and December 2007. Drilling three soil bores and installation of three groundwater monitoring wells (MW26 to MW28) onsite. Attachment 8, Appendix A. GME of 16 wells (MW1, MW6, MW12, MW15-23, MW25-28) in December 2007. Two radiello devices (passive ambient air samplers) were deployed in the basements at 198 Macquarie Street and one at 200 Macquarie Street.	Six primary soil samples analysed for TPH, BTEX, PAHs, lead, and phenols. 16 groundwater samples analysed for TPH, BTEX, phenols, PAHs and lead. Six samples analysed for MNA parameters. Four radiello tubes were analysed for VOCs (one at each address, a duplicate and a blank).

Report	Field Work	Data Collected
MPEAT JFTA, 13 February 2008	Field work 23 – 27 January 2008. Five-day MPEAT event at MW6, MW22, MW26 and MW27.	
Mobil Groundwater Attenuation Assessments ENSR, 26 March 2008	Utilised Coffey data above.	
Recommendation Letter ENSR, 31 March 2008	Recommendations based on the review of groundwater monitoring reports.	
Groundwater Gauging Coffey, 21 April 2008	Field work March 2008. Gauging of MW1, MW6, MW12, MW17, MW19, MW22, MW26, MW27, MW28.	
MPEAT JFTA, 25 July 2008	Field work 21 – 25 May 2008. Five-day MPEAT event at MW6, MW22, MW26 and MW27.	
Interim GME and Air Sampling Coffey, 16 September 2008	Field work June 2008. GME of 16 wells (MW1, MW6, MW12, MW15-24 and MW26-28). Two radiello devices (passive ambient air samplers) were deployed at 198 Macquarie Street (primary and duplicate) and one at 200 Macquarie Street in the basements.	16 groundwater samples analysed for TPH, BTEX, phenols, PAHs and lead. Six samples analysed for VOCs, two samples analysed for metals and eight samples analysed for MNA parameters. Four radiello tubes were analysed for VOCs (2 primary, 1 duplicate, 1 blank).
Annual GME & Air Sampling Event, Well Installation and Injection of Wells Coffey, 11 February 2009	Field work September – November 2008. Installation of 5 x injection wells (IN1-IN5) to 8 m in rock and injection of oxygen release compound (ORC) and Fenton's Reagent. GME of 16 wells (MW1, MW6, MW12, MW15-24 and MW26-28). Air sampling in basements at 198 and 200 Macquarie Street.	16 groundwater samples analysed for TPH, BTEX, phenols, PAHs and lead. Six samples analysed for VOCs, two samples analysed for metals and eight samples analysed for MNA parameters. Four charcoal tubes analysed for VOC (2 primary, 1 duplicate, 1 blank).
Soil Vapour Well Installation and Sampling Coffey, 18 February 2009	Field work September and November 2008. Installation of ten discrete soil vapour implants: • SV5 (3 m) offsite in footpath • SV6-8 (3.1 or 3.2 m) between former tank pit and adjacent properties • SV9 (3.1 m) onsite within or near former tank pit in north of site • SV10 (3.1 m) offsite in driveway • SV11 (3.1 m) offsite in Macquarie Street • SV12 (1.6 m) adjacent SV11 offsite in Macquarie Street • SV13 (1.6 m) onsite • SV14 (1.6 m) offsite in driveway Located to in the vicinity of hydrocarbon impacted groundwater. Attachment 9, Appendix A. Sampling of 10 new implants and three existing nested well implants (referred to now as SV2/SVA, SV3/SVB and SV4/SVC).	16 primary carbon sorbent tubes were analysed for TO-17

Report	Field Work	Data Collected
Updated Offsite HRA Coffey, 3 March 2009	Updated assessment of risk posed to hydraulically downgradient offsite receptors from identified hydrocarbon groundwater impacts.	
Shallow (3-4 mbgl) injection wells installed March 2009 (IN6 and IN7) (report or logs not available)		
Limited GME Coffey, 26 May 2009	Field work April 2009. Groundwater sampling from 5 wells (MW6, MW17, MW22, MW26 and MW27), which are located in the vicinity of the injection wells.	Five groundwater samples analysed for TPH, BTEX and lead.
Interim GME and Air Sampling Coffey, 28 July 2009	Field work June 2009. Groundwater sampling from 17 wells (MW1, MW6, MW12 and MW15 to 26 and MW28). Radiello passive diffusion activated carbon samplers were deployed within the basements of 198 and 200 Macquarie Street.	17 groundwater samples analysed for TPH, BTEX, phenols, PAHs and lead. Seven samples analysed for VOCs, two samples analysed for metals and nine samples analysed for MNA parameters. Four radiello tubes were analysed for VOCs (one at each address, a duplicate and a blank).
Review of Hydrogeological Data Coffey, 18 September 2009	Review to determine a strategy for sampling the deeper soil vapour wells.	
MPEAT JFTA, 14 October 2009	Field work October 2009 MPEAT event at MW6, MW22, MW17, MW26 and MW27	
Annual GME, Air Sampling Event and Well Injection Event Coffey, 30 March 2010	Field work October and December 2009. Fenton's Reagent was injected into IN4. Six wells (IN1 and IN3 - IN7) were injected with ORC. Attachment 10, Appendix A. GME of 17 monitoring wells (MW1, MW6, MW12, MW15-28). Two radiello devices were deployed at 198 Macquarie Street and one at 200 Macquarie Street in the basements.	17 groundwater samples analysed for TPH, BTEX, phenols, VOCs, PAHs and lead. Eight samples analysed for MNA parameters. Four radiello tubes were analysed for VOCs (one at each address, a duplicate and a blank).
Soil Vapour Sampling and Limited GME Coffey, 2 August 2010	Field work April 2010. GME of five monitoring wells (MW6, MW17, MW22, MW26 and MW27). Collection of soil vapour samples from SV1 to SV5, SV7, SV13 and SV14.	Five groundwater samples analysed for TPH, BTEX, phenols, VOCs, PAHs and lead. 16 primary carbon sorbent tubes were analysed for TO-17.
Combined MPEAT and Injection Event and Interim GME and Air Sampling Event Coffey, 10 September 2010	Remediation April 2010 and GME May 2010. Multiple injection events (Regenox pulse injection) in various wells (IN1, IN2, IN3, IN5, IN4, IN6, IN7) and MPEAT event conducted simultaneously with the injection works. MPEAT applied across wells MW6, MW12, MW17, MW22, MW26 and MW27. GME of 17 groundwater monitoring wells (MW1, MW6, MW12, MW15-28). Two radiello devices (passive ambient air samplers) were deployed at 198 Macquarie Street and one at 200 Macquarie Street in the basements.	17 groundwater samples analysed for TPH, BTEX and phenols, VOCs, PAHs and lead. Eight samples analysed for MNA parameters. Three radiello tubes were analysed for VOCs (one at each address and a duplicate).

Report	Field Work	Data Collected
Soil Vapour Sampling and Limited GME Coffey, 22 November 2010	Field work August and October 2010. GME of five monitoring wells (MW6, MW17, MW22, MW26 and MW27). Collection of soil vapour samples from sample locations SV1, SV2, SV13 and SV14. Remaining soil vapour wells could not be sampled due to water inundation.	Five groundwater samples analysed for TPH, BTEX, phenols, VOCs, PAHs and lead. Four carbon sorbent tubes were analysed for TO-17.
Site Status Report Coffey, January 2011	Summarises status of remediation of primary & secondary sources of contamination and the contamination status of the site and the plume as well as the risk to human health and the environment. Recommendations for further remediation and/or management on and offsite.	
HRA - Former Mobil Hobart Service Station Coffey, 28 January 2011	Assessment of risk associated with lead impacted soil and petroleum hydrocarbon impacted groundwater for future onsite human receptors associated with residential and/or commercial use of the site and for existing offsite human receptors located at residential and commercial properties hydraulically down gradient of the site.	
Annual GME and Air Sampling Event Coffey, 15 February 2011	GME of 17 groundwater monitoring wells (MW1, MW6, MW12, MW15-28) in December 2010. Two radiello devices (passive ambient air samplers) were deployed at 198 Macquarie Street and one at 200 Macquarie Street in the basements.	17 groundwater samples analysed for TPH, BTEX, phenols, PAHs and lead. Selected samples for VCHs, metals and MNA parameters. Four radiello tubes were analysed for VOCs (one at each address, a duplicate and a blank).
GMP Coffey, 9 May 2011	Management framework to protect potential receptors by providing early identification of changed groundwater conditions that may affect beneficial use of groundwater and/or receiving waters.	
EMP Coffey, 15 June 2011	Management framework to minimise risks to human health and the environment associated with residual site impact during implementation of works detailed in the site Groundwater Monitoring Plan (GMP).	
Interim GME and Air Sampling Event Coffey, 24 August 2011	GME of 17 groundwater monitoring wells (MW1, MW6, MW12, MW15-28) in June 2011. Two radiello devices (passive ambient air samplers) were deployed at 198 Macquarie Street and one at 200 Macquarie Street in the basements.	17 groundwater samples analysed for TPH, BTEX, phenols, PAHs and lead. Selected samples for VCHs, metals and MNA parameters. Four radiello tubes were analysed for VOCs (one at each address, a duplicate and a blank).
Annual GME Coffey, 20 February 2012	GME of 17 groundwater monitoring wells (MW1, MW6, MW12, MW15-28) in December 2011.	17 groundwater samples analysed for TPH, BTEX, phenols, PAHs and lead.
Annual GME Coffey, 13 March 2013	GME of 17 groundwater monitoring wells (MW1, MW6, MW12, MW15-28) in December 2012.	17 groundwater samples analysed for TPH, BTEX, phenols, PAHs and lead.
GME ERM, 29 January 2014	GME of 17 groundwater monitoring wells (MW1, MW6, MW12, MW15-28) in November 2013.	17 groundwater samples analysed for TPH, BTEX, phenols, PAHs and lead.
GMP Progress Report ERM, 12 February 2014	A requirement of the GMP to provide a progress report to EPA every three years.	
Soil Vapour Monitoring Well Installation and Soil Investigation (Post Phase II ESA) ERM, 19 November 2014	Field work June and September 2014. Installation and sampling of six shallow soil bores (ERM SVB01-ERM SVB06) and five soil vapour monitoring wells. Excavation and sampling of seven test pits (TP01 – TP07). Drilling and sampling of soil bores SB01-SB06. Attachment 11, Appendix A.	26 soil samples analysed for TRH, BTEXN and lead. 21 samples were analysed for metals. Five samples for phenols, pH and PAHs. Soil vapour sampling not completed in this event.

Report	Field Work	Data Collected
Soil Vapour Monitoring Event Report ERM, 10 November 2014	Field work July 2014 Sampling of eight soil vapour wells (ERM SV01, ERM SV02, ERM SV04, ERM SV05, ERM SV06, SV08, SV09 and SV14) using summa canisters. Eight soil vapour wells could not be sampled due to water inundation.	Soil vapour samples (summa canisters) analysed for TRH, VOCs, BTEXN, O_2, CO_2 and methane.
Soil Vapour Monitoring and GME ERM, 2 December 2014	Field work September 2014. GME of 17 wells (MW1, MW6, MW12, MW15-28) in September 2014. Sampling eight soil vapour wells (ERM SV01, ERM SV02, ERM SV04, ERM SV05, ERM SV06, SV08, SV09 and SV14) using summa canisters. Eight soil vapour wells could not be sampled due to water inundation.	17 groundwater samples analysed for TRH, BTEX, lead, PAHs and phenols. Five samples analysed for MNA parameters (MW6, MW18, MW21, MW22 and MW26). Soil vapour samples (summa canisters) analysed for TRH, VOCs, BTEXN, O_2, CO_2 and methane.
SCR Golder, 4 October 2019	Field work March 2016 and August 2017. Removal of remnant concrete, shallow soil sampling from the immediate surface beneath the concrete in March 2016 (SS001 – SS004). Attachment 12, Appendix A. Gauging of 17 wells (MW1, MW6, MW12, MW15 to 28), GME of MW21 and MW26 in August 2017. Sampling of five soil vapour probes (ERM SV01, ERM SV02, ERM SV04, ERM SV05, ERM SV06) with summa canisters in August 2017.	Four primary soil samples analysed for TRH, BTEX and lead. Two groundwater samples analysed for TRH, BTEX. Soil vapour samples (summa canisters) analysed for TRH, BTEXN, O_2 and helium.

6.2 Groundwater Well Network

The groundwater well network is reviewed by the Auditor in Table 6.2.

Table 6.2: Auditor Review of Groundwater Well Network

Well ID	Total Depth (mbgl)	Screened Interval (mbgl)	Screened Geology	SWL (September 2014)		Location	Position in Historical Extent of Plume
				(m below top of casing)	(mAHD)		
Onsite							
MW1	14	6-14	Dolerite bedrock	6.934	31.01	Southern (upgradient) corner of the site within elevated retained fill area.	Upgradient of and outside plume footprint
MW6	7	2.6-7.2	Dolerite bedrock	3.360	30.64	North (downgradient) corner of the site downgradient of main tank pit farm (leaded and unleaded petrol) (T1 – T3).	Central core of plume
MW9	10.2	3.75 –10.2	Dolerite bedrock	-	-	Southern/central portion of the site. Downgradient of the kerosene and waste oil USTs	Upgradient (southern) edge

Well ID	Total Depth (mbgl)	Screened Interval (mbgl)	Screened Geology	SWL (September 2014)		Location	Position in Historical Extent of Plume
				(m below top of casing)	(mAHD)		
						(T5 & T6), west of diesel bowser and workshop.	
MW12	8.2	3.7 – 8.2	Dolerite bedrock	3.660	30.85	Downgradient of diesel UST (T4) on northwest boundary of site adjacent to Macquarie Street.	Upgradient (western) edge
MW17	7.5	1.75 - 7.0	Dolerite bedrock	3.885	30.75	North-eastern (downgradient) boundary of the site near main tank farm.	Eastern portion of core of plume
MW19	7.2	2.0 - 7.2	Dolerite bedrock	4.930	30.68	Eastern corner of the site	Outside plume
MW22	5.9	2.9 - 5.9	Dolerite bedrock	3.550	30.72	North of main tank farm on northeast boundary of the site upgradient of 200 Macquarie Street adjacent.	Central core of plume
MW26	7	3.0 - 7.0	Clay from 2 to 3 m Dolerite bedrock	3.300	30.77	North (downgradient) corner of the site (west of MW6) downgradient of main tank farm.	Central core of plume
MW27	7	3.0 - 7.0	Fill: gravel in sand matrix (note log may be incorrect)	3.540	30.86	North-western boundary of the site adjacent to Macquarie Street and downgradient of Bowser Island 1 and fuel lines	Western portion of core of plume
MW28	7	3.0 -7.0	Fill: gravel in sand matrix (note log may be incorrect)	4.098	30.87	Central portion of the site. Downgradient of bowsers, fuel lines and TIT.	Southern portion of core of plume
Offsite							
MW15	7.5	1.75 - 7.5	Dolerite bedrock	5.692	27.57	Opposite side of Macquarie Street in front of car dealership in alignment with central portion of site.	Outside western edge of plume
MW16	8	2.0 - 8.0	Dolerite bedrock	5.140	26.99	Downgradient on opposite side of Macquarie Street, 35 m north of the site near to the	Outside eastern edge of plume

Well ID	Total Depth (mbgl)	Screened Interval (mbgl)	Screened Geology	SWL (September 2014)		Location	Position in Historical Extent of Plume
				(m below top of casing)	(mAHD)		
						corner of Barrack Street.	
MW18	6.3	1.3 - 6.3	Fill from 1.0 to 1.3 mbgl. Dolerite bedrock	3.652	29.29	Downgradient onsite side of Macquarie Street, 16 m north of the site in front of property number 198.	Within northern portion of core of plume
MW20	6.8	1.8 - 6.8	Dolerite bedrock	4.265	27.89	North-eastern side of Barrack Street, 60 m to the northeast of site.	Outside plume
MW21	7	2.0 – 7.0	Dolerite bedrock	5.400	27.17	Downgradient on the opposite side of Macquarie Street, 25 m north of the site in front of car dealership.	Within northern portion of core of plume (down-gradient of MW18)
MW23	6	1.5-6.0	Dolerite bedrock	2.882	26.24	Downgradient, 70 m north of the site on the south western side of Barrack Street.	Within northern edge of plume
MW24	5.8	1.3 – 5.8	Fill from 1.1 to 1.2 mbgl. Dolerite bedrock	5.050	27.64	Downgradient onsite side of Macquarie Street, 25 m northeast of the site. Opposite 196 Macquarie Street.	Outside north eastern edge of plume
MW25	6.2	1.7-6.2	Dolerite bedrock	3.965	30.48	Laneway 8 m to the north of site. Downgradient side of 200 Macquarie Street	Within eastern edge of plume

Auditor's Opinion

The groundwater well network (and monitoring regime, refer to Table 6.1) was adequate to assess the plume geometry including composition of the core of the plume and the downgradient extent and stability. Appropriate site coverage and targeting of key infrastructure was achieved. Upgradient and background conditions were also adequately assessed. The wells were constructed adequately to target the aquifer and allow light non-aqueous phase liquid (LNAPL) to enter the well if present.

Overall: Adequate.

6.3 Soil Vapour Well Network

The soil vapour well network is reviewed by the Auditor in Table 6.3.

Table 6.3: Auditor Review of Soil Vapour Well Network and Analyses Performed

Well ID	Total Depth (mbgl)	Screened Interval (mbgl)	Screened Geology	Dates Sampled	Analysis	Installation Date and Location
Onsite						
SV1[2]	2.0	0.9 – 1.0 and 1.7 – 1.9	Clay and Weathered Dolerite	24/8/2006 17/4/2007 14/4/2010[3] 26/8/2010	Method TO-17[2] VOCs in air	Installed in August 2006 Within or near former tank pit in north of site
SV2[2]	2.0	0.9 – 1.0 and 1.8 – 2.0	Weathered Dolerite	24/8/2006 17/4/2007 12/11/2008 14/4/2010[3] 26/8/2010	Method TO-17[2] VOCs in air	
SV3[2]	2.3	0.9 – 1.0 and 2.1 - 2.2	Tank backfill and Weathered Dolerite	24/8/2006 17/4/2007 12/11/2008 14/4/2010[3]	Method TO-17[2] VOCs in air	
SV4[2]	2.0	0.9 – 1.0 and 1.8 – 1.9	Tank backfill	24/8/2006 17/4/2007 12/11/2008 14/4/2010[3]	Method TO-17[2] VOCs in air	
SV6	3.6	3.4 – 3.5	Weathered Dolerite	12/11/2008	Method TO-17[2] VOCs in air	Installed September 2008 Along the north eastern boundary between former tank pit and boundary
SV7	3.5	3.3 – 3.4	Weathered Dolerite	12/11/2008 14/4/2010	Method TO-17[2] VOCs in air	
SV8	3.5	3.3 – 3.4	Weathered Dolerite (clay)	12/11/2008 22/7/2014	Method TO-17[2] VOCs in air Method TO-15[1] VOCs in air (2014)	
SV9	3.5	3.3 – 3.4	Weathered Dolerite (clay)	12/11/2008 22/7/2014	Method TO-17[2] VOCs in air Method TO-15[1] VOCs in air (2014)	Installed September 2008 Within or near former tank pit in north of site
SV13	2.0	1.8 – 1.9	Weathered Dolerite	12/11/2008 14/4/2010 26/8/2010	Method TO-17[2] VOCs in air	Installed September 2008 Northern corner of site along north-western boundary
ERM SV01	2.9	2.7 – 2.8	Weathered Dolerite	22/7/2014 4/8/2017	Method TO-15[1] VOCs in air	Replacement wells installed in September 2014
ERM SV02	2.9	2.7 – 2.8	Weathered Dolerite	22/7/2014 4/8/2017	Method TO-15[1] VOCs in air	

Well ID	Total Depth (mbgl)	Screened Interval (mbgl)	Screened Geology	Dates Sampled	Analysis	Installation Date and Location
ERM SV04	2.9	2.7 – 2.8	Weathered Dolerite	22/7/2014 4/8/2017	Method TO-15[1] VOCs in air	Within or near former tank pit in north of site
ERM SV05	2.1	1.9 – 2.0	Tank backfill	22/7/2014 4/8/2017	Method TO-15[1] VOCs in air	
ERM SV06	2.9	2.7 – 2.8	Weathered Dolerite	22/7/2014 4/8/2017	Method TO-15[1] VOCs in air	
Offsite						
SV5	3.6	3.4 – 3.5	Weathered Dolerite	12/11/2008 14/4/2010	Method TO-17[2] VOCs in air	Installed September 2008 Footpath adjacent to the northern corner of the site
SV10	3.5	3.3 – 3.4	Weathered Dolerite	12/11/2008	Method TO-17[2] VOCs in air	Installed September 2008 Entrance driveway adjacent to the north-western boundary of the site and west of former tank pit
SV11	3.5	3.3 – 3.4	Weathered Dolerite	12/11/2008	Method TO-17[2] VOCs in air	Installed September 2008
SV12	2.0	1.8 – 1.9	Weathered Dolerite	12/11/2008	Method TO-17[2] VOCs in air	Downgradient of site within Macquarie Street, 25 m north of the site in front of car dealership
SV14	2.0	1.8 – 1.9	Weathered Dolerite	12/11/2008 14/4/2010 26/8/2010 22/7/2014	Method TO-17[2] VOCs in air Method TO-15[1] VOCs in air (from 2014)	Entrance driveway adjacent to the north-western boundary of the site and west of former tank pit

Notes: ERM SV03 not completed.

1. USEPA Compendium Method TO-15 - "Determination of Volatile Organic Compounds in air collected in specially-prepared canisters and analyzed by Gas Chromatography/Mass Spectrometry (GC/MS)"
2. USEPA Compendium Method TO-17 - "Determination of Volatile Organic Compounds in air using active sampling onto carbon sorbent tubes"
3. Nested wells- A shallow and deep screen installed at each location.
4. Single result collected, depth of screen not specified.
5. SV01, SV02, SV03, SV04, SV06, SV07, SV10, SV13 noted as damaged or containing water in July 2014

Auditor's Opinion

The soil vapour well network (and monitoring regime, refer to Table 6.1) (mostly in the northern portion of the site) was adequate to assess the potential soil vapour risk posed by the core of the groundwater plume (i.e. the areas with the highest concentration of contamination) to provide an adequately conservative assessment of risk across the site for residential land use including basements. The network was also adequate to assess the risk to the offsite residential buildings including basements (200 and 198 Macquarie Street) or potential basements to the north and the

buildings across Macquarie Street (currently a car dealership, however residential land use and potential basements were assumed as an 'as of right' use).

The construction and depth of the soil vapour wells gave adequate consideration to the site-specific geological profile and included wells that targeted the dolerite above the groundwater table but below the gravel fill, and also wells within fill. Multiple soil vapour sampling events provide temporal coverage.

Historically, the SWLs on the site have increased to a depth preventing the collection of vapour samples from the deeper soil vapour monitoring wells. These generally included the vapour bores screened below 3 m depth. Subsequently, in June 2014, replacement soil vapour monitoring wells (ERM SV01 - SV06) were installed. The new soil vapour probes ERM SV01, SV02, SV04 and SV06 are installed greater than 1 m into the dolerite to 2.9 m depth, while SV05, located in former tank pit 1, is installed within clay, to 2.1 m depth. The SCR concluded that the vapour depths investigated were sufficient to address a future slab on ground construction and a single-storey basement at the location.

The depth of 2.9 m was considered reasonably conservative/adequate as it would likely represent higher impacts near the groundwater table compared to near surface impacts where attenuation would be expected. This sampling depth is useful for informing potential risks to future basements and potentially lower oxygen conditions such as may occur with future slab on ground structures.

6.4 Data Quality

The Auditor has assessed the overall quality of the data by review of the information presented in the referenced reports. The Auditor's assessment follows in Tables 6.4 and 6.5.

Table 6.4: QA/QC – Sampling and Analysis Methodology Assessment

Sampling and Analysis Plan and Sampling Methodology	Auditor's Opinion
Data Quality Objectives (DQO) DQOs in accordance with the seven-step process outlined in NEPM (2013) were not defined in the key reports including the SCR. The quality of the field and laboratory data were, however, assessed.	The sampling strategies largely achieved the overall objectives of the investigations and remedial works when considered as a whole. Identified data gaps have been iteratively addressed through the course of the investigations and remediation. In the Auditor's opinion, omission of specific DQOs does not affect the overall outcome or conclusion of the Audit.
Sampling pattern, locations, density and depth *Fuel infrastructure excavations* Validation samples were collected from the walls and base of the excavations. Depths ranged from 0.3 to 3.5 m with most wall samples collected between 0.3 to 2 m. A PID was used to screen the soil samples and readings were presented in the analytical summary tables. A total of 209 validation samples were collected, which included samples that were subsequently chased out during the infrastructure removal that occurred as three events in June, August and September 2005. The final validation density (i.e. samples representing soil that remains onsite) was approximately 1 sample every 10 m of wall or base. *General site coverage* Assessment of the remainder of the site was achieved predominantly by soil bores (generally converted to groundwater monitoring wells) during the investigation stages of works between 2003 and 2005. Samples from the IT Phase 2 ESA soil bores were collected from hand auger mostly from the surface (0.1 m) with some samples collected at 0.5 m or 1 m. Samples from the IT PP2 ESAs (2005 and 2006) were collected at 0.5 m or 1 m or 1.5 m in fill or soil also by hand auger (i.e.	Overall, there has been adequate coverage of the site with respect to soil, groundwater and soil vapour investigations, and relevant features and zones of contamination have been appropriately targeted. Soil samples were collected at appropriate depths, however, there is some uncertainty within the soil data set since soil samples have not been collected from the area around the groundwater interface at depths between 2-7 m where a potential smear zone could exist. However, this was in dolerite and drilling was via air hammer so it would have been difficult to collect representative samples. On the basis that the primary source was remediated through excavation, and the risks from the smear zone have been considered via groundwater and soil vapour sampling, it is considered that the absence of the deeper soil samples is not significant. It is expected that

Sampling and Analysis Plan and Sampling Methodology	Auditor's Opinion
samples were collected in the fill or soil above the shallow dolerite). Later works were undertaken by ERM in 2014 and Golder in 2016 which targeted areas of historic soil contamination or shallow soil immediately beneath the concrete. The ERM investigations comprised soil bores (SB01 to SB06) and test pitting (TP01 to TP07) while the Golder samples were collected from the surface of fill after removal of remaining concrete. TP01 to TP07 were excavated to a maximum depth of 2.1 m to target residual impacts previously identified at the site. SB02 and SB03 were advanced to a maximum depth of 1 m in the vicinity of the ERM soil vapour wells and former tank pit. SB04 was advanced in the former compressor location. SB05 and SB06 were advanced in the western part of the site to provide coverage. Samples were analysed at targeted depths generally in the shallow soil between the surface and 1.0 m within fill above the dolerite. Samples were also collected at depth between 1.5 and 2 m to target potential deeper impacts or point sources. Soil samples were generally not collected from the depth where groundwater or moist soils were encountered in the dolerite formation beneath the fill and soil in potential smear zones. *Stockpile samples* Stockpile samples appear to have been mostly collected from the near surface of the stockpile with a shovel. Sample depth was not discussed in the reports reviewed. Stockpiles were generally sampled at a density exceeding 1 sample per 25 m^3.	groundwater impacts may remain in the fractured rock. No details were provided for the depth stockpiles were sampled, however, given that hand tools were used, it is likely these were collected from the near surface. Shallow samples collected from the stockpiles are unlikely to represent the full depth of the stockpiles. Volatilisation at the surface of the stockpiles may result in shallow samples under-representing concentrations through the stockpile profile. However, given that multiple small stockpiles were sampled separately, it is likely that the results were representative of the overall volume of soil excavated opposed to the sampling of this volume as a single stockpile.
Groundwater As detailed in Section 6.2, the complete monitoring well network comprised 18 wells (MW1, MW6, MW9, MW12 and MW15 to MW28) which provided coverage across the site and targeted fuel infrastructure as well as down and cross gradient locations offsite (8 locations). For the majority of the GMEs, 17 wells were sampled following the removal of MW9 during the 2005 remedial works. Onsite monitoring wells were located downgradient of the significant former fuel infrastructure and for coverage across the site. An increased density of wells (MW6, MW26, MW22 and MW17) were located on the downgradient boundaries to the north and west adjacent to the identified dissolved phase contamination associated with the former tank farm.	Overall adequate. See Section 6.2 for details.
Soil Vapour As detailed in Section 6.3, nineteen soil vapour wells were installed between 2006 and 2014 by Coffey and ERM. Soil vapour wells targeted shallow conditions associated with residual soil and shallow groundwater impacts (approximately 1 and 2 m depth) and some deeper bores (2.9–3.6 m) into the dolerite bedrock. The final six ERM (ERM SV01–ERM SV06) wells were installed to 2.9 m due to groundwater inundation of the former deeper wells across the site. These final ERM wells were installed in the northern portion of the site targeting the inferred former source release area associated with the tank pits. A single vapour location (ERM SV05) was installed within the former Tank Pit 1 within the backfilled clay. SV11 and SV12 provided shallow and deep samples in Macquarie Street towards the northern extent of the plume near the car dealership and would provide a reasonable indication of potential risk in this area.	Overall adequate. See Section 6.3 for details.
Well construction The groundwater wells were completed at depths between 5.8 and 14 m (refer Section 6.2) and were constructed with 50 mm PVC, sand filter pack, a bentonite seal and flush gatic covers. The wells were screened from the base of the wells over an interval of up to 8 m (generally 4 to 6 m) primarily in the weathered fractured dolerite at the site.	Overall, groundwater, injection and soil vapour well construction was acceptable. The Auditor considered the position of the water table relative to the screen and implants when reviewing the data for each particular location and date. The final well placement in 2014

Sampling and Analysis Plan and Sampling Methodology	Auditor's Opinion
Two onsite wells (MW27 and MW28) were reportedly installed within fill to a maximum depth of 7 m, however, there may be errors within the logging, which is inconsistent with surrounding locations which reported a maximum fill depth of 2.9 mbgl). The wells were screened across the zone of water ingress observed during drilling. The top of the screened intervals for these wells was 2 mbgl. SWLs have fluctuated over the course of the GMEs and the position of the water table in relation to the screened interval has correspondingly varied. SWLs were generally within the screen, however the SWLs have been measured above the screened intervals in some wells in some rounds, notably, MW12 was reported above the screening level during most monitoring rounds between 2005 and 2012. Wells were generally developed by stainless steel or polypropylene bailer with three well volumes removed and water quality parameters collected. *Injection Wells* IN1 to IN5 were installed in September 2008 (Coffey, 11 February 2009). The wells were drilled with hollow flight auger and air hammer. The wells were constructed of 25 mm stainless steel and the screened intervals were in dolerite between ~5.5 to ~8 mbgl, in the saturated zone. The report detailing the installation of injection wells IN6 and IN7 (March 2009) was not provided to the Auditor, although these were reported as shallow wells (3-4 mbgl). *Soil Vapour Wells* Soil vapour wells SV1 to SV4 were installed in August 2006 as nested wells with probes at 0.9–1.0 m and 1.7–1.9 m. Soil vapour probes SV5 to SV14 were installed in November 2008 with SV5 to SV11 drilled to approximately 3.6 m and SV12 to SV14 drilled to 2 m. ERM installed five vapour probes, ERM SV01, ERM SV02, ERM SV04 to ERM SV06, to 2.9 m with the exception of ERM SV05 drilled to 2.1 m. Wells were reported to have been constructed using ¼ inch Teflon tubing attached to a stainless steel screen implant. Implants were installed approximately 100 mm off the base of the borehole. A sand filter pack was placed to approximately 100 mm above the implant, a 100 mm dry bentonite seal was added prior to cement grout to the surface or in the case of nested wells the base of the next implant installation. All wells were grout sealed above the bentonite to the surface and capped with a concrete-set, flush mounted gatic cover.	demonstrates that the water level, stratigraphy and depth to impact in relation to any future development scenarios has been appropriately assessed. Further discussion is provided in Sections 6.2 and 6.3.
Sample collection method *Soil* The early soil bore investigations by IT (Phase 2 ESA and Post Phase 2 ESA) were conducted with hand auger in fill and soil. Drilling into the dolerite was conducted by air hammer. Samples were not collected from the dolerite. Excavation samples (TEA) were obtained from the freshly excavated soil surface taken from within the excavator bucket from a position not in contact with the side of the bucket using a hand trowel or gloved hand. Stockpile samples (shallow) were collected using a hand trowel. Sampling methodology for the ERM soil bores and test pits was not discussed in the report. However, the logs indicate a combination of push tube and hand auger sampling from soil bores. Samples from test pits were presumably collected by hand or from the excavator bucket. Soil sampling methodology for the Golder surface samples was not discussed but these were presumably collected by hand or with hand tools.	Collection of soil samples by hand auger and from excavator buckets and collection of groundwater samples with bailers may have resulted in some loss of volatiles. However, the methodologies were consistent between most sample events. The data sets are considered adequately large and consistent with field observations and site history to assess contaminant trends and distribution and to provide a reasonable indication of concentrations of volatile contaminants. There may be some disparity in the comparability of the data collected by bailers and low flow techniques in the last two rounds of groundwater sampling. However, the low flow techniques are likely to provide more accurate data and therefore the data from the last two rounds of groundwater sampling are likely to be more representative of the recent

Sampling and Analysis Plan and Sampling Methodology	Auditor's Opinion
Groundwater The earlier groundwater samples were collected with disposable bailers. Samples for metals were field filtered. The GME undertaken by ERM in 2014 and subsequent GME by Golder in 2017 were conducted using low flow sampling methods. Samples for metals were field filtered. Field sheets were generally provided in each report. *Soil Vapour* Soil vapour sampling presented in the Coffey reports subcontracted the sampling to Leeder Consulting. The methodology presented was limited, however, sufficient information was provided in text and within the provided field sheets. Carbon sorbent tubes were attached to each sampling point where an additional piece of Teflon tubing was attached to a pump and air was drawn from the vapour point through the tube. Samples were collected and analysed in accordance with USEPA TO-17 methodology. A 5 minute and 30 second sample was collected and reported in the Leeder Consulting field sheets that also included the tube ID and flow rate for each sample. The 30 second sample was analysed while the 5 minute sample was placed on hold. Tedlar Bags were used to collect air samples for bulk gases. Purging of the wells prior to sampling was not discussed during the Coffey soil vapour sampling events. ERM completed soil vapour sampling for two rounds in 2014 using summa canisters following USEPA TO-15 methodology. It was reported that 1000 mL of air was purged from the well prior to sampling and a 1.4 L sample collected. A PID and LEL meter was used to collect measurements from the vapour wells prior to and after the sampling event. Canister pressures were recorded at the start and end of sampling and reported on the sample chain of custody (COC). Bores were leak tested using either isopropyl alcohol or helium across the individual sampling events. Golder completed soil vapour sampling using Summa Canisters. Leak testing with helium and sample train purging was undertaken. Canister pressures before and after sampling were recorded. Purge and sample durations were recorded. *198 and 200 Macquarie Street Indoor Air* Radiello passive diffusion activated carbon samplers were deployed within the basements of 198 and 200 Macquarie St for a 24 hour period. Each sample tube was provided from the laboratory in a sealed glass container and was deployed without skin contact of the sampling tube. At the end of the sampling period, the sample tubes were resealed within clean glass vials and sent to the testing laboratory for desorption and analysis. Air sampling in basements of 198 and 200 Macquarie Street was conducted using a universal sampling pump and carbon sorbent tubes.	groundwater conditions. Therefore this is considered acceptable. Soil vapour sampling is considered acceptable.
Decontamination procedures *Soil & Groundwater* Non disposable sampling equipment was cleaned with detergent and water between sampling events to prevent cross contamination. New gloves were reportedly used for each new sample. Dedicated groundwater sampling equipment was used for each well except for the historical usage of a stainless steel bailer.	Acceptable
Sample handling and containers *Soil & Groundwater* Samples were placed into prepared and preserved sampling bottles provided by the laboratory and chilled during storage and subsequent transport to the laboratories.	Acceptable

Sampling and Analysis Plan and Sampling Methodology	Auditor's Opinion
Soil Vapour Soil vapour samples were collected on carbon sorbent tubes or into 1.4 L summa canisters. The radiello samples collected in 198 and 200 Macquarie Street were sealed inside clean laboratory supplied glass vials and transported to the testing laboratory. An additional sample tube was utilised as a trip blank for transport to the laboratory.	
Chain of Custody (COC) Completed COC forms were provided in the reports.	Acceptable
Field screening *Soil* Field screening for volatiles was undertaken using a PID. *Groundwater* Groundwater field parameters were measured during well sampling and development. *Soil Vapour* PID, LEL and IPA leak test results were provided.	Acceptable
Soil, Groundwater and Soil Vapour Field and/or supplier calibration certificates for PIDs and water quality meters were generally not provided however some certificates have been included in the reports reviewed. A Rotameter used during the soil vapour sampling was calibrated and certificate included in the ERM report.	Where available the PID readings appear realistic and consistent with the field observations and laboratory data. Neither the consultants nor the Auditor have placed strong emphasis on the water quality parameters when drawing conclusions in relation to the site. Therefore, the absence of detail regarding calibration is not considered material when assessing the suitability of the site for the proposed use.
Sampling logs *Soil & Groundwater* Test pit and borehole logs were provided within the reports, indicating sample depth, PID readings, lithology and well construction details. Logs for IN6 and IN7 were not provided. No excavation logs were provided. However, the TEA included analytical results for validation and stockpile samples including depth, description and PID readings. Groundwater field sampling records were provided in most reports. *Soil Vapour* Soil vapour logs were provided indicating sample depth and lithology. The logs report no indications of contamination were found (except minor odour was noted at SV09). PID data was not collected during soil vapour well installation.	Acceptable.

Table 6.5: QA/QC - Field and Lab Quality Assurance and Quality Control

Field and Laboratory QA/QC	Auditor's Opinion
Field quality control samples & results Field quality control samples including inter-laboratory duplicates, intra-laboratory duplicates, trip spikes, trip blanks, field blanks and rinsate blanks were conducted at acceptable frequencies. No inter-laboratory duplicates were analysed for soil vapour. The results did not indicate any significant systemic quality issue during field work or laboratory analyses.	Overall, the data set is considered adequately large as well as being consistent with the field observations and site history to provide a reasonable basis for decision making and assessing risks.
NATA registered laboratory *Soil & Groundwater* Over the various soil and groundwater sampling events the primary laboratories utilised were ALS or Amdel. The secondary laboratories were Eurofins MGT and AGAL. The laboratories	Some variation in the comparability of data between sample events is expected given the duration of time over which the iterative sample events have occurred and the potential for variation in the field and laboratory methods.

Field and Laboratory QA/QC	Auditor's Opinion
were NATA accredited for the analyses performed and the certificates were NATA stamped. *Soil Vapour* Soil vapour samples were analysed by Leeder Consulting or ALS and the reports were NATA stamped.	However, the data set is considered adequately large and consistent with the field observations and site history for these possible variations to not be of significance.
Analytical methods *Soil & Groundwater* Brief method summaries of in-house NATA accredited methods based on USEPA and/or APHA methods for extraction and analysis were provided on the laboratory certificates. *Soil Vapour* Carbon sorbent tubes were analysed for volatiles using USEPA method TO- 17. Soil vapour samples from Summa Canisters were analysed for TPH/BTEX and VOCs using USEPA TO-15 and for bulk gases. Brief method summaries were included in the analytical reports.	Acceptable
Holding times Review of the COCs and laboratory certificates indicate that the holding times have been met for most samples/analyses. A few minor exceptions were noted that were not considered significant in the context of the data set reviewed. Holding times were acceptable for soil vapour samples.	Acceptable
Laboratory Limits of Reporting (LORs) The LORs were adequate and below the threshold criteria for the key contaminants of concern.	Acceptable
Laboratory quality control samples Laboratory quality control samples including laboratory control samples, matrix spikes, surrogate spikes, blanks, internal standards and duplicates were undertaken by the laboratories. Results were within control limits for most samples/analyses. A few exceptions were noted that were not considered significant in the context of the data set reviewed. *Soil Vapour* Soil vapour laboratory quality control samples included laboratory duplicates, method blanks, laboratory control spikes and control spike duplicates and surrogates. Results were within acceptable control limits.	Acceptable
Data Quality Indicators (DQI) and Data Evaluation (completeness, comparability, representativeness, precision, accuracy) Coffey and ERM concluded on the overall suitability of the dataset in the reports assessed. Golder undertook a review of the historical data quality and data from the limited sampling conducted as part of the SCR. Golder concluded that the QA/QC procedures and documentation for the historical site assessments are considered satisfactory for interpretive use.	See below.

Auditor's Opinion

Overall, the data set, when considered as a whole, is of adequate precision, accuracy, representativeness, comparability and completeness to form a basis for decision making and for assessing risks to the relevant receptors on and offsite.

7. ASSESSMENT CRITERIA

7.1 Soil

7.1.1 Human Health

The Auditor has adopted soil assessment criteria protective of human health from the following Australian sources:

- NEPM (2013) Health Investigation Levels (HILs) for non-volatile soil compounds for 'Residential' (HIL A) land use.
- NEPM (2013) Health Screening Levels (HSLs) for TRH, BTEX and naphthalene compounds for 'Low-High Density Residential' (HSL A&B) land use, for the vapour inhalation pathway. The HSLs assumed a sand soil type. HSLs for vapour intrusion are applicable to ground floor use, therefore HSL D may be applied where non-residential use (e.g. car parking or commercial use) exist in a basement or at ground level.
- NEPM (2013) Management Limits for Petroleum Hydrocarbons for Residential land use assuming coarse soil texture.
- Friebel & Nadebaum (2011) HSLs for direct contact for all land use categories, and vapour inhalation/direct contact pathways for intrusive maintenance workers.

The specific criteria adopted for the key contaminants of concern at the site are discussed in Section 8.

7.1.2 Ecological

The Auditor has adopted ecological soil assessment criteria from the following Australian sources:

- NEPM (2013) Ecological Screening Levels (ESLs) for 'Urban Residential and Public Open Space' land use, assuming coarse soil.
- NEPM (2013) Ecological Investigation Levels (EILs) for 'Urban Residential and Public Open Space' land use. In the absence of site-specific soil data on pH, clay content, cation exchange capacity and background concentrations, the published range of the added contaminant limits have been applied as an initial screen.

7.2 Groundwater

7.2.1 Protection of Environmental Values

The quality of groundwater in Tasmania is managed under the State Policy on Water Quality Management (1997) (DPIWE, 1997) ('the State Policy'). The stated purpose of the State Policy is to *"achieve the sustainable management of Tasmania's surface water and groundwater resources by protecting or enhancing their qualities while allowing for sustainable development in accordance with the objectives of Tasmania's Resource Management and Planning System."*

The State Policy defines a range of Protected Environmental Values (PEVs) for surface and groundwaters which are uses of the water resource that are to be protected. For groundwater, PEVs are allocated based upon the salinity (concentration of total dissolved solids (TDS)) of the groundwater as specified in Table 1 of the State Policy. The lower the salinity, the greater the number of uses (PEVs) that are likely to apply to the groundwater body. The Tasmanian EPA considers that groundwater is polluted where current and/or future PEVs are precluded. PEVs of groundwater are considered to be precluded when the allocated groundwater quality objectives for those PEVs have been exceeded.

Groundwater monitoring wells that target the regional aquifer and were not impacted by petroleum hydrocarbons (below LOR) (MW1, MW16, MW19, MW20, MW24 and MW28) had TDS concentrations ranging from 417 mg/L (MW28) to 595 mg/L (MW20).

A comparison of observed TDS concentrations in the State Policy indicates that groundwater beneath the site generally falls within Category A. Category A allows for the following PEVs: drinking water, irrigation, industry, stock watering and ecosystem protection.

The State Policy recommends that guidelines for the protection of human health be sourced from the National Health and Medical Research Council (NHMRC). The NHMRC in collaboration with the Natural Resource Management Ministerial Council (NRMMC) published the 2011 Australian Drinking Water Guidelines (ADWG) (revised in 2018). The ADWG are considered the most recent guideline for drinking water quality in Australia and have been adopted for the audit.

For all other uses of water, the State Policy recommends the latest edition of the 1992 Australian Water Quality Guidelines for Fresh and Marine Waters, Australia and New Zealand Environment and Conservation Council and Agriculture and Resource Management Council of Australia and New Zealand (ANZECC 1992). ANZECC 1992 was superseded by the 2000 Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC 2000) and was recently superseded again by the Australian and New Zealand Guidelines for Fresh and Marine Water Quality, Australian and New Zealand Governments and Australian state and territory governments, Canberra ACT, Australia (ANZG 2018). To assess the PEVs, ANZG 2018 has been used as the primary reference for guidelines other than drinking water. ANZECC 2000 has been used for irrigation and stock watering. Specific assessment criteria have not been considered for industrial usage since the criteria adopted for the remaining PEVs are considered adequately protective of industrial use.

For the Ecosystem Protection PEV, the 95% protection level trigger values for freshwater were used, which are applicable to ecosystems that could be classified as 'slightly to moderately' disturbed.

Where Australian assessment criteria were not considered appropriate, or criteria are not provided, the Auditor adopted groundwater assessment criteria from the USEPA Regional Screening Levels (RSLs) Residential Tap Water Criteria Online database of assessment criteria that are current as of November 2018. Tap water assessment criteria derived for carcinogenic compounds were multiplied by a factor of 10 to adjust the target cancer risk level from 1:1,000,000 to 1:100,000 to be consistent with Australia's recommended target cancer risk level. For some chemicals, where a criteria has been derived using both non-cancer and cancer toxicity data, the lower criteria was adopted.

In summary, groundwater objectives to assess if the site precludes any of the PEVs requiring protection have been based on:

- NHMRC (2011) National Water Quality Management Strategy, Australian Drinking-Water Guidelines 6, Version 3.5 Updated August 2018.
- ANZG (2018) Australian and New Zealand Guidelines for Fresh and Marine Water Quality. Australian and New Zealand Governments and Australian state and territory governments, Canberra ACT, Australia.
- ANZECC (2000) Australian and New Zealand Guidelines for Fresh and Marine Water Quality. Australia and New Zealand Environment and Conservation Council and Agriculture and Resource Management Council of Australia and New Zealand:
    - Water Quality for irrigation and General Water Use
    - Livestock Drinking Water Quality.
- USEPA RSLs Residential Tap Water Criteria.

Table 7.1: Groundwater Assessment Criteria (µg/L)

Contaminant	Ecosystem Protection[1]	Irrigation[2]	Stock Watering[2]	Drinking Water[3]
TPH (C_6 – C_9)	-	-	-	-
TPH (C_{10} – C_{36})	-	-	-	-
Benzene	950	-	1	1
Toluene	180	-	800	25
Ethylbenzene	800	-	300	3
Ortho-xylene	350	-	-	-
m-xylene	75	-	-	-
p-xylene	200	-	-	-
Xylenes (total)		-	600	20
Naphthalene	16	-	-	6.1[4]
Lead	3.4	200	100	10
2,4,6-tri chorophenol[5]	3	-	20	2
2,4–dichlorophenol[5]	120	-	200	0.3
2-chlorophenol[5]	340	-	300	0.1
Pentachlorophenol[5]	3.6	-		10
Phenol	320	-		

- No criteria available/used
1 ANZG 2018, *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*
2 ANZECC 2000, *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*
3 NHMRC 2011, *Australian Drinking Water Guidelines*
4 USEPA RSLs *Residential Tap Water Criteria*.
5 99% Protection of species

7.2.2 Human Health (Vapour Inhalation)

When considering the potential for groundwater to provide a source of vapour and considering the potential risk from the vapour inhalation pathway for TRH, BTEX and naphthalene compounds, the Auditor adopted the NEPM (2013) HSLs for residential land use (HSL A&B) based on a sand soil type with a depth to water of 2 m to <4 mbgl.

These criteria were also used to assess the risk to the 'as of right' properties to the north of the site (200 and 198 Macquarie Street). Criteria for commercial/industrial land use (HSL D) were also considered to assess the current risk to the nearby car dealership.

In the absence of a specific HSL, the ADWGs were applied as these are protective of all exposure pathways including inhalation. In the absence of an ADWG criteria, the USEPA RSLs were adopted.

7.3 Soil Vapour

The Auditor has assessed the soil vapour data both on and offsite for 'as of right' uses in reference to:

- NEPM (2013) Interim soil vapour HILs for a select number of volatile organic chlorinated compounds. Interim HILs for 'Residential' land use (HIL A) were adopted for PCE.
- NEPM (2013) HSLs for TRH, BTEX and naphthalene compounds for 'Low-High Density Residential' (HSL A&B) land use, for the vapour inhalation pathway. The HSLs assumed a

sand soil type. HSLs for vapour intrusion are applicable to ground floor use, therefore HSL D may be applied where non-residential uses (e.g. car parking or commercial use) exist in a basement or at ground level.

- USEPA RSLs for Residential Air with an attenuation factor applied as described below.

An attenuation factor is the ratio of the indoor (or outdoor) air concentration to the soil vapour concentration. As recommended in Friebel & Nadebaum (2011), an attenuation factor of 0.005 was applied to ambient air guidelines for petroleum hydrocarbons. For chlorinated compounds, an attenuation factor of 0.1 was applied as per NEPM (2013) Schedule B7 approach. This approach results in soil vapour concentrations 200 times higher for petroleum hydrocarbons and 10 times higher for chlorinated hydrocarbons and non-petroleum hydrocarbons.

7.4 Ambient Air

The Auditor conducted an initial screen of ambient air data against USEPA RSLs for Residential Air.

Where a Residential Air criterion was exceeded, the criteria was multiplied by 10 to adjust the target cancer risk level from 1:1,000,000 to 1:100,000 to be consistent with Australia's recommended target cancer risk level.

Table 7.2: Indoor/Ambient Air Assessment Criteria (µg/m³)

Contaminant	USEPA Residential Air	USEPA Industrial Air	USEPA Residential Air x 10
Benzene	0.36	1.6	3.6
Cyclohexane	6,300	-	-
Ethylbenzene	1.1	-	11
n-Heptane	3.1	-	-
Toluene	5,200	-	-
Xylenes	100	-	-

The Auditor also considered ambient or indoor air guidelines from the following sources:

- WHO air quality guidelines from the following sources:
  - WHO (2000) Air Quality Guidelines for Europe, Second Edition, WHO Regional Publications, European Series No 91.
  - WHO (2010) Guidelines for Indoor Air Quality: Selected Pollutants, WHO European Centre for Environmental Health, Bonn Office.
  - WHO Concise International Chemical Assessment Documents and Environmental Health Criteria documents/revisions.
- NEPM (2011) National Environment Protection (Air Toxics) Measure. Australian Government, Canberra.
- Ministry of the Environment and Climate Change (MOECC, 2012) Ontario's Ambient Air Quality Criteria. Standards Development Branch, Ontario Ministry of the Environment.
- Texas Commission on Environmental Quality (TCEQ, 2015) Effects Screening Levels.
- Office of Environmental Health Hazard Assessment (OEHHA, 2000).
- USEPA Integrated Risk Information System (IRIS) online database

A comparison of the air quality data against these criteria is provided in Section 11.

7.5 Criteria Adopted by the Consultants

The environmental quality criteria referenced by the Auditor for soil, groundwater and soil vapour are generally consistent with those adopted Golder for the SCR and by ERM for the most recent ESAs and soil vapour assessments.

The early soil and groundwater data were collected prior to NEPM (2013) and was thus assessed at the time against criteria provided in the NSW EPA (1994) 'Service Station Guidelines' and the earlier version of the NEPM (1999). The Auditor has reassessed the relevant data against the most current criteria as presented herein. Therefore, this has not had an impact on the overall outcomes at the site.

The ambient air criteria adopted by Coffey are summarised in Figure 7.1 below.

Table 4.3 – Nominated Air ILs (µg/m³)

Analyte	Air Screening Criteria
Benzene	9.8 [1, 8]
Toluene	260 [2, 9]
Ethylbenzene	22,000 [3, 10]
Xylenes	870 [4, 9]
n-Hexane	700 [5, 8]
Cyclohexane	6,000 [6, 8]
Isopropylbenzene	400 [8, 8]
n-Heptane	18,400 [7, 8]
Isooctane	
2-Methylpentane	
3-Methylpentane	
n-Decane	1,000 [7, 8]
n-Octane	

1. *National Environment Protection Council (2004) National Environment Protection (Air Toxics) Measure, Explanatory Document, April 2004, Canberra.*
2. *World Health Organisation (2000) Air Quality Guidelines for Europe, Second Edition, European series No 91, Geneva.*
3. *World Health Organisation (1996) Ethylbenzene, Environmental Health Criteria 186, International Programme on Chemical Safety (ICPS), Geneva.*
4. *World Health Organisation (1997) Xylenes, Environmental Health Criteria 190, International Programme on Chemical Safety (ICPS), Geneva.*
5. *United States Environmental Protection Agency (US EPA) (2005) Toxicological Review of n-Hexane (CASRN 110-54-3), EPA/635/R-03/012, Office of Research and Development, National Centre for Environmental Assessment, Washington Office, Washington, DC.*
6. *US EPA (2009) Integrated Risk Information System, On-line Database, < http://www.epa.gov/iris/ >, accessed 25-August-2009.*
7. *Edwards et al (1997). Based on Gustafson et al (1997), these analytes do not comprise all analytes potentially present within the respective fractional grouping.*
8. *Calculated for annual / lifetime exposure duration.*
9. *Calculated for weekly exposure duration.*
10. *Calculated for daily exposure duration, or calculated source exposure not known.*

Figure 7.1: Air Investigation Levels Adopted by Coffey (Source: Coffey Interim GME and Air Sampling 2011)

There are some differences in the ambient air criteria adopted by the Auditor as detailed in Sections 7.4 and 11. However, these did not have a material bearing on the assessment of risk.

8. EVALUATION OF SOIL ANALYTICAL RESULTS

8.1 Overview

Soil remediation and validation works occurred over four distinct phases. The first phase was in May 2005 where infrastructure was initially removed, resulting in a series of separate pits and trenches that were subsequently validated. Trenches around product lines and bowser islands were excavated to 0.7 m depth; pits around the hoists, TIT and waste oil tank to 1.7 m; and UST excavations were excavated to between 2.9 and 3.5 m.

The second phase included the extension of excavations in June 2005 to address validation failures from the May 2005 validation works. The trenches around the product lines were extended to a depth of 1.0 m and the main UST pit in the northern portion of the site was extended to 3.5 m. Additional deeper excavations were completed around the southern bowser island to 2.5 m and along product lines in the southwest which were extended to 2.0 m.

During the third phase, the top 1 m of soil was excavated from the majority of the site, firstly in the western portion (identified by IT as E1) and eastern portion of the site (identified by IT as E2, refer Attachment 6, Appendix A). E1 and E2 were validated in August 2005.

The final stage involved the chasing out and excavation of residual contamination over two events in September 2005 which provided a final validation dataset for the remedial works at the site. This final excavation data is presented in Attachment 6, Appendix A.

Subsequently, additional soil bore, test pit and shallow surface sampling data was collected. The final extent of remediation, soil sample locations and analytical results exceeding criteria are presented in Attachments 12 and 13, Appendix A.

8.2 Petroleum Hydrocarbons

The majority of the petroleum hydrocarbon impacted soils were removed during the TEA in 2005. A total of 209 validation samples were collected from the walls and base of the excavations.

Sample P581_QC11 collected at a depth of 1.5 m from the base of the TIT excavation reported a TRH F2 concentration (460 mg/kg) exceeding the F2 assessment criterion of 110 mg/kg for HSL A, sand, 0 – 1 m and 240 mg/kg for 1 - 2 m depth intervals. However, this soil material appears to have been removed as part of the later excavation E2D. Relevant validation samples for E2D reported concentrations of F2 below the LOR, suggesting the impacts observed in this area were removed and any residual hydrocarbon impacts in this area are likely to be minor. Further confirmation of this was obtained during the test pitting by ERM in 2014. TP04 and TP07 were located near the former TIT and provided further evidence the area was excavated to approximately 1.8 m depth and the samples collected from 1.85 m and 2.1 m depths reported concentration of TRH F2 below the LOR.

During each of the remediation stages, soil was stockpiled separately and characterised and assessed for suitability for onsite reuse below a depth of 1 m or characterised for offsite disposal. Quarried rock (1488.5 tonnes) was imported to site and placed at a minimum thickness of 0.8 m to reinstate the site surface.

In 2016, Enviropacific was engaged to remove the remaining portions of the concrete slab that were onsite in small area in the northeast, south and west of the site. Surface soil beneath the former slabs was validated.

Auditor's Opinion

Overall, remediation for petroleum hydrocarbons has been adequate. Some minor exceedances of ESLs remain sporadically across the site near former infrastructure as shown on Attachment 13, Appendix A. However, these are not considered to pose a significant risk to ecology at the site.

8.3 Lead

Lead concentrations above the HIL A criterion of 300 mg/kg remain in the vicinity of validation samples reported from excavations as follows:

- The base of the compressor pit - CPE (660 mg/kg at 0.8 m) and CPW (690 mg/kg at 0.8 m)
- Adjacent to the north-eastern site boundary (near stormwater pipes) - P1EW10 (400 mg/kg at 1.0 m), P1EW11 (310 mg/kg at 1.1 m)
- Base of excavations (rock) near bowsers and product lines in the central portion of the site - T16B (500 mg/kg at 1.1 m), T20BS (830 mg/kg at 1.9 m)
- Base of Pit 5 (TIT) - P5B1 (400 mg/kg at 1.5 m).

These were not excavated due to services, proximity to adjacent structures and rock being encountered.

Validated imported fill was used to backfill these areas from at least a depth of 0.8 m to surface level.

A total of 132 samples analysed across the site during the TEA averaged 49.64 mg/kg for lead.

During the subsequent test pitting to assess shallow soil (ERM 2014 PP2 ESA), lead concentrations exceeding HIL A were reported as follows:

- TP01 (797 mg/kg at 0.2 m in fill) in the raised southern portion of the site to the south of the former compressor pit
- TP05 (585 mg/kg at 1.1 m) beneath a former excavation for a product line.

The exceedances are shown on Attachment 13, Appendix A.

A total of 26 soil samples (ERM 2014 PP2 ESA) were analysed for lead across the site from soil bores (ERM SVB01-06) and test pits and lead was detected in 11 samples (including the two exceedances). The concentrations that were detected below the HIL A ranged from 7 to 163 mg/kg.

Auditor's Opinion

The elevated concentrations of lead appear to be localised and not indicative of significant hotspots of contamination or widespread impacts. Overall, the concentrations of lead across the surface of the site are not considered likely to pose a risk to human health or the environment.

8.4 Validated Excavated Spoil

Soils noted to be impacted with petroleum hydrocarbons within excavated pits/trenches were excavated and stockpiled onsite for analytical testing and characterisation. A total of 28 stockpiles were generated during TEA works, with approximately 1031.5 m^3 of stockpiled soil tested (63 stockpile soil samples) for petroleum impact. All stockpiles were sampled and either used onsite below 1 m depth, if testing results were below relevant guidelines, or disposed offsite to landfill.

Approximately 199 m^3 was validated for reuse onsite below 1 m from surface.

Stockpiles reused onsite below 1 m were SP1N, SP1S, SP1E, SP1NE, SP1SE, SP1NW & SP1SW (combined volume 148 m^3), SP2 (40 m^3), SP4 (6 m^3), SP6 (2 m^3) and SP7 (3 m^3). These stockpiles exhibited low concentrations of residual TPH and BTEX with a maximum of 37 mg/kg of TPH C_6-C_9 (most <LOR) and a maximum of 750 mg/kg TPH C_{10}-C_{36}. The majority of BTEX results were <LOR with low concentrations of TEX detected in some samples with a maximum of 4.8 mg/kg of xylenes. Lead ranged from 3.4 to 170 mg/kg.

Auditor's Opinion

The validated soil appears to be suitable for placement below 1 m depth and is unlikely to pose a risk to human health or the environment.

8.5 Imported Fill

Approximately 1489 m^3 of quarried material from HBMI Leslievale Quarry was imported to the site during the TEA and used as backfill from a depth of at least 0.8 m to surface. The fill material was validated for TPH, BTEX and lead prior to being imported onto the site. Concentrations of TPH and BTEX were below the LOR and lead ranged from <LOR to 2.5 mg/kg. Concentrations of all analytes were below the adopted assessment criteria.

Pit 1 was re-excavated in 2007 by Coffey in response to detections of VOCs in groundwater. The first metre of excavated material was imported gravel fill which had been used to level the site during the validation works conducted in 2005. This material was stockpiled separately to the rest of the excavated material for later use as backfilling material. The rest of the excavated material was stockpiled as Stockpile 1 and then disposed offsite (Section 15.3).

Clay material was imported from Glen Park Quarry, Huonville. Two soil samples (Mat A & Mat B) were collected from two separate stockpiles within the quarry and submitted for laboratory analyses. An additional two soil samples (Sample C & Sample D) were collected from the same stockpiles for cobalt analysis. Photographs of the stockpiles were provided. All organic analytes were below the LOR with the exception of a maximum of 0.5 mg/kg of phenols which were not considered to be of concern. A maximum concentration of 180 mg/kg of cobalt was detected which exceeded the HIL A criterion of 100 mg/kg. The other three samples analysed for cobalt ranged from 20 to 51 mg/kg and were below the HIL A criterion. Cobalt was not considered to be of concern.

Auditor's Opinion

The imported materials were quarried products and analytical results were consistent with this and were not at concentrations that would pose a risk to human health or the environment. The materials were considered suitable for use as backfill.

9. EVALUATION OF GROUNDWATER ANALYTICAL RESULTS

9.1 Overview

A dissolved phase hydrocarbon plume was identified in groundwater and extends offsite to the north. The plume historically (as measured in December 2007) extended under two adjacent neighbouring properties to the north of the site (198 and 200 Macquarie Street) across Macquarie Street and beneath the property on the northern side of Macquarie Street (car dealership) and onto Barrack Street.

Groundwater remediation including multiple events of MPEAT and injection of ORC or chemical oxidants was undertaken between January 2008 and April 2010 as detailed in Table 6.1.

Twenty one rounds of GMEs have been undertaken at the site between 2002 and 2017.

9.2 Light Non-Aqueous Phase Liquid and Aesthetics

LNAPL has not been observed in any monitoring well during any GME at the site or surrounding area.

Historically, a slight sheen has been observed on groundwater removed from MW21 and odour has been reported in MW6, MW15, MW22, MW25, MW26 and MW27. In the September 2014 GME (the most recent GME of 17 wells), hydrocarbon odour was noted during sampling from MW6 and MW22 and no sheen was reported in any well. Only MW21 and MW26 were sampled in August 2017 and a slight hydrocarbon odour was noted in both wells.

Auditor's Opinion

Based on the information reviewed, LNAPL does not appear to be of concern at the site. Hydrocarbon odour is likely to be present in groundwater within the plume.

9.3 Petroleum Hydrocarbon Plume Extent & Status

The distribution of dissolved phase impact is considered to be driven by the geological and hydrogeological conditions beneath the site and surrounds. Groundwater is within a fractured rock aquifer (dolerite) at depths typically between approximately 2 and 7 m with an inferred flow direction to the north/northeast.

The extent of the plume has been delineated in the downgradient direction (north) by MW20 and MW23 which have consistently recorded concentrations of petroleum hydrocarbons below or close to the laboratory LOR. The extent of the petroleum hydrocarbon plume increased from approximately 2005 to around 2008, and then started to decrease from 2009 onwards. The plume extends beneath 200 and 198 Macquarie Street and probably also extends beneath the car dealership on the other side of Macquarie Street. The estimated northern (downgradient) extent of the plume for dissolved phase TPH (C_6-C_{36}) in December 2007 (near its peak) is shown on Attachment 5, Appendix A.

The plume geometry for each of the BTEX components and TPH fractions C_6-C_9 and C_{10}-C_{14} were each plotted in 24 time-intervals between January 2005 and September 2014 in the ERM 2014 SVME and GME, and these clearly show the expansion and retraction of the plume over this time. For comparison, the December 2007 and September 2014 plots for TPH C_6-C_9 are shown on Attachments 14a and 14b, Appendix A, illustrating the retraction of the plume.

MW21 is considered by the Auditor to provide data that is reasonably representative of the northern edge of the plume. The petroleum hydrocarbon data for MW21 is presented on Figure 9.1, below, showing a decreasing trend between 2005 and 2014.

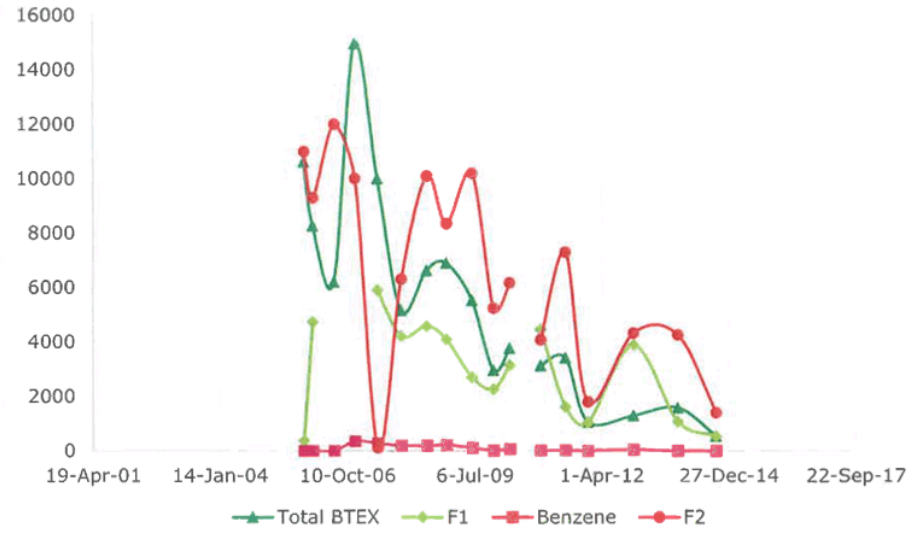


Figure 9.1: MW21 - Petroleum Hydrocarbon Concentrations (2005 - 2014) (µg/L)

The highest concentrations were detected in the northern corner of the site associated with the main tank farm which was inferred to be the primary source for groundwater impact on the site. The data for MW6 was considered by the Auditor to provide a reasonable representation of the highest level of contamination measured onsite. The petroleum hydrocarbon data for MW6 are presented on Figure 9.2, below, and are consistent with a decrease in concentration occurring after groundwater remediation in 2010.

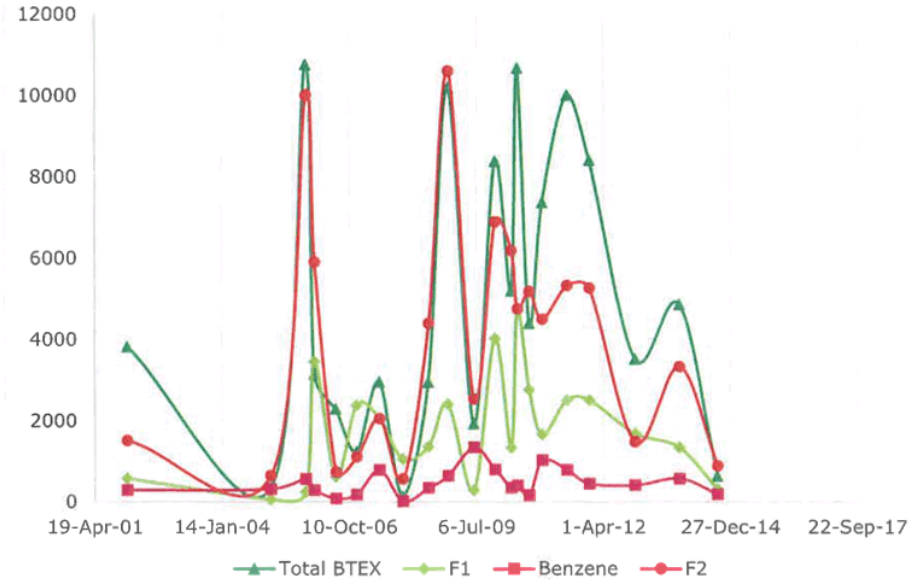


Figure 9.2: MW6 - Petroleum Hydrocarbon Concentrations (2002 - 2014) (µg/L)

Concentrations between May 2010 to present (after groundwater remediation) both on and offsite are shown on Attachments 15a and 15b, Appendix A, and are discussed further in Sections 9.4 to 9.6.

Golder also applied the Mann Kendall test to assess the significance of concentration changes over time for the period following the active groundwater remediation (i.e. monitoring events from May 2010 onwards), using the benzene, F1 and F2 concentrations. The analysis was applied to wells with data for at least four monitoring rounds representing the plume centre, across gradient plume edges (east and west) and the down gradient plume edge. The results are presented in Figure 9.3 below and are consistent with the overall retraction or stability of the plume.

Well ID	Location Relative to Main Area of Impacts	Benzene Trend Assessment	F1 Trend Assessment	F2 Trend Assessment
Onsite				
MW6	Onsite – Downgradient, plume centre	Stable	Decreasing	Prob. Decreasing
MW17	Onsite – Across gradient eastern plume edge	Decreasing	Decreasing	No Trend
MW22	Onsite – Downgradient, eastern plume edge	No Trend	Prob. Decreasing	Decreasing
MW26	Onsite – Downgradient, plume centre	No Trend	Stable*	No Trend
MW27	Onsite – Across gradient, western plume edge	Decreasing	Stable	Prob. Decreasing
Offsite				
MW18	Offsite – Downgradient, plume centre	Decreasing	Decreasing	Prob. Decreasing
MW21	Offsite – Downgradient, down gradient plume edge	Decreasing	Decreasing	Decreasing
MW24	Offsite - Downgradient, centre / eastern plume edge	Stable – Non-detect	Stable – Non-detect	Stable – Non-detect
MW25	Offsite – Across gradient eastern plume edge	Stable – Non-detect	No Trend	Stable – Non-detect

Notes: *TRH concentrations reported in the triplicate sample during the 2017 monitoring event were considered to have low reliability. When considering the higher of the primary and duplicate sample results (F1: 1.18 mg/L and F2:1.43 mg/L) a stable trend is reported for F1 and no trend for F2. When considering the low reliability F1 (3.5 mg/L) and F2 (0.41 mg/L) results, the analysis indicates a 'no trend' outcome, respectively.

Figure 9.3: Mann-Kendall Trend Analysis - Benzene, F1 and F2 (2010 to present) (Source: SCR)

Auditor's Opinion

Overall, based on the information reviewed, the extent of the plume has been adequately delineated and has been demonstrated to be decreasing or stable.

9.4 Petroleum Hydrocarbons Onsite

Concentrations of F1 or F2 exceeded the HSL A criteria for sand, 2-4 m, of 1,000 µg/L in MW6, MW22 and/or MW26 in at least one of the most recent three GMEs. Concentrations for onsite wells from 2010 to present are shown on Attachment 15a, Appendix A.

The maximum concentration was 3,500 µg/L of F1 and was measured in MW26 in August 2017. However, there was some variation between the duplicate samples for MW26 as illustrated in Figure 9.4 below (note: one of the duplicates is labelled MW21, the Auditor understands this is a duplicate from MW26 and was incorrectly labelled in the field). This probably represents some variability in the sample matrix which can occur when concentrations are elevated and samples are not homogenised or may have been collected from different positions in the water column.

Project: ExxonMobil CTC3 - TO2603 Hobart Depot

Table C2 - Duplicate Analysis RPDs
Project No. 1418584
Batches: EM1710484 / 667844

Sample ID			TO2603_MW26/5 0090817	TO2603_MW26/ 58030817	TO2603_MW21/ 58030817	RPDs	
Sample Type			Primary	Field Duplicate	Field Triplicate		
Date Sampled			03/08/2017	03/08/2017	03/08/2017		
Analyte	Units	LOR				Primary vs Duplicate	Primary vs Inter Duplicate
Total Petroleum Hydrocarbons							
C6 - C9 Fraction	µg/L	20	2580	2790	3700	8%	36%
C10 - C14 Fraction	µg/L	50	2450	2550	1100	19%	76%
C15 - C28 Fraction	µg/L	100	100	110	<100	10%	ND
C29 - C36 Fraction	µg/L	50	<50	<50	<100	ND	ND
C10 - C36 Fraction	µg/L	50	2550	3060	1100	18%	79%
Total Recoverable Hydrocarbons - NEPM 2013							
TRH C6-C10	µg/L	20	3160	3360	5600	6%	56%
C6 - C10 Fraction minus BTEX (F1)	µg/L	20	900	1180	3500	27%	118%
TRH >C10-C16	µg/L	100	1330	1590	600	18%	76%
>C10 - C16 Fraction minus Naphthalene (F2	µg/L	100	1160	1450	410	21%	95%
TRH >C16-C34	µg/L	100	<100	<100	<100	ND	ND
TRH >C34-C40	µg/L	100	<100	<100	<100	ND	ND
TRH >C10-C40	µg/L	100	1330	1590	-	18%	-
BTEXN							
Benzene	µg/L	1	114	120	120	5%	5%
Toluene	µg/L	2	18	20	24	11%	29%
Ethylbenzene	µg/L	2	554	528	500	5%	10%
meta- & para-Xylene	µg/L	2	1450	1390	1300	4%	11%
ortho-Xylene	µg/L	2	120	123	140	2%	15%
Total Xylene	µg/L	2	1570	1510	1400	4%	11%
Sum of BTEX	µg/L	1	2260	2180	-	4%	-
Naphthalene	µg/L	5	167	157	190	6%	13%

Legend
ND = Not Detected (RPDs not calculated if both primary and duplicate results are below LOR)
- = Not analysed/calculated

Figure 9.4: Duplicate Results for MW26 (Source: SCR)

With respect to the concentrations measured in the primary and duplicate samples from MW26, the Auditor has considered an average across the three samples of approximately 2,000 µg/L.

The concentrations of petroleum hydrocarbons in MW22 are presented in Figure 9.5 below.

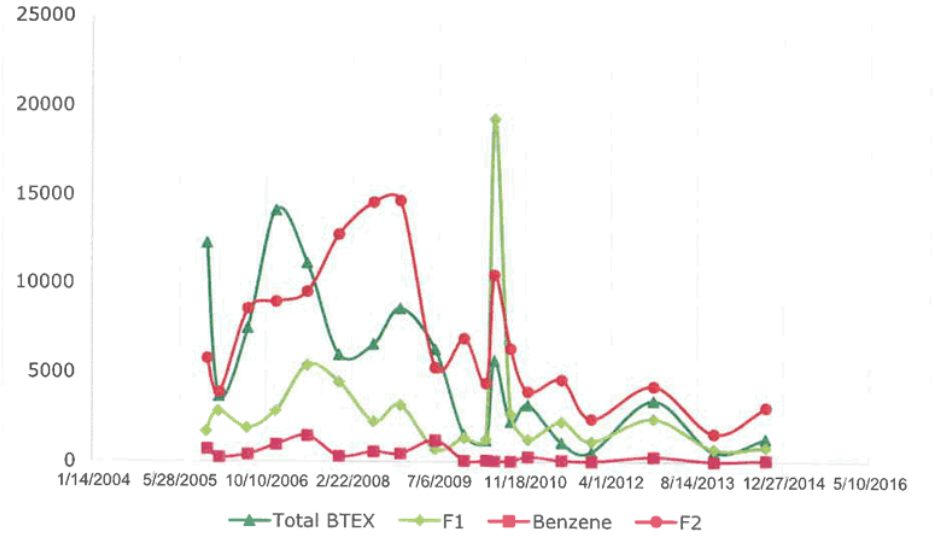


Figure 9.5: MW22 - Petroleum Hydrocarbon Concentrations (2005 - 2014) (µg/L)

MW22 indicates concentrations have been relatively stable since 2010. However, as per MW26, concentrations are still likely to exceed HSL A of 1,000 µg/L for F1 and F2.

Auditor's Opinion

Petroleum hydrocarbon concentrations in groundwater exceeding HSL A may remain in the northern corner of the site. There are several soil vapour wells installed in this portion of the site and the potential vapour intrusion risks are assessed further through the soil vapour assessment which is discussed in Section 10. The groundwater in the northern corner of the site is expected to be representative of groundwater migrating offsite towards (and beneath) 198 and 200 Macquarie Streets.

9.5 Possible Rebound

Only two wells were analysed in September 2017 (MW26 and MW21). MW21 is located offsite and is discussed in Section 9.6 below. MW26 is located onsite in the northern corner of the site and concentrations of petroleum hydrocarbons in MW26 from the GMEs after completion of groundwater remediation (August 2010) to August 2017 are presented in Figure 9.6, below. This shows a significant increase in concentrations of petroleum hydrocarbons between the two consecutive rounds undertaken August 2014 and August 2017 which indicates possible rebound of contaminant concentrations in groundwater following the completion of groundwater remediation in 2010. There is possibly also some evidence of this shown offsite in MW21 which indicates conditions appear to have "levelled out" between 2014 and 2017 rather than the overall decreasing trend that had previously been seen between April 2010 and September 2014.

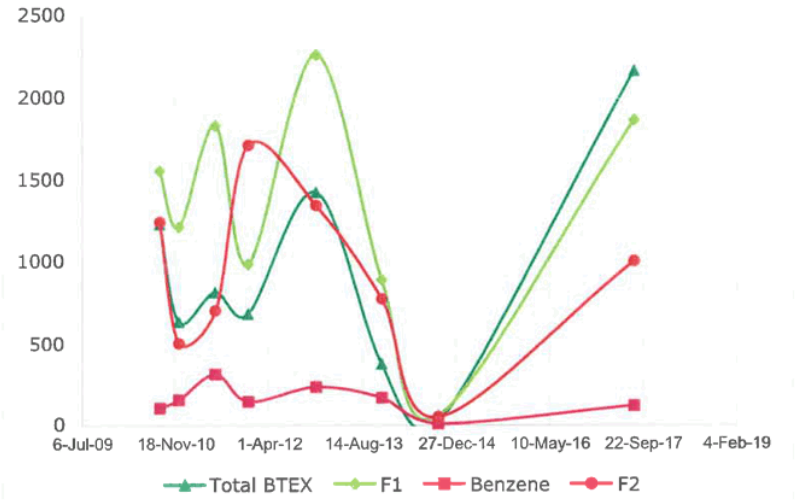


Figure 9.6: MW26 - Petroleum Hydrocarbon Concentrations (Post Groundwater Remediation) (April 2010 – August 2017) (µg/L)

Auditor's Opinion

The elevated concentrations in MW26 have been taken into consideration by the Auditor when drawing conclusions from the data and assessing the risk posed by conditions in this portion of the site.

9.6 Petroleum Hydrocarbons Offsite

Concentrations of petroleum hydrocarbons were reported below the commercial and residential HSLs in the offsite monitoring wells except for F2 in well MW21. MW21 is located north of the site on Macquarie Street and recorded a F2 concentration of 1,050 µg/L in the latest sampling event (August 2017). The result is below the commercial HSL D of 6,000 µg/L. The offsite land use in the area is currently road, small businesses and car dealership. The concentration is marginally above the residential HSL A of 1,000 µg/L, which is a permissible 'as of right' land use under the zoning for the area. The data for MW21 between 2005 and 2017 is shown in Figure 9.7, below.

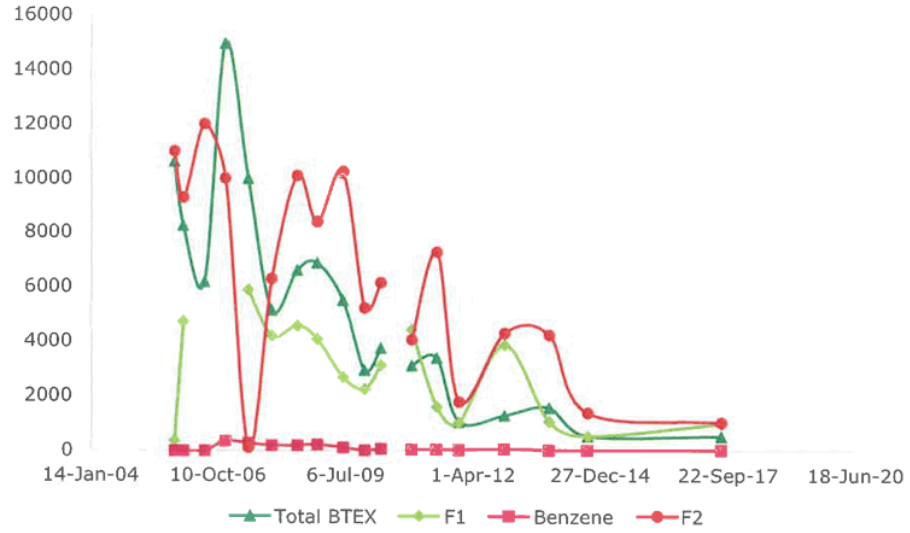


Figure 9.7: MW21 - Petroleum Hydrocarbon Concentrations (2005 - 2017) (µg/L)

The trend analysis indicates a decreasing trend, suggesting the concentrations are declining or stable.

There is no groundwater data directly beneath 198 and 200 Macquarie Street. As discussed in Section 9.3, groundwater in the northern corner of the site is expected to be representative of the groundwater migrating offsite towards (and beneath) 198 and 200 Macquarie Streets and includes concentrations exceeding HSL A. MW25 and MW18 are considered to be wells located near the downgradient boundaries of these properties and are likely representative of conditions leaving these properties. These wells have exhibited detectable concentrations of TPH and BTEX in the seven GMEs since May 2010. Detections have exceeded HSL A for some rounds in MW18 and possible rebound may have occurred as per MW26. It is also noted that this groundwater has been known to enter the basement at 198 Macquarie Street after high rainfall events.

Auditor's Opinion

The risk posed both on and offsite at 198 and 200 Macquarie Street by impacted groundwater and soil vapour remaining in the northern portion of the site and flowing beneath and potentially seeping into basement structures is assessed in Section 13.1 based on the conditions encountered in the northern portion of the site, which are expected to represent the 'worst' conditions onsite.

The risk to 'as of right' uses for other properties within the plume are considered low and acceptable based on the data reviewed.

There is a potential risk if groundwater is abstracted for beneficial reuse. However, this is considered unlikely to occur as discussed in Section 13.4.

Also, if groundwater were to ingress to a basement, the Auditor notes there may be petroleum hydrocarbon odour based on observations reported during groundwater sampling.

9.7 Lead

Concentrations of lead in groundwater were <1 µg/L in all of the most recent groundwater samples collected from each well with the exception of 1 µg/L detected in MW16 in 2014.

Auditor's Opinion

Lead does not appear to be present in groundwater at concentrations of concern.

10. EVALUATION OF SOIL VAPOUR RESULTS

10.1 Overview

Nineteen soil vapour monitoring wells have been installed at and around the site during the assessment works. The soil vapour monitoring events (for VOCs which included volatile petroleum hydrocarbons) are summarised in Table 10.1. Sample locations are shown on Figures 10.1 and 10.2 below and Attachments 7, 9 and 11, Appendix A.

Table 10.1: Summary of Soil Vapour Results (µg/m³)

Well Depth Geology Installed	08/2006 Coffey Tubes Leeder	04/2007 Coffey Tubes Leeder	11/2008 Coffey Tubes Leeder	04/2010 Coffey Tubes Leeder	09/2010 Coffey Tubes Leeder	07/2014 ERM Summa ALS	09/2014 ERM Summa ALS	08/2017 Golder Summa ALS
ERM SV01 2.8 m Rock	-	-	-	-	-	<LOR O_2 9.94%	<LOR O_2 16.9%	<LOR O_2 9.81% He <LOR
ERM SV02 2.8 m Rock	-	-	-	-	-	<LOR O_2 12.4%	<LOR O_2 17.7%	<LOR O_2 13.4% He <LOR
ERM SV04 2.8 m Rock	-	-	-	-	-	<LOR O_2 15.6%	<LOR O_2 17.2%	<LOR O_2 16.4% He <LOR
ERM SV05 2.0 m Fill	-	-	-	-	-	<LOR O_2 16.8%	<LOR O_2 18.4%	<LOR O_2 17.1% He <LOR
ERM SV06 2.8 m Rock	-	-	-	-	-	<LOR O_2 14.3%	<LOR O_2 16.1%	B 4.1 T 1.1 O_2 10.9% He <LOR
SV01S 1 m Clay	$CHBrCl_2$ 6 T 10 TCM 100 X 10	CCl_2F_2 5	-	Al EC5-6 300 Al EC6-8 O_2 29% He <LOR IPA <LOR (D or S)	Al EC5-6 2,900 Al EC6-8 160 O_2 26% He 0.002% IPA <LOR	-	-	-
SV01D 1.9 m Rock	$CHCl_3$ 47 PCE 5	CCl_2F_2 5	-	-	<LOR O_2 21% He 0.002% IPA 2,900	-	-	-
SV02S 1.0 m Rock	T 6 $CHCl_3$ 43 X 13	CCl_2F_2 5	-	TCM 25 µg/L O_2 41% He <LOR IPA <LOR (D or S)	-	-	-	-
SV02D 2.0 m Rock	-	PCE 5	X 13 EC6-8 300		Al EC6-8 160 O_2 23% He <LOR IPA <LOR	-	-	-
SV03S 1.0 m Clay	PCE 1,400 $CHCl_3$ 51	-	-		Water	-	-	-
SV03D 1.9 m Rock	PCE 13,000 $CHCl_3$ 240	PCE 17	Al EC6-8 100	Al EC6-8 100 O_2 20% He <LOR IPA <LOR	Water	-	-	-
SV04S 1.0 m Fill	PCE 27 $CHCl_3$ 12	$CHCl_3$ 9	-	<LOR IPA <LOR		-	-	-
SV04D 1.9 m Fill	PCE 170 $CHCl_3$ 21	$CHCl_3$ 24	-			-	-	-
SV05 3.4 m Rock	-	-	B 1,100 $C_{10}H_{14}$ 640 E 820 X 170,000 C_9H_{12} 2010 T 4300 124 TMB 42,000 135 TMB 70,000 ArEC5-16 311,900 Al EC6-8 5,300,000 Al EC8-10 1,500,000 Al EC10-12 360,000	Cymene 1,300 124 TMB 770 135 TMB 13,000 X 1,000 Ar EC9-10 25,000 Ar EC10-12 60,000 Ar EC12-16 4,700 Al EC5-6 1,400,000 Al EC6-8 3,000,000 Al EC8-10 1,600,000 Al EC10-12 590,000 Al EC12-16 27,000 O_2 63%	Water	-	-	-

Well Depth Geology installed	08/2006 Coffey Tubes Leeder	04/2007 Coffey Tubes Leeder	11/2008 Coffey Tubes Leeder	04/2010 Coffey Tubes Leeder	09/2010 Coffey Tubes Leeder	07/2014 ERM Summa ALS	09/2014 ERM Summa ALS	08/2017 Golder Summa ALS
			Al EC12-16 47,000	He <LOR IPA <LOR				
SV06 3.4 m Rock	-	-	B 100 E 37 X 370 Styrene 16 T 360 124 TMB 17 135 TMB 48 Al EC6-8 140,000 Ar EC5-7 100 Al EC7-9 400 Al EC9-10 600 Al EC10-12 300 Al EC8-10 100,000 Al EC10-12 63,000 Al EC12-16 16,000		Water	-	-	-
SV07 3.4 m Rock	-	-	B 500 $C_{10}H_{14}$ 160 E 590 Cymene 1,300 T 2,700 124 TMB 2,800 135 TMB 13,000 X 16,000 Ar EC7-9 2,700 Al EC9-10 51,000 Al EC10-12 80,000 Al EC12-16 2,300 Al EC6-8 2,400,000 Al EC8-10 2,000,000 Al EC10-12 750,000 Al EC12-16 78,000	124 TMB 2,200 135 TMB 9,700 X 6,200 Ar EC9-10 29,000 Ar EC5-6 170,000 Al EC6-8 1,600,000 Al EC8-10 1,900,000 Al EC10-12 720,000 Al EC12-16 38,000 O_2 0.8% He <LOR IPA <LOR	Water	-	-	-
SV08 3.4 m Clay	-	-	Al EC6-8 100	-	Water	<LOR O_2 16.6%	<LOR O_2 18.7%	
SV09 3.4 m Rock	-	-	B 230 Cymene 180 T 510 X 11,00 124 TMB 5,600 135 TMB 2,200 Ar EC9-10 61,000 Al EC10-12 84,000 Ar EC12-16 Al EC6-8 1,400,000 Al EC8-10 430,000 Al EC10-12 160,000 Al EC12-16 2,000	-	Water	<LOR O_2 9.42%	<LOR O_2 14.0%	-
SV10 3.4 m Rock	-	-	B 1,800 T 6,400 X 17,000 C_9H_{12} 600 Propylbenzene 200 124 TMB 730 135 TMB 16,000 Ar EC5-7 1,800 Al EC7-9 6,400 Al EC9-10 47,000 Al EC10-12 65,000 Al EC12-16 3,100 Al EC6-8 4,900,00 Al EC8-10 990,000 Al EC10-12 270,000 Al EC12-16 20,000	-	Water	-	-	-
SV11 3.4 m Rock	-	-	N 12 T 94 X 16	-	-	-	-	-
SV12 1.8 m Rock	-	-	PCE 11	-	-	-	-	-
SV13 1.8 m Rock	-	-	Al EC 200 Al EC8-10 200 Al EC10-12 200 EC12-16 500	O_2 20% He <LOR IPA ND	Al EC10-12 110 O_2 18% He <LOR IPA <LOR	-	-	-
SV14 1.8 m Rock	-	-	Al EC6-8 500 Al EC8-10 300	T 11 E 17 X 140 Ar EC9-10 200 Al EC5-6 900 Al EC6-8 7,500	Al EC5-6 140 Al EC6-8 2,200 Al EC8-10 720 O_2 20% He 0.001% IPA <LOR	<LOR O_2 19.7%	<LOR O_2 20.2%	-

Well Depth Geology installed	08/2006 Coffey Tubes Leeder	04/2007 Coffey Tubes Leeder	11/2008 Coffey Tubes Leeder	04/2010 Coffey Tubes Leeder	09/2010 Coffey Tubes Leeder	07/2014 ERM Summa ALS	09/2014 ERM Summa ALS	08/2017 Golder Summa ALS
				Al EC8-10 1,800 **Al EC10-12 100** O_2 20% He <LOR IPA <LOR				

Notes: - not sampled; **BOLD** = concentration above the LOR; $CHBrCl_2$ Bromodichloromethane; $CHCl_3$ Trichloromethane or chloroform; PCE Tetrachloroethylene; CCl_2F_2 Dichlorodifluoromethane; $C_{10}H_{14}$ Butylbenzene; C_9H_{12} Isopropylbenzene; Cymene Isopropyltoluene; B Benzene; T Toluene, E ethylbenzene; X Xylenes, Al aliphatic, Ar aromatic; EC Equivalent Carbon; He helium; IPA Isopropylalcohol; O_2 Oxygen; LOR Limit of Reporting.

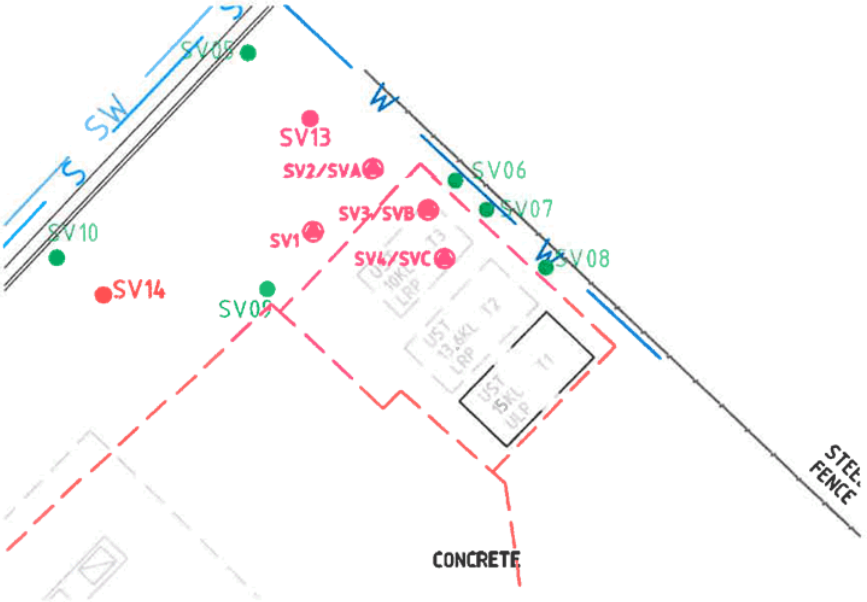


Figure 10.1: Soil Vapour Sample Locations (up to 2009) (Source: Coffey 2009 Soil Vapour Report (pink = original Coffey nested wells))

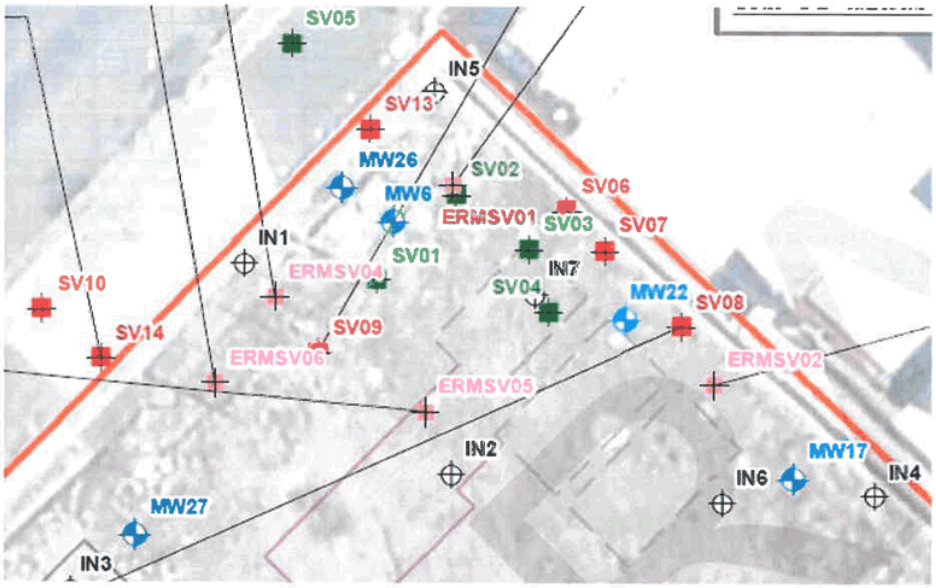


Figure 10.2: Soil Vapour Samples (Source: SCR (green = original Coffey nested wells))

10.2 BTEXN

Benzene, toluene, ethyl benzene, xylenes and/or naphthalene were detected in SV2 (deep), SV06, SV07, V09, SV05, SV10 and SV11 in November 2008, mostly as xylenes. All concentrations were below the relevant HSL A criteria with the exception of the maximum concentration of benzene of 1,100 µg/m³ which was detected in in SV05 and slightly exceeded the HSL A criterion of 1,000 µg/m³ (assuming at depth of 0 to 1 m, which may be relevant if a basement were constructed). The concentration was less than the HSL A criterion of 6,000 µg/m³ for a depth of 2 to 4 m (screen is at 3.3 m).

BTEXN (mostly as xylenes) were detected in SV05, SV07 and SV14 all below HSL A in April 2010. This suggests concentrations reduced post remediation.

BTEXN were not detected in the ERM bores or SV08, SV09 and SV14 in July and September 2014

BTEXN was not detected in the ERM bores with the exception of toluene (4.1 µg/m³) in SV06 in August 2017, well below the HSL A criterion of 1,300,000 µg/m³.

Auditor's Opinion

Overall, BTEXN does not appear be present in soil vapour at concentrations that pose a risk to human health. The data suggests concentrations have reduced over time in response to soil and groundwater remediation or natural attenuation.

10.3 Volatile TPH

Elevated concentrations of F1 (measured as C_6-C_{10}) exceeded the HSL A in SV05, SV07, SV09 and SV10 (max 6,800 mg/m³ of F1 in SV05) in November 2008. Of these, only SV05 and SV07 were analysed in April 2010 (max 4,600 mg/m³ in SV05). These results were an order of magnitude greater than the most conservative HSL A of 180 mg/m³ or HSL D of 680 mg/m³ for F1 for a depth of 0 to 1 m.

These wells were all located in the northern portion of the site including in the driveway area and between the site and 200 Macquarie Street. It is noted that MPEAT and injection events were being undertaken in October 2009 and April 2010 and were likely to have temporarily increased volatilisation to soil vapour. A similar increase was observed in the ambient air sampling discussed in Section 11. These wells were not subsequently sampled. However, F1 and F2 were

not detected in the ERM soil vapour wells (which were installed to represent data in the northern portion of the site) or SV08, SV09 and SV14 in July and September 2014 or August 2017.

Auditor's Opinion

Overall, volatile TPH does not appear be present in soil vapour at concentrations that pose a risk to human health. The data suggests concentrations have reduced over time in response to soil and groundwater remediation or attenuation which is consistent with the decline in groundwater concentrations in MW22 (northern portion of the site) post remediation shown in Figure 10.3 between 2010 and 2014.

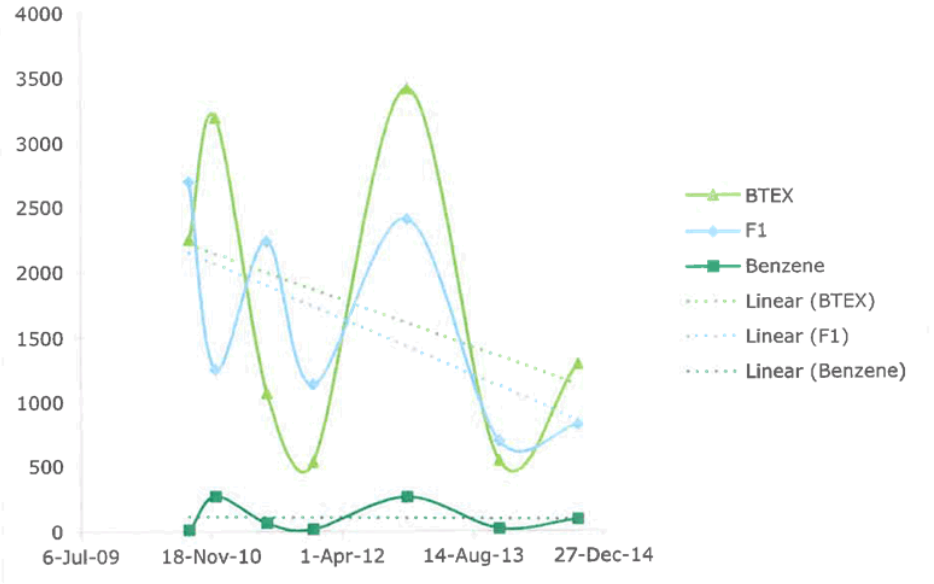


Figure 10.3: MW22 - Petroleum Hydrocarbon Concentrations in Groundwater (F1, Benzene & Total BTEX) Post Groundwater Remediation (August 2010 to September 2014) (µg/L)

10.4 Trimethylbenzene

TMB was not included in the analytical suite for groundwater. However, TMB has been detected in soil vapour at high concentrations with a maximum of 112,000 µg/m³ measured in SV05 (in the northern portion of the site) in November 2008 which had decreased to 13,770 µg/m³ in the next round of monitoring in April 2010.

The USEPA RSL for TMB in Residential Air is 63 µg/m³. This results in a soil vapour criterion of 12,600 µg/m³ when an attenuation factor of 200 is applied as described in Section 7.3. The 2008 result significantly exceeded, and the 2010 concentration slightly exceeded, this concentration.

However, the most recent soil vapour data (July 2014 post groundwater remediation in 2010) were below the LOR (<240 µg/m³) in the ERM wells installed in the northern portion of the site.

The SCR states *"the decrease in TMBs in soil vapour is consistent with the decreases observed for other analytes in soil vapour, including TRH C_6-C_{10} Fraction Less BTEX (F1) and TRH >C_{10}-C_{16} Fraction Less Naphthalene (F2). The decrease in concentrations in soil vapour across the site coincides with the active groundwater remediation, with a final MPE event completed in April 2010. Therefore, although TMBs were not analysed in the most recent sampling round (August 2017), it is considered that the assessment of risks posed by TMBs in soil vapour is in line with the recent assessment of soil vapour at the site, and the vapour intrusion risk is considered to be low and acceptable..."*

Auditor's Opinion

There is sufficient information to conclude that the risk posed by TMBs in soil vapour is low and acceptable.

10.5 Tetrachloroethene

Tetrachloroethene (PCE) was detected in soil vapour in the first round of soil vapour monitoring (August 2006) within the northern portion of the site (SV3 shallow and deep) at concentrations of 1,400 and 13,000 µg/m^3, respectively, exceeding the interim HIL A for residential land use of 2,000 µg/m^3 in the deeper sample. Lower concentrations were detected in SV1 (adjacent to the former tank pit) (deep only) at 5 µg/m^3 and SV4 (in the former tank pit) (shallow and deep) at 27 µg/m^3 and 190 µg/m^3, all below the interim HIL A. PCE was not detected in SV2 (shallow and deep) (near SV1).

PCE was detected again at significantly lower concentrations in April 2007 in SV3 (shallow and deep) at 17 and 15 µg/m^3, respectively, and SV2 (deep only) at 5 µg/m^3. Both these wells were located on the northern corner of the site. PCE was not detected in November 2008 with the exception of a low concentration offsite downgradient in Macquarie Street (SV12) and was not detected in April 2010 (and was not included in subsequent monitoring suites).

PCE was not analysed in groundwater for all rounds or all wells including the GME in 2006 when concentrations of PCE in soil vapour were high. PCE was analysed in MW9 in 2002 and in MW9, MW12, MW19, MW21 and MW25 in November 2005, and was below the LOR. Most of these wells were located in areas of the site away from main areas of hydrocarbon impact and the soil vapour impact detected in the north with the exception of MW21 which was located on the northern fringe of the plume and MW25 located on the other side of 198 Macquarie Street and both of these wells also exhibited TPH impact.

PCE was analysed again in MW6, MW17, MW18, MW21, MW22 and MW25 in December 2007 and was below the LOR. MW6, MW17 and MW21 were located within the northern portion of the site and exhibited TPH impact. MW18 and MW21 were offsite in Macquarie Street. Similar results were obtained in June 2008, June 2009, December 2009 and December 2010 then PCE was not included in the analytical suite in the subsequent GMEs until November 2013 (MW1, MW12, MW15, MW16, MW17, MW18, MW19, MW20, MW23, MW24 and MW28).

PCE (low concentrations of 0.63 µg/L and 0.19 µg/L compared to ADWG of 50 µg/L) was only detected in November 2013 in MW12 located on the central portion of the northwest boundary adjacent Macquarie Street and MW23 offsite in Barrack Street to the north, respectively. However, PCE was not included in the analytical suite for these wells in any of the previous or subsequent GMEs for comparison (with the exception of MW12 in 2005 and VOCs were <LOR).

Auditor's Opinion

The source of PCE in groundwater and soil vapour was not clear. However, it does not appear to be associated with the TPH impact and has been detected both on and offsite. Based on the data set reviewed, PCE appears to no longer be present and may have been associated with offsite sources such as inappropriate disposal of a degreaser in the vicinity of the site. It is considered by the Auditor that PCE has been adequately assessed through various phases of the investigation and appears unlikely to pose a risk to human health either on or offsite.

10.6 Trihalomethanes

Concentrations of trihalomethanes including chloroform (maximum of 30 µg/L in MW19 in February 2005, below drinking water criterion of 250 µg/L) and to a lesser extent bromodichloromethane (max 0.23 µg/L in MW24 in November 2013, below drinking water criterion) and dichlorodifluoromethane (5 µg/L) have been detected in groundwater both on and offsite in some rounds (including MW1, MW12, MW15, MW16, MW17, MW18, MW19, MW20, MW23, MW24 and MW28 in 2013). The maximum concentration in the most recent round, where included in the analytical suite, was 10.4 µg/L in MW1 in November 2013. The risk of this posing a risk to human health via volatilisation into soil vapour has been considered below.

Auditor's Opinion

Drinking water criteria are protective of all exposure pathways including inhalation. Therefore, these results do not indicate a risk to human health from soil vapour. The detection of Trihalomethanes appears to be associated with a diffuse offsite source (such as leaks or spills from potable water containing disinfection by-products).

Chloroform was detected in soil vapour at a maximum of 240 µg/m^3 in SV3 (deep) in August 2006 and was not detected in November 2008 or subsequent rounds.

It is considered that bromodichloromethane and chloroform have been adequately assessed through various phases of the investigation and are unlikely to pose a risk to human health either on or offsite.

11. OFFSITE AMBIENT AIR QUALITY MONITORING

The basement structures in 198 and 200 Macquarie Street were screened with a PID and LEL meter between April 2005 and June 2011. The results are summarised in Figure 11.1 below.

Address	Location	Date	Time	Duration (mins)	Maximum VOC Reading (ppm)	Maximum VOC Reading (% LEL)	Oxygen Level (%)	Comments / Water Level Observations
198 Macquarie St	Basement Entrance	26/04/2005	4.39pm	5	9.3	5	20.9	Some mould & damp patches
	Basement Floor	26/04/2005	4.34pm	5	6.2	4	20.9	no standing water
	Above Sump Pump	26/04/2005	4.30pm	5	6.2	4	20.9	15cm water in sump, sheen
	Basement - General	26/04/2005	4.40pm	10	5.3	7	20.9	Some methane vacuum present
198 Macquarie St	Basement Entrance	28/6/2005	4.10pm	5	2.1	0	20.9	Basement basically dry
	Basement Floor	28/6/2005	4.16pm	5	0.2	0	20.9	no standing water
	Above Sump Pump	28/6/2005	4.20pm	5	0.1	0	20.9	18cm water in sump, sheen
	Basement - General	28/6/2005	4.30pm	10	0.3	0	20.9	no obvious vapours
198 Macquarie St	Basement Entrance	26/10/2005	4.20pm	5	0	0	20.9	Basement floor covered 1-2cm in water
	Basement Floor	26/10/2005	4.14pm	5	0.3	0	20.9	no obvious vapours
	Above Sump Pump	26/10/2005	4.10pm	5	0.3	0	20.9	standing water is covered with a sheeny film
	Basement - General	26/10/2005	4.40pm	10	0.4	0	20.9	sump completely filled and overflowing
198 Macquarie St	Basement Entrance	9/1/2006	2.20pm	5	0.2	0	Oxygen meter	Floor damp but no standing water, water in
	Basement Floor	10/1/2006	2.06pm	5	0.6	0	not functioning	sump, no obvious vapours
	Above Sump Pump	11/01/2006	2.12pm	5	0.5	0	properly	-
	Basement - General	10/01/2006	2.14pm	10	0.3	0	-	-
200 Macquarie St	Basement Entrance	28/06/2006	6.32am	5	0	0	20.9	Basement Dry
	Basement Floor	28/06/2006	6.36am	5	0	0	20.9	no obvious vapours
	Adjacent Room	28/06/2006	6.40am	5	0	0	20.9	
	Basement - General	28/06/2006	6.45am	10	0	0	20.9	
198 Macquarie St	Basement Entrance	30/06/2006	6.30am	5	0	0	20.9	Basement Dry
	Basement Floor	30/06/2006	6.36am	5	0	0	20.9	no obvious vapours.
	Above Sump Pump	30/06/2006	6.40am	5	0.3	0	20.9	Sump Dry
	Basement - General	30/06/2006	6.45am	10	0	0	20.9	
200 Macquarie St	Basement Entrance	6/12/2006	6.30am	5	0	0	20.9	Basement Dry
	Basement Floor	6/12/2006	6.36am	5	0	0	20.9	no odours
	Above Sump Pump	6/12/2006	6.40am	5	0	0	20.9	
	Basement - General	6/12/2006	6.45am	10	0	0	20.9	
198 Macquarie St	Basement Entrance	6/12/2006	6.30am	5	0	0	20.9	Basement Dry
	Basement Floor	6/12/2006	6.36am	5	0	0	20.9	no odours
	Above Sump Pump	6/12/2006	6.40am	5	0	0	20.9	
	Basement - General	6/12/2006	6.45am	10	0	0	20.9	
198 Macquarie St	Basement Entrance	4/05/2007	9.45am	5	0	0	20.9	Basement Dry
	Basement Steps	4/05/2007	9.50am	5	0	0	20.9	no odours
	Basement - General	4/05/2007	9.55am	5	0	0	20.9	
200 Macquarie St	Basement Entrance	4/05/2007	9.45am	5	0	0	20.9	Basement Dry
	Basement Steps	4/05/2007	9.50am	5	0	0	20.9	no odours
	Basement - General	4/05/2007	9.55am	5	0	0	20.9	
198 Macquarie St	Basement Entrance	24/05/2008	14:08	1	0	0	20.9	Basement Dry
	Basement Steps	24/05/2008	14:10	5	PID not functioning properly	0	20.9	no odours
	Basement - General	24/05/2008	14:15	5		0	20.9	
200 Macquarie St	Basement - General	24/05/2008	No monitoring was conducted as VOC samples were collected by lowering charcoal tubes through a hole, therefore field personal were not required to enter the basement.					
198 Macquarie St	Basement Entrance	27/11/2008	14:05	1	0	0	20.9	No odour at entrance.
	Basement Steps	27/11/2008	14:10	5	0	0	20.9	
	Basement General	27/11/2008	14:15	5	0	0	20.9	Dry, no odour.
200 Macquarie St	Basement Entrance	27/11/2008	14:25	1	0	0	20.9	Dry, no odours.
	Basement Steps	27/11/2008	14:30	5	0	0	20.9	
	Basement General	27/11/2008	14:35	5	0	0	20.9	
198 Macquarie St	Basement Entrance	28/11/2008	14:55	1	0	0	20.9	Dry, musty smell, no HCO.
	Basement Steps	28/11/2008	14:50	5	0	0	20.9	
	Basement General	28/11/2008	14:35	5	0	0	20.9	
200 Macquarie St	Basement Entrance	28/11/2008	14:40	5	0	0	20.9	Dry, no HCO.
	Basement Floor	28/11/2008	14:45	5	0	0	20.9	
	Basement General	28/11/2008	14:50	5	0	0	20.9	
198 Macquarie St	Basement Steps	3/12/2009	8:35	5	100	0	20.6	
	Basement Steps	3/12/2009	9:30	5	88.8	0	20.7	
	Basement Steps	4/12/2009	14:50	5	100	0	20.7	
198 Macquarie St	Basement Steps	27/05/2010	8:15	5	184	0	20.9	
	Basement Steps	28/09/2010	8:15	5	76	0	20.9	
200 Macquarie St	Basement - General	6/12/2006	No monitoring was conducted as VOC samples were collected by lowering charcoal tubes through a hole, therefore field personal were not required to enter the basement.					
198 Macquarie St	Basement Steps	6/12/2010	13:00	5	0	0	20.9	
	Basement Steps	6/12/2010	11:20	5	0	0	20.9	
198 Macquarie St	Basement Steps	23/06/2011	9:47	5	201	0	20.9	No detectable odours.
200 Macquarie St	Basement - General	23/06/2011	No monitoring was conducted as VOC samples were collected by lowering charcoal tubes through a hole, therefore field personal were not required to enter the basement.					

Notes
LEL = Lower Explosive Limit
VOC = Volatile Organic Compounds
ppm = Parts per Million

Figure 11.1: Summary of Offsite Basement Screening (Source: Coffey Interim GME and Air Sampling 2011)

Indoor air quality assessments were conducted in the basements in January 2006, June 2006, December 2007, June 2008, December 2009, May 2010, December 2010 and June 2011. Two samples were collected from no. 198 (a primary and a duplicate) and one sample from no. 200. A blank sample was also analysed in most rounds. Air within each basement was sampled for the presence of VOCs using the Radiello passive sampling system or a universal air sampler and charcoal tubes (early rounds). The results are summarised in Table 11.1.

Table 11.1: Summary of Offsite Indoor Air Sampling and Initial Screen Against RSLs

Sampling Date	Summary of Results	Remediation timeline	PID Detections (ppm)	Comments
January 2006	BTEX <10 µg in all 4 samples (the whirly bird at 198 was disabled on 22 December 2005 to allow vapours to accumulate and sampling was conducted 9 January 2006)	Tank excavation in May-October 2005	0.2-3.8	-
June 2006	BTEX <10 µg in all 4 samples		0-0.3	-

Sampling Date	Summary of Results	Remediation timeline	PID Detections (ppm)	Comments
5 & 6 December 2006	BTEX <10 µg (results for 1 sample only provided. Report states samples collected in each basement and results less than LOR) in all 4 samples		0	-
July 2007	All results less than LOR except for: Benzene in 1 sample and its duplicate (1.3 µg/m³ in no. 200) Cyclohexane in 1 sample and its duplicate (1.8 µg/m³ in no. 200) Toluene in all 3 samples (4.4 µg/m³ in no. 200 and 1.4 µg/m³ no. 198)	Re-excavation and offsite disposal of material in Pit 1 April or May 2007		All detections less than USEPA residential air criteria
December 2007	All results less than LOR except for: Toluene in all 3 samples (3.9 µg/m³ in no. 200 and 2.6 µg/m³ no. 198) Xylenes in 1 sample (3.0 µg/m³ in no. 200)	January and May 2008 MPEAT events	0	All detections less than USEPA residential air criteria
June 2008	All results less than LOR		0	-
November 2008	All results less than LOR except for: Toluene in 1 sample (3.7 µg/m³ in no. 200)	September/October 2008 injection even	0	All detections less than USEPA residential air criteria
April 2009	All results less than LOR except for: Benzene in 1 sample (1.6 µg/m³ in no. 200) Ethyl benzene in 1 sample (1.2 µg/m³ in no. 200) Toluene in 1 sample (6.4 µg/m³ in no. 200) Xylenes in 1 sample (5.7 µg/m³ in no. 200)	February and March 2009 injection events	0	All detections less than USEPA residential air criteria
December 2009	All results less than LOR except for: Benzene in 1 sample (1.0 µg/m³ in no. 200) Ethyl benzene in 1 sample (1.0 µg/m³ in no. 200) n-hexane in 1 sample (1.5 µg/m³ in no. 198) Isooctane in 2 samples from no. 198 (max 2.0 µg/m³) 2-methyl pentane in 1 sample (1.8 µg/m³ in no. 198) 3-methyl pentane in 1 sample (1.0 µg/m³ in no. 198) Toluene in all 3 samples (max 1.1 µg/m³ in no. 198 and 4.0 µg/m³ in no. 200) Xylenes in 1 sample (3.5 µg/m³ in no. 200)	October 2009 MPEAT and injection events	High PID (see Figure 11) in basement of 198. No reading collected from 200	All detections less than USEPA residential air criteria
May 2010	All results less than LOR except for:	April 2010 MPEAT and injection event	High PID (see Figure 11) in	Benzene and ethyl benzene

Sampling Date	Summary of Results	Remediation timeline	PID Detections (ppm)	Comments
	Benzene in 1 sample (2.7 µg/m³ in no. 200) (exceeds residential and industrial air criteria but not when a factor of 10 is applied for attenuation) Cyclohexane in 1 sample (2.9 µg/m³ in no. 200) Ethyl benzene in 1 sample (1.5 µg/m³ in no. 200) n-Heptane in 1 sample (1.5 µg/m³ in no. 200) n-Hexane in 1 sample (1.7 µg/m³ in no. 200) 2-methyl pentane in 1 sample (2.8 µg/m³ in no. 200) 3-methyl pentane in 1 sample (1.0 µg/m³ in no. 200) Toluene in all 3 samples (max 7.1 µg/m³ in no. 200 and 1.9 µg/m³ in no. 198) Xylenes in all 3 sample (max 8.5 µg/m³ in no. 200 and 3.1 µg/m³ in no. 198)		basement of 198. No reading collected from 200	less than USEPA Residential x 10 and Industrial Air Criteria x 10 Other detections less than USEPA Residential Air criteria
December 2010	All results less than LOR		<LOR	-
June 2011	All results less than LOR except for: Toluene in 1 sample (3.7 µg/m³ in no. 200) Xylenes in 1 sample (1.0 µg/m³ in no. 198)		High PID (see Figure 11) in basement of 198. No reading collected from 200	All detections less than USEPA residential air criteria

The maximum concentrations detected at 198 and 200 Macquarie Streets are also compared against the range of criteria listed in Section 7.4, as summarised in Table 11.2.

Table 11.2: Maximum Offsite Indoor Air Sampling Results – Compared Against Range of Criteria Considered (µg/m³)

Analyte	Coffey Investigation Levels	AirToxics 2011	WHO 2000	WHO 2010	USEPA RSL (May 2019)	MOECC 2012	TCEQ 2016	OEHHA 2019	OEHHA 2016	USEPA IRIS	NEPM HSL Calculations	Max. Conc. 198 Macquarie St	Max. Conc. 200 Macquarie St
Benzene	9.8	9.8	1.7	1.7	**3.6**	0.45	4.5		3	1.3 - 4.5	1.7		**2.7**
Toluene	260	386	260 1wk		**5200**	2000 24h	1200	420	300	5000	5000	*1.9*	*7.1*
Ethyl benzene	22,000				**11**	1000 24h			2000	1000	1300		*1.5*
Xylenes	870	889			**100**	730 24h	180		700	100	870	*3.1*	*8.5*
n-Hexane	700				**730**	7500	200		7000				*1.7*
Cyclo hexane	6000				**6300**	6100 24h	340						*2.9*

Analyte	Coffey Investigation Levels	AirToxics 2011	WHO 2000	WHO 2010	USEPA RSL (May 2019)	MOECC 2012	TCEQ 2016	OEHHA 2019	OEHHA 2016	USEPA IRIS	NEPM HSL Calculations	Max. Conc. 198 Macquarie St	Max. Conc. 200 Macquarie St
Isopropyl benzene	400					400 24h							
n-Heptane	18400				**420**	1100 0 24h	2700						*1.5*
Isooctane													
2-methyl pentane					**1000 ***		7100						*2.8*
3-methyl pentane													*1*
n-Decane	1000					6000 0 1h							
n-Octane						6180 0 10min	540						

Notes: Underlined indicates investigation levels adopted by Coffey. *Italics* indicates the maximum concentrations detected. **BOLD** indicates the criteria considered most relevant by the Auditor. ***BOLD underlined italics*** indicates maximum concentration exceeds some criteria (but not the most relevant criteria). * criteria for n-pentane adopted.

Auditor's Opinion

The ambient air data indicates detections of volatile petroleum hydrocarbons including BTEX at low concentrations. There appears to have been a spike in concentrations in December 2009 and May 2010. This correlates with the timing of the active remediation works which included multiphase extraction which may have assisted in the volatilisation of contaminants from groundwater into air due to vacuum pressures applied.

Concentrations appear to have reduced in December 2010 and June 2011 and indicate a low risk to human health as all results were below the USEPA Residential Air criteria and the range of other criteria considered.

12. EVALUATION OF CONCEPTUAL SITE MODEL

A schematic of the conceptual site model (CSM) was presented in the PP2 ESA 2007 and is presented below as Figure 12.1. Similar cross sections through the site and surrounds showing topography and basements are shown on Attachment 16, Appendix A.

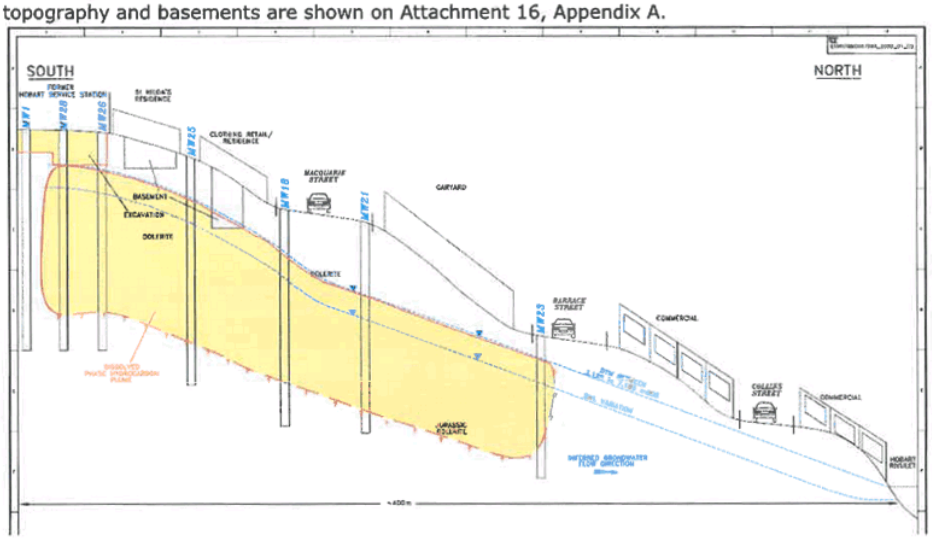


Figure 12.1: Conceptual Site Model (Source: PP2 ESA 2007)

The SCR developed a CSM to assess the potential connections between the residual contamination and potential human health and ecological receptors both on and offsite. The CSM outlined the potential Source-Pathway-Receptor (SPR) linkages, which represent the possible scenarios whereby the contaminant could present an unacceptable risk to human health or ecological receptors via a complete exposure pathway. Where a complete SPR linkage is identified, additional assessment work to define the risk is required. A summary of the identified SPR linkages is provided in Figure 12.2.

Table 11: Source Pathway Receptors Linkages Evaluated

Receptors	Source	Contaminated Soil		Contaminated Groundwater	
	Pathway	Direct Contact / Ingestion	Inhalation of Vapours	Direct Contact / Ingestion	Inhalation of Vapours
ONSITE					
Scenario 1 – Low density residential: Slab on grade residential building		●	●	*Pathway incomplete as historically the shallowest SWL recorded was ~ 2 m bgl and onsite abstraction of groundwater is considered unlikely.*	●
Scenario 2 – High density residential: Residential building with basement		*Pathway incomplete as soil is excavated to 3 mbgl.*	●	●	●
Shallow Trench^ and Utility-Pits Maintenance Worker (Adult)		●	●	*Pathway incomplete as historically the shallowest SWL recorded was ~ 2 mbgl.*	●
Construction workers involved in > 1m deep excavations during site development.		●	●	●	●
Terrestrial Ecosystems		●	*n/a*	*n/a*	*n/a*
OFFSITE					
Residents (adults, children) and commercial site users (Adult)		*Pathway incomplete as lateral migration of contamination in soil is considered unlikely.*		●	●
Shallow Trench^ and Utility-Pits Maintenance Worker				●	●
Groundwater abstractions (drinking water, non-potable use)*.				*n/a*	*n/a*
Aquatic Ecosystems (Hobart Rivulet)*				*Pathway incomplete – likely point of discharge >200 m north west and impacts are delineated within 60 m of the site.*	

Table Notes: ● = potentially complete SPR Linkage – further assessment required, ^ Shallow trench worker scenario assumes a maximum trench depth of 1 m (CRC CARE, 2011), n/a = exposure pathway not applicable for this receptor, GW = groundwater, * No SPR linkage - assessment conducted as a PEV

Figure 12.2: Summary of SPR Linkages (Source: SCR)

Auditor's Opinion

Figures 12.1 and 12.2 provide a reasonable CSM for the site and were adequate to inform assessment of risks at the site and the surrounds.

Where "further assessment" was required, Golder undertook additional investigations as discussed herein.

Based on these assessments, it has been concluded that soil does not pose a significant risk to human health including construction workers or the environment under the potential development scenarios (Section 8).

The potential risk posed by groundwater and soil vapour to a slab on ground development and potential seepage and vapour ingress to a basement was also found to be low and acceptable as discussed in Section 13.1.

Groundwater may pose a risk if it is abstracted. However, abstraction is not considered likely to occur as discussed in Section 13.4.

Also, if groundwater were to ingress to a basement, the Auditor notes there may be petroleum hydrocarbon odour based on observations reported during groundwater sampling and observation of the groundwater ingress to the basement of 198 Macquarie Street.

13. ASSESSMENT OF RISK

13.1 Seepage of Groundwater and Vapour into Basements

The Auditor, with the assistance of the expert support team, reviewed the derivation of risk-based site-specific screening levels (RBSLs) based on risk modelling for a basement scenario provided by Golder in the SCR.

The SCR concluded the potential risks to residential occupants and construction workers were low and acceptable.

Summary of Audit Team Review

The Auditor notes that the RBSLs calculated by Golder were based on a target hazard quotient of 1 for individual contaminants and did not assess cumulative impacts from mixtures that would be present or the resulting hazard index of combined RBSLs.

However, the Audit Team conducted independent modelling to check these outcomes and the conclusions made in the SCR were confirmed to be acceptable for a residential scenario with a single level basement based on the exposure scenarios and exposure parameters presented in the SCR which were considered reasonable. The Audit Team risk calculation included modelling of volatilisation from groundwater seepage into excavation trenches and a building basement. Further details are provided below.

Receptors

The Audit Team undertook modelling of basement seepage and resulting risk to the following receptors:

- Residential receptor (adult and child)
- Maintenance worker in basement

The Audit Team also undertook modelling of groundwater seepage into excavation trench and resulting risk to the following receptors:

- Construction worker during basement construction

Chemicals of Potential Concern (COPCs)

The following COPCs were included in the assessment:

- Benzene
- Toluene
- Ethylbenzene
- Xylene
- Naphthalene
- TRH Fraction 1 minus BTEX (F1)
- TRH Fraction 2 minus naphthalene (F2) TRH Fraction 3
- TRH Fraction 4

The concentrations used by the Auditor in the risk assessment are listed in Table 13.1. These were selected to provide a reasonable indication of likely maximum concentrations in the north of the site based on the most recent rounds of groundwater monitoring (2013 to 2017). An 80:20 split was assumed for aliphatic and aromatic content of each TRH fraction. Benzene drove the risk and the concentration adopted was from MW6 in November 2013 which represented the highest concentration since 2011. Lead was not used in the modelling as maximum concentrations were at the LOR and it was not considered a contaminant of concern in groundwater. The risk posed by other contaminants of potential concern such as TMB and VOCs was reviewed in Sections 10.4 to 10.6 and found to be low and acceptable.

Table 13.1: Concentrations Used for Risk Modelling

Contaminant	Concentration (mg/L)
Benzene	0.596
Toluene	0.2
Ethylbenzene	0.6
Xylenes (total)	0.16
Naphthalene	0.19
TRH Aliphatic >C_6-C_{10}	1.6
TRH Aromatic >C_6-C_{10} [minus BTEX]	0.4
TRH Aliphatic >C_{10}-C_{16}	1.2
TRH Aromatic >C_{10}-C_{16}	0.3
TRH Aliphatic >C_{16}-C_{34}	0.08
TRH Aromatic >C_{16}-C_{34}	0.02
TRH Aliphatic >C_{34}-C_{40}	0.08
TRH Aromatic >C_{34}-C_{40}	0.02

Exposure Scenarios

The exposure scenarios and exposure parameters were directly used from the SCR and were considered reasonable. However, there were slight differences in the basement seepage modelling assumptions as outlined below.

Excavation: It was assumed that contaminated groundwater seeped into an excavation trench of dimension 15 m x 10 m, with a depth of 3 m. It was assumed that the worker would be exposed to inhalation of volatiles from the groundwater, dermal contact and incidental ingestion.

Basement Seepage: It was assumed that a basement of size 15 m x 10 m and height 3 m would be constructed. The basement would have a groundwater seepage management system with 50 mm pipes running the longest length of the basement. The groundwater would be flowing in the pipes and conservative groundwater parameters (hydraulic gradient, hydraulic conductivity and aquifer porosity) was used for this.

- Residential receptors:
  - While present in the basement they (adult and child) would be exposed to volatilisation from the pipes and exposed to a small puddle on the basement floor which would include dermal contact and incidental ingestion. Direct contact exposures would only occur for a fraction of time residents are in the basement.
  - While present in the first floor of the building, they would be exposed to volatiles only.
- Maintenance worker
  - Would be exposed to volatilisation from a groundwater well or sump of size 4 m X 2 m and height 1 m. The worker would also be exposed to direct contact including dermal contact and incidental ingestion.

Findings

The Audit Team findings were as follows:

- Threshold and non-threshold risks were acceptable for construction and maintenance worker
- Non-threshold risks were acceptable for residential receptor

- Threshold risks were marginal for adult and child receptor in the basement. Risks appeared to be driven by TRH F2 fraction from dermal contact. Minimising contact time reduces the hazard index to below 1 for both residential receptors. Risks may reduce further if a 50:50 split was assumed for the TRH fractions, especially for F2.

Auditor's Opinion

Overall it was concluded that the modelling conducted by the Audit Team supported the conclusions drawn by the SCR that the risk was adequately low and acceptable and the assumptions and inputs to the calculations were adequately conservative.

However, if groundwater were to ingress to a future basement structure onsite there may be petroleum hydrocarbon odour.

13.2 Other Human Health Risks

The potential risk to human health has been assessed based on soil and soil vapour intrusion (from soil and groundwater) and found to not pose a risk under a slab on ground development for residential land use onsite or the 'as of right' uses offsite (refer to Sections 8 to 11 for further details).

13.3 Ecological Receptors

The nearest down gradient ecological receptor has been identified as the Hobart Rivulet located 130 m northwest of the site (at its closest point) and 400 m down gradient to the north. The inferred seepage velocity and evidence of attenuation of the identified plume suggest that adverse impacts originating from the site are unlikely. Therefore, a complete exposure pathway is unlikely to exist between the aquatic ecosystems of the Hobart Rivulet and the groundwater plume.

13.4 Groundwater Abstraction

The SCR states groundwater abstraction is considered unlikely onsite given the urban location and the mains water supply for the site. Therefore, the potential onsite groundwater abstraction uses for potable water, industrial, irrigation, stock watering and primary contact recreation (i.e. swimming pools) were not assessed.

A groundwater bore search was conducted for the SCR in July 2018, utilising the Tasmanian Department of Primary Industries, Parks, Water and Environment online Groundwater Information Portal NSW Department of Primary Industries Office of Water on-line database (http://wrt.tas.gov.au/groundwater-info). The closest bore is located approximately 1.6 km south-southeast of the site (up-gradient).

The SCR states groundwater abstraction uses offsite are not considered potential receptors for the following reasons:

- No groundwater abstraction bores have been identified near the site
- The surrounding area is serviced by a mains water supply
- Residual groundwater impacts present in the north-western portion of the site are not expected to extend offsite to the northwest further than Macquarie Street, are stable in extent and concentrations are declining.

Auditor's Opinion

The Auditor agrees that groundwater is unlikely to be abstracted based on the discussion above and has spoken with EPA Tasmania and understands the EPA corresponds with the Water Resources branch when there is a significant groundwater plume to ensure that extraction does not occur, however, the process for this is not formalised. Based on the history of the site and the revocation of SMNs in 2014 (including SMN 8626/1 that prohibited groundwater extraction) (as discussed in Section 3) and the known status of groundwater impact in the area (Section 9), the Auditor is satisfied that a formal control to prevent groundwater extraction is not required.

14. ONGOING MANAGEMENT

No ongoing management requirements have been identified in the SCR. The Auditor agrees this is reasonable. A formal control to prevent groundwater extraction is not required as discussed in Section 13.4.

If groundwater were to ingress to a future basement structure onsite there may be petroleum hydrocarbon odour which may require management from an aesthetic perspective.

15. COMPLIANCE WITH REGULATORY GUIDELINES AND DIRECTIONS

15.1 General

The Auditor has used guidelines currently made and approved by the NSW EPA under section 105 of the NSW *Contaminated Land Management Act 1997*.

The investigation was generally conducted in accordance with the OEH (2011) *Guidelines for Consultants Reporting on Contaminated Sites*. The checklist included in that document has been referred to.

There is a process for Auditors to be "approved" by Director EPA (Tasmania) for a Site Audit Statement to be accepted by the Council when a development application (DA) is submitted under the Acceptable Solution (AS) track. Since there is no current DA for the site, the Site Audit Report has been prepared for Mobil without seeking approval.

To allow relevant information to be retained in the City of Hobart and EPA systems, the Auditor will submit a copy of the Site Audit Statement to Council and EPA.

15.2 EPA Regulation

As discussed in Section 1.1, the site was previously regulated under an EPN (7222/1, 31 October 2005) which was revoked on 29 September 2011 and SMNs (8625/1 and 8626/1, 3 October 2011) which were revoked on 21 March 2014.

Whilst the site is no longer actively regulated, it is recommended that groundwater should not be abstracted for beneficial reuse within the plume area without further assessment of suitability for the proposed use.

15.3 Waste Management

TEA

USTs T1 to T6, product lines and the TIT were removed in May 2005 and reported in the TEA. USTs were transported offsite for destruction by Hazel Bros Pty Ltd under the direction and control of the remediation contractor.

Approximately 12,000 litres of tank pit water and/or perched water was removed prior to backfilling works. Tank pit water was pumped from the tank pit and classified by a licensed contractor (Collex) and disposed offsite.

Soil excavated during the TEA was stockpiled (1031.5 m^3) and reportedly classified in accordance with the Department of Primary Industries, Water and Environment - Classification and Management of Contaminated Soil for Disposal, Information Bulletin No 105, February 2004 (DPIWE, 2004) and either used onsite below 1 m, if meeting relevant guidelines and aesthetic criteria, or disposed offsite to an appropriately licensed landfill.

Approximately 23.5 m^3 of this soil was reportedly characterised as clean fill however was disposed offsite to a licensed landfill due to staining and odour. Approximately 105 m^3 was reportedly disposed offsite to landfill. Approximately 199 m^3 was validated for reuse onsite below 1 m from surface (as described in Section 8.3) and the remaining 704 m^3 was reportedly disposed offsite due to analytes not being below the LOR for contaminants of potential concern within the first metre below surface.

Waste classification reports were not provided. However, laboratory results were provided for each stockpile and a table was provided in the TEA stating classification of each stockpile as "contaminated soil", "low level contaminated soil" or "fill material". The receiving site(s) for the material disposed offsite was not mentioned and disposal dockets were not provided.

Letter dated 2 May 2007, Coffey

Stockpile 1 had an estimated volume of 60 m^3. To classify the soil, the number of samples was based on the ratio of 1 sample per 25 m^3. Three samples were screened using a PID and analysed for TPH, BTEX, lead, PAHs, phenolic compounds and volatile chlorinated hydrocarbon (VCH). PID readings were below 2 ppm for all three soil samples. Concentrations of organic contaminants of concern were below the LOR and lead ranged from 49-66 mg/kg and was not of concern.

This material was reportedly disposed offsite to Copping Landfill on the 26th March 2007.

Coffey stated the material was classified and disposed as per the Department of Tourism, Arts and Environment (DTAE) Information Bulletin No.105 Classification and Management of Contaminated Soil for Disposal (2006).

Disposal documentation for approximately 60 m^3 of "Low Level Contaminated Soil (level 2)" was included as an appendix to the letter and included DTAE approval.

SCR

Disposal dockets were provided for concrete disposed offsite. No soil was disposed offsite.

15.4 Imported Fill

Imported fill appears to have been quarried material and suitable for use at the site (refer Section 8.5).

15.5 Conflict of Interest

The Auditor has considered the potential for a conflict of interest in accordance with the requirements of section 3.2.3 of the NSW EPA (2017) *Guidelines for the NSW Site Auditor Scheme (3rd Edition)*.

The Auditor considers that there are no conflicts of interest, given that:

1. The Auditor is not related to a person by whom any part of the land is owned or occupied.
2. The Auditor does not have a pecuniary interest in any part of the land or any activity carried out on any part of the land.
3. The Auditor has not reviewed any aspect of work carried out by, or a report written by, the site auditor or a person to whom the site auditor is related.

16. CONCLUSIONS AND RECOMMENDATIONS

The SCR states:

> *"...with respect to contamination (if any):*
>
> - *The conditions on-site are considered suitable for residential land use.*
> - *The conditions in respect of off-site areas are considered are suitable for their 'as of right' land use.*
>
> *Golder concludes that no further action is warranted in regards to assessment, monitoring or remediation of contamination at the site or off-site."*

Based on the information presented in the reviewed reports and following the decision-making process for assessing urban redevelopment sites in NSW EPA (2017) *Guidelines for the NSW Site Auditor Scheme (3rd Edition),* the Auditor concludes that the site is suitable for the purposes of 'residential with gardens and accessible soil'.

Petroleum hydrocarbon impact to groundwater remains in the northern portion of the site and extends offsite. The plume has been delineated and is present beneath the adjacent sites located at 200 and 198 Macquarie Streets to the north and beneath Macquarie Street to the northwest of the site. The edge of the plume is likely to be present beneath the buildings on the western side of Macquarie Street and does not extend significantly into Barrack Street to the north.

Groundwater impact, both on and offsite, has been assessed and is not considered to pose a risk to human health or the environment based on the proposed landuse, however petroleum hydrocarbon odour is likely to be present in groundwater within the plume. If groundwater were to ingress to a future basement structure onsite there may be petroleum hydrocarbon odour. In addition, groundwater should not be abstracted for beneficial reuse within the plume area without further assessment of suitability for the proposed use.

17. OTHER RELEVANT INFORMATION

This Audit was conducted on the behalf of Mobil Oil Australia Pty Ltd for the purpose of assessing whether the land is suitable for the proposed residential uses i.e. a "Site Audit" as defined in Section 4 (definition of a 'site audit' (b)(iii)) of the NSW *Contaminated Land Management Act 1997*. The Audit comprises an 'environmental audit' assessment in accordance with section 5B of the Tasmania *Environmental Management and Pollution Control Act 1994*.

This summary report may not be suitable for other uses. The consultants included limitations in their reports. The Audit must also be subject to those limitations. The Auditor has prepared this document in good faith, but is unable to provide certification outside of areas over which the Auditor had some control or is reasonably able to check.

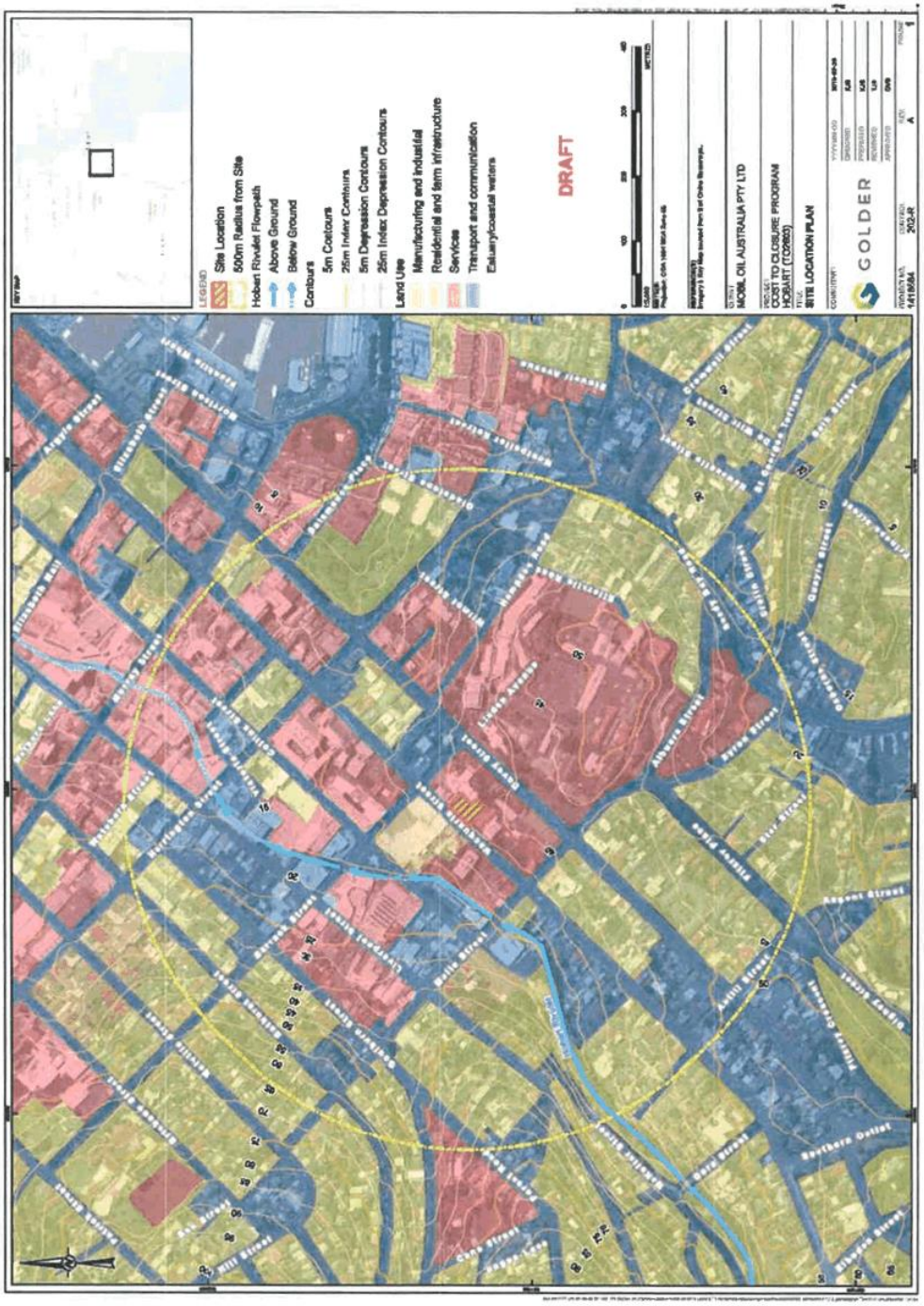
The Auditor has relied on the documents referenced in Section 1.2 of the Site Audit Report in preparing the Auditors' opinion. If the Auditor is unable to rely on any of those documents, the conclusions of the audit could change.

It is not possible in a Site Audit Report to present all data which could be of interest to all readers of this report. Readers are referred to the referenced reports for further data. Users of this document should satisfy themselves concerning its application to, and where necessary seek expert advice in respect to, their situation.

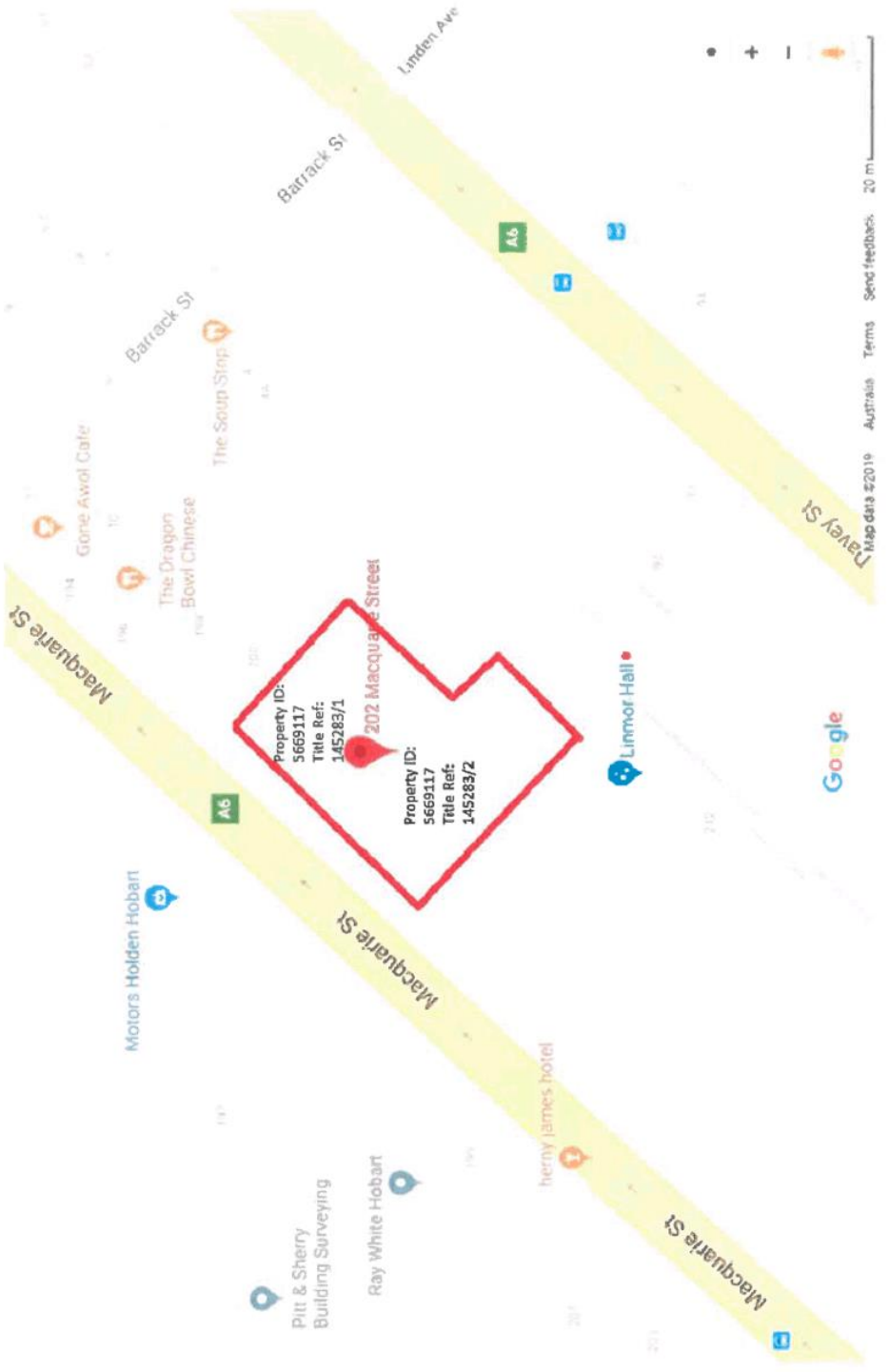
APPENDIX A
ATTACHMENTS

Attachment 1: Site Locality Plan
Attachment 2: Site Boundary and Lot Layout
Attachment 3: Former Site Layout and Phase 2 ESA Investigation Locations
Attachment 4: PP2 ESA (2005) Investigation Locations
Attachment 5: PP2 ESA (2006) Investigation Locations and Extent of Dissolved TPH Plume (December 2007)
Attachment 6: TEA Final Validation Sample Locations
Attachment 7: Soil Vapour Well Locations SV1 to SV4
Attachment 8: Monitoring Well Locations (MW26 to MW28)
Attachment 9: Soil Vapour Well Locations (SV05 to SV14)
Attachment 10: Injection Well Locations
Attachment 11: ERM Soil and Soil Vapour Wells and Test Pits
Attachment 12: Golder Surface Sample and Final Soil Sample Locations and Layout
Attachment 13: Summary of Final Soil Sample Exceedances
Attachment 14a: Extent of Plume (C_6-C_9) (December 2007)
Attachment 14b: Extent of Plume (C_6-C_9) (September 2014)
Attachment 15a: Groundwater Concentrations for Onsite Wells from 2010 to Present
Attachment 15b: Groundwater Concentrations for Offsite Wells from 2010 to Present
Attachment 16: Site and Surrounds Cross Sections

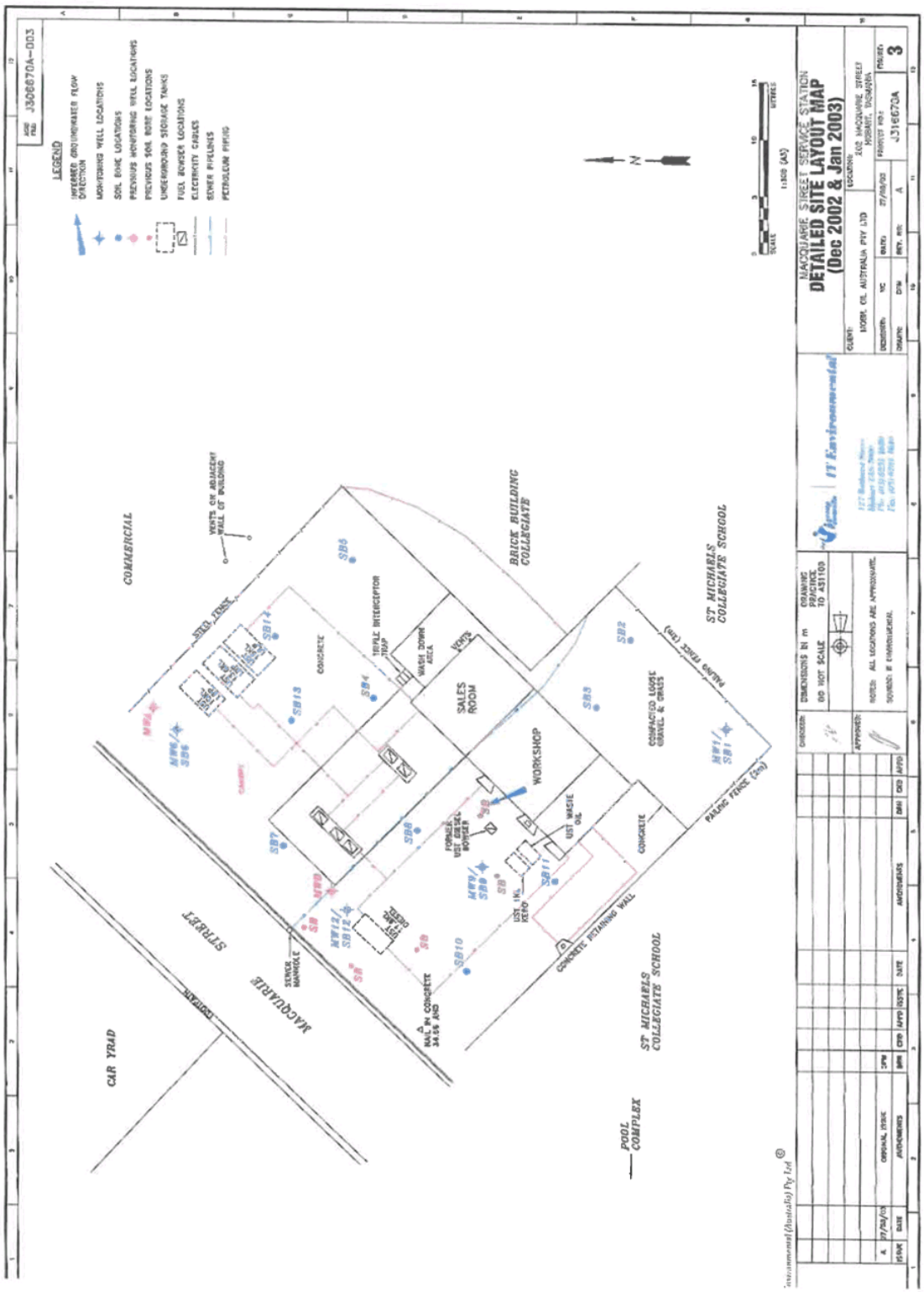
Attachment 1: Site Locality Plan



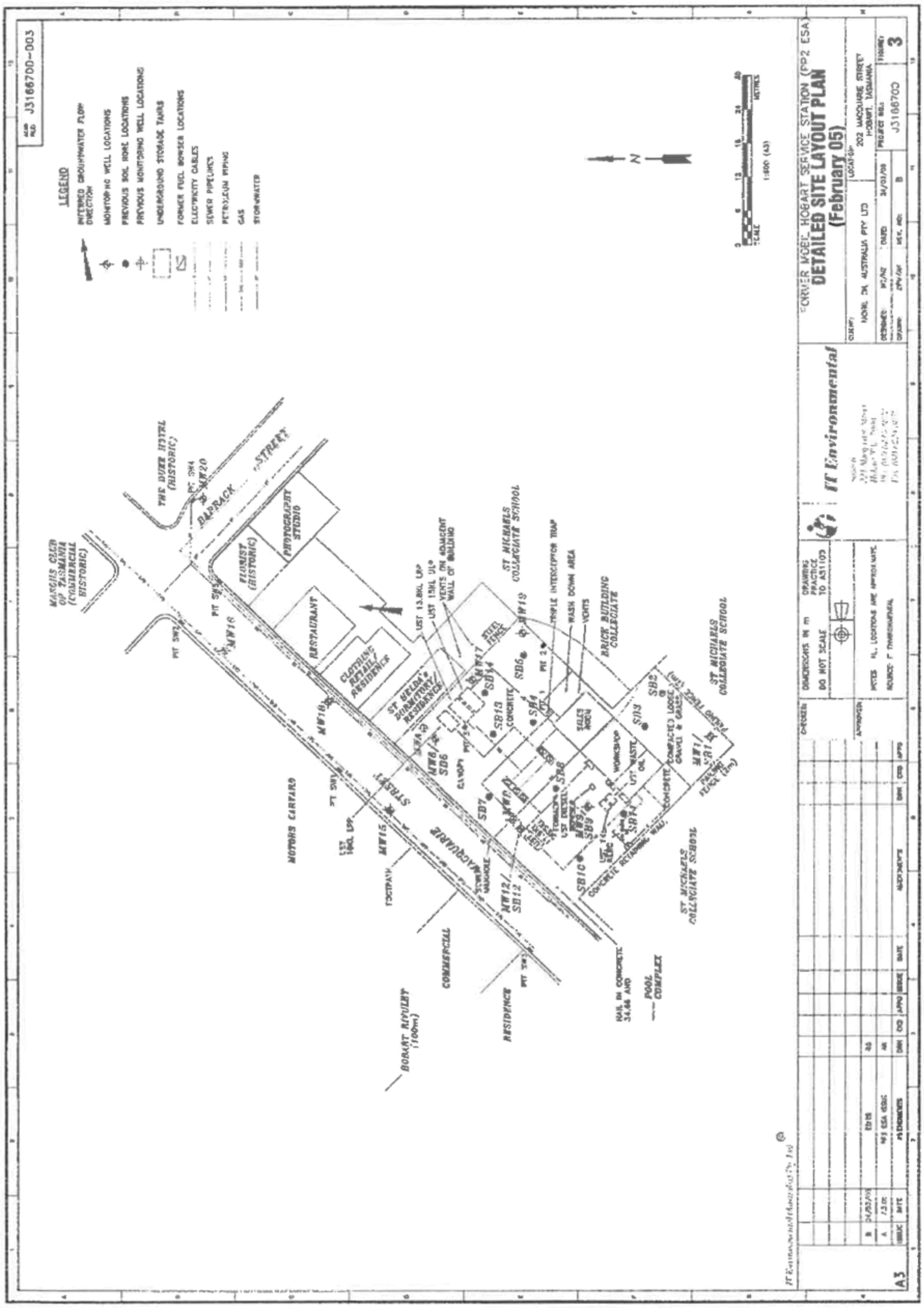
Attachment 2: Site Boundary and Lot Layout



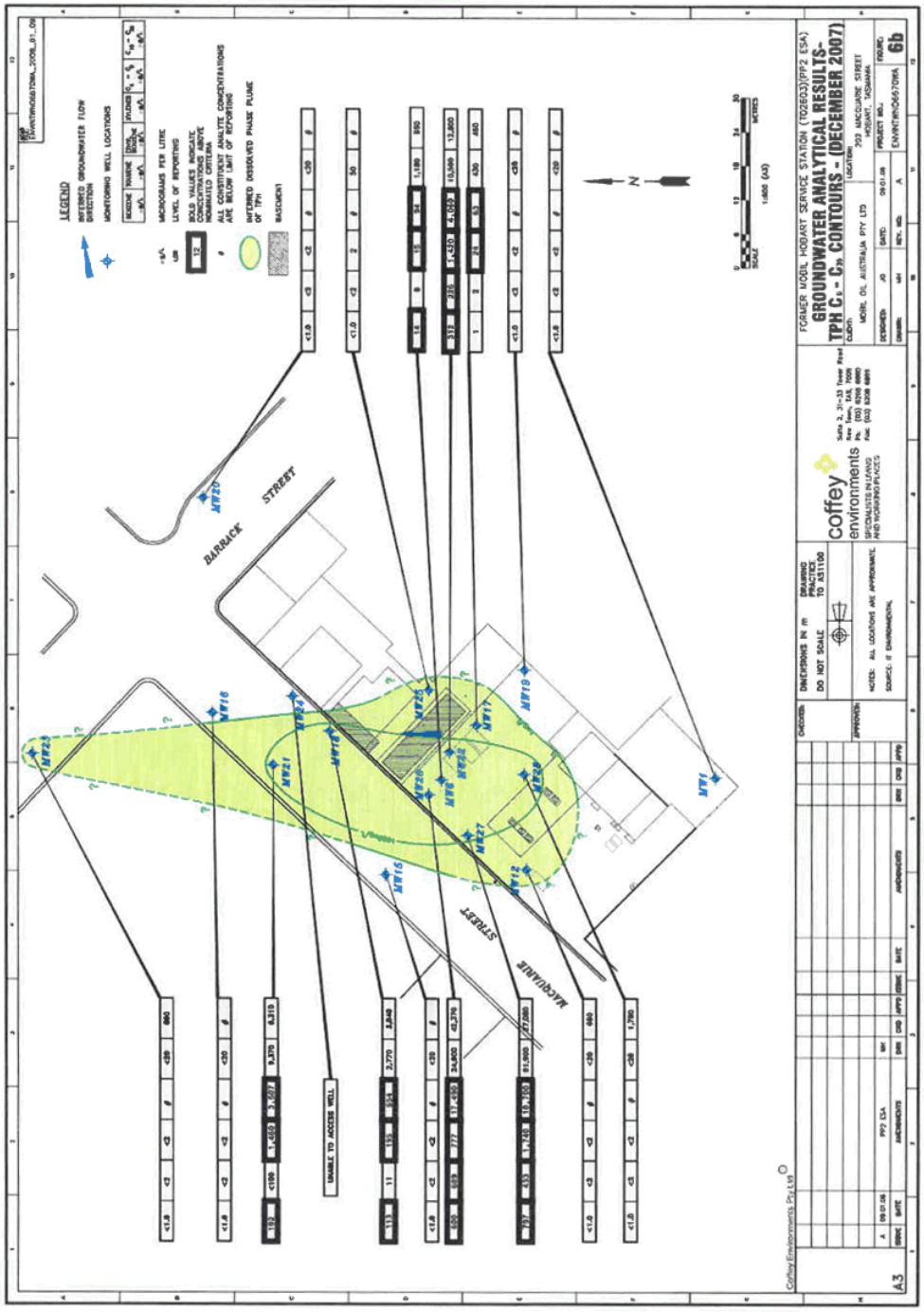
Attachment 3: Former Site Layout and Phase 2 ESA Investigation Locations



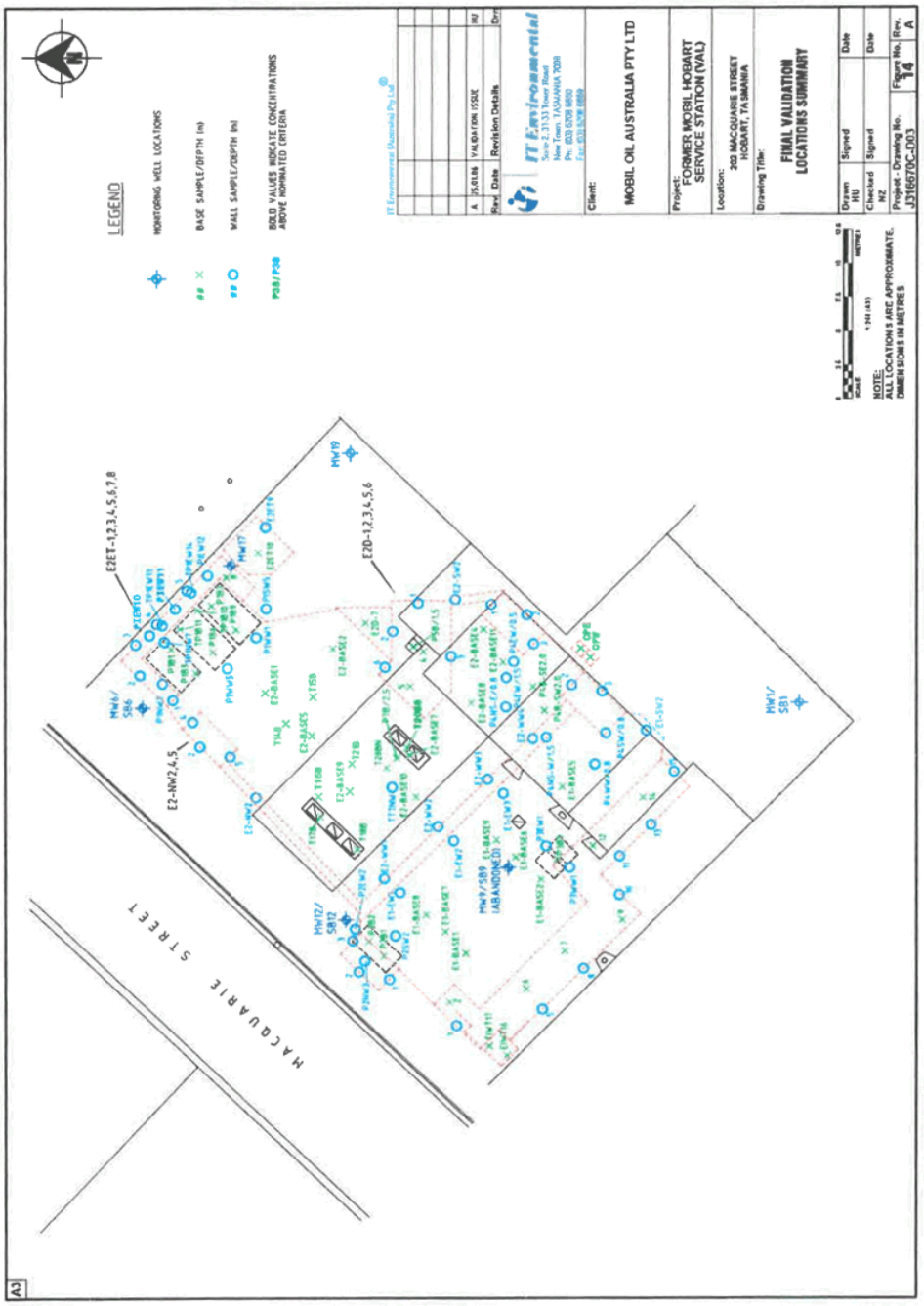
Attachment 4: PP2 ESA (2005) Investigation Locations



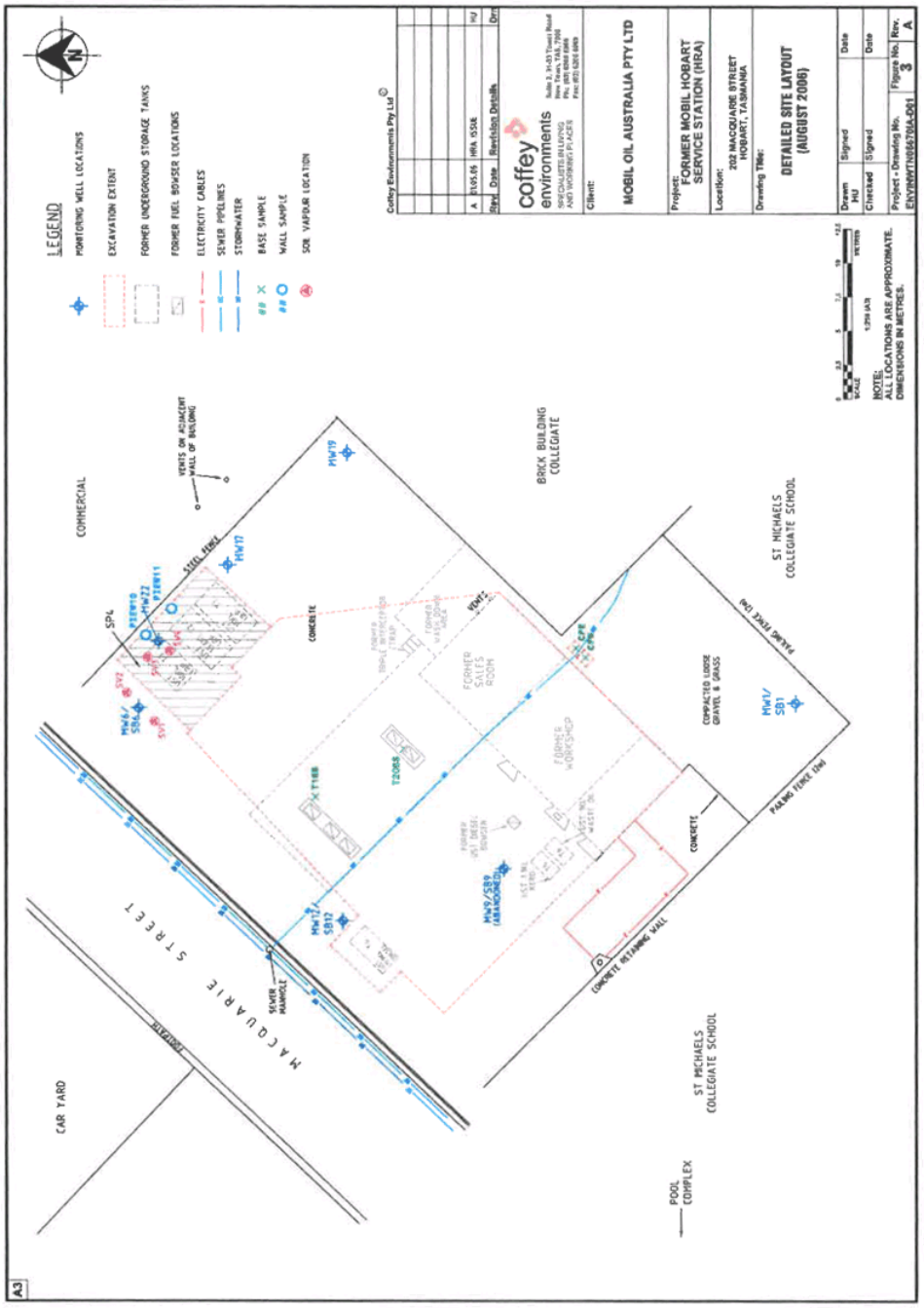
Attachment 5: PP2 ESA (2006) Investigation Locations and Extent of Dissolved TPH Plume (December 2007)



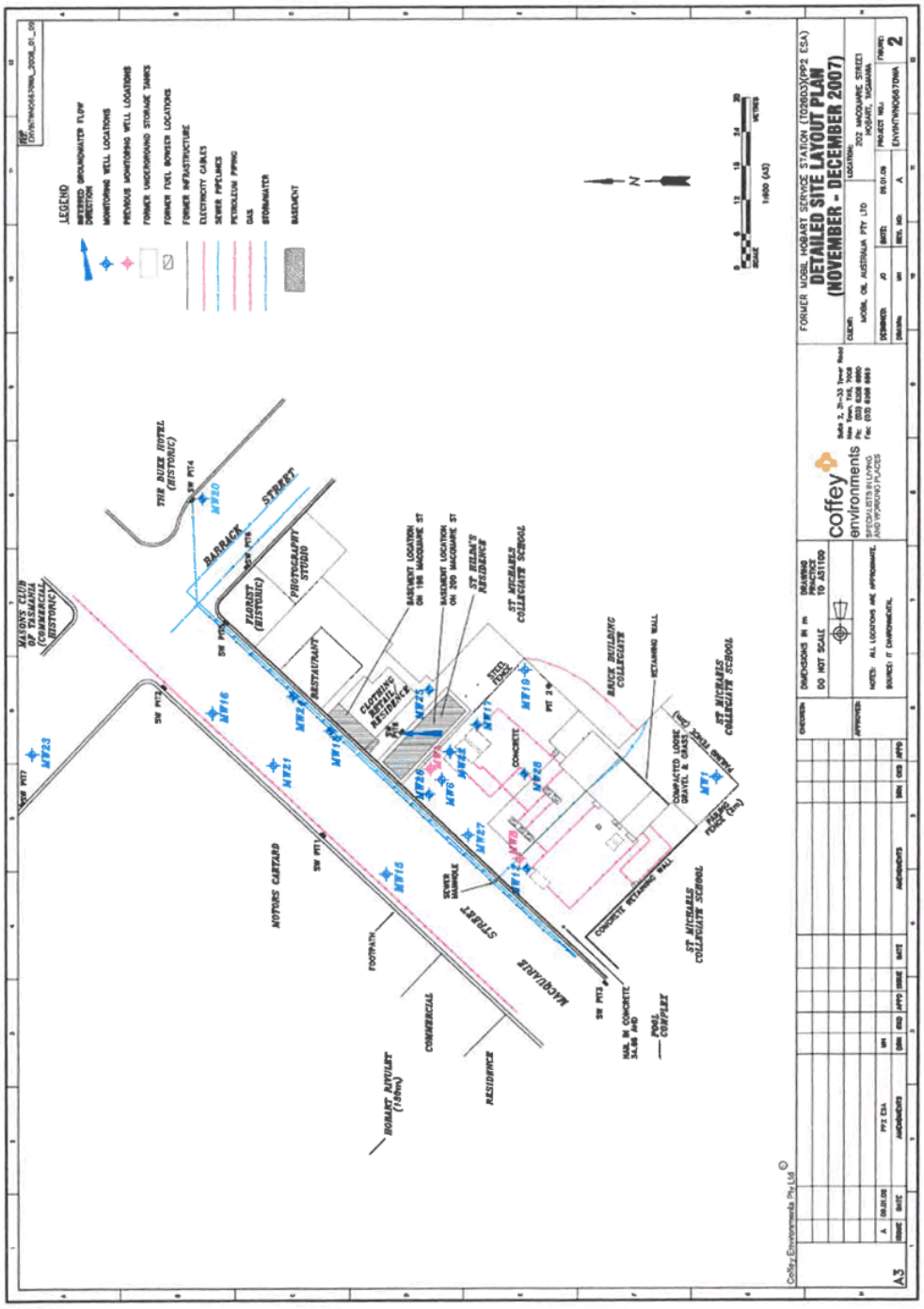
Attachment 6: TEA Final Validation Sample Locations



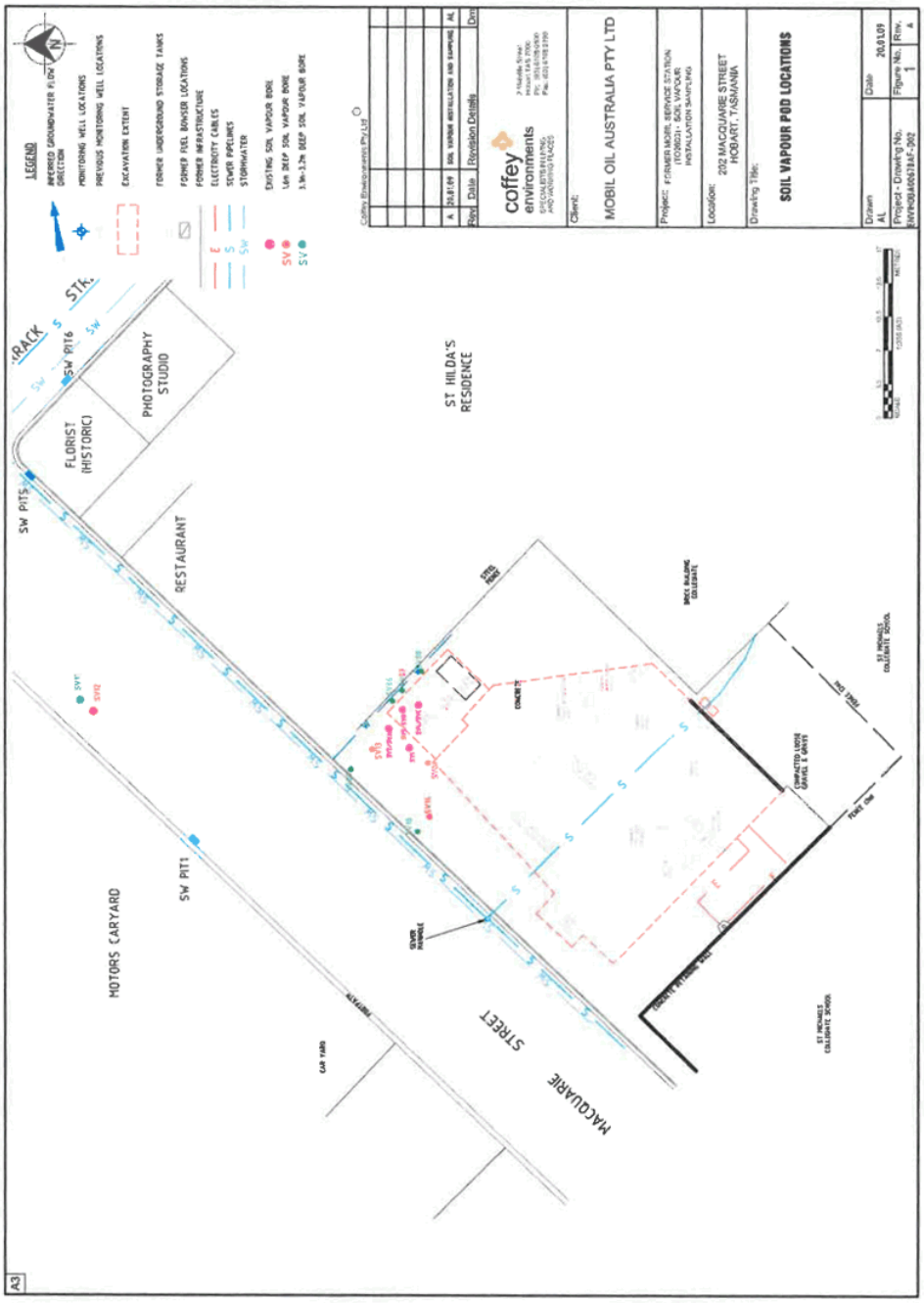
Attachment 7: Soil Vapour Well Locations SV1 to SV4



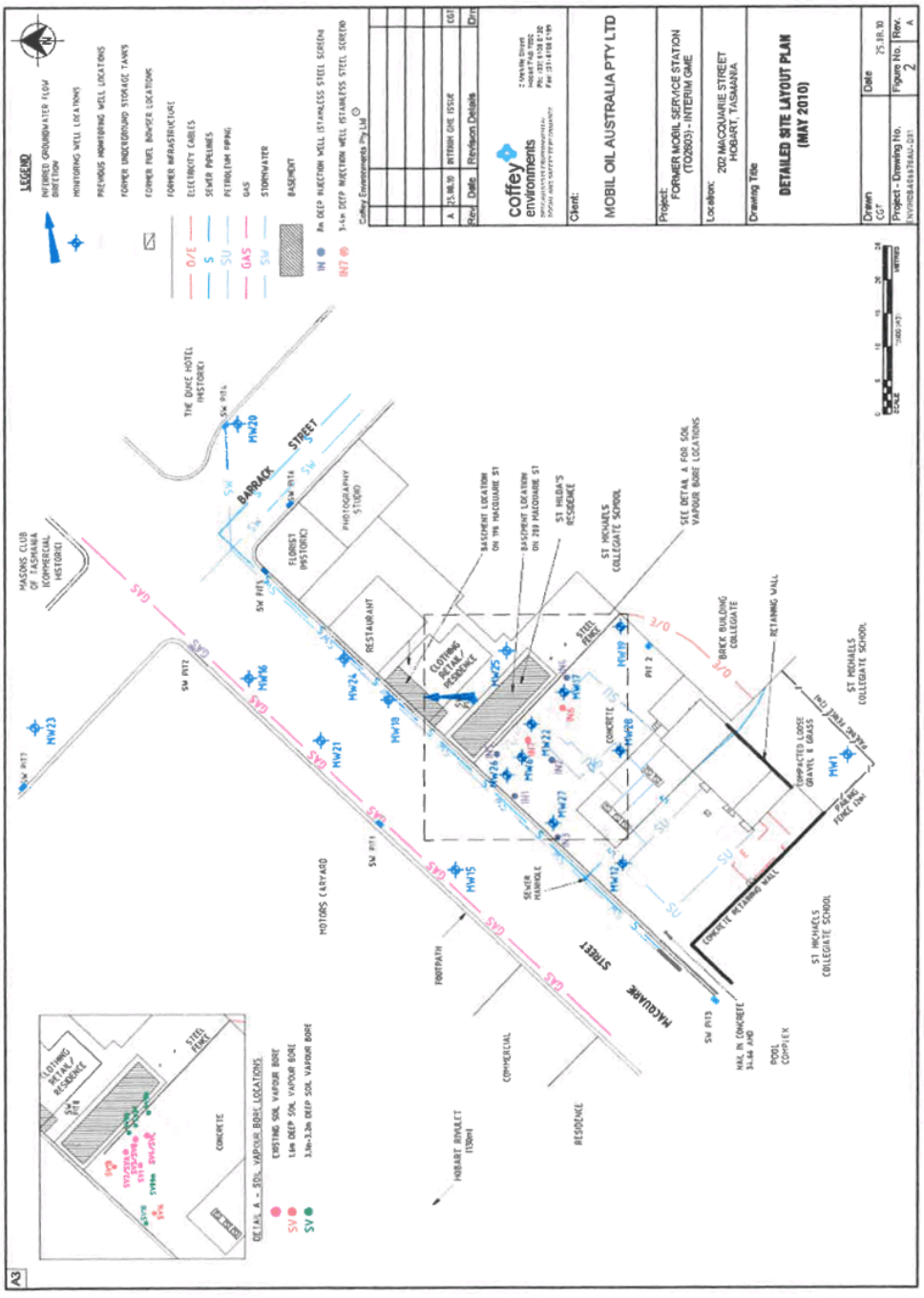
Attachment 8 Monitoring Well Locations (MW26 to MW28)



Attachment 9: Soil Vapour Well Locations (SV05 to SV14)

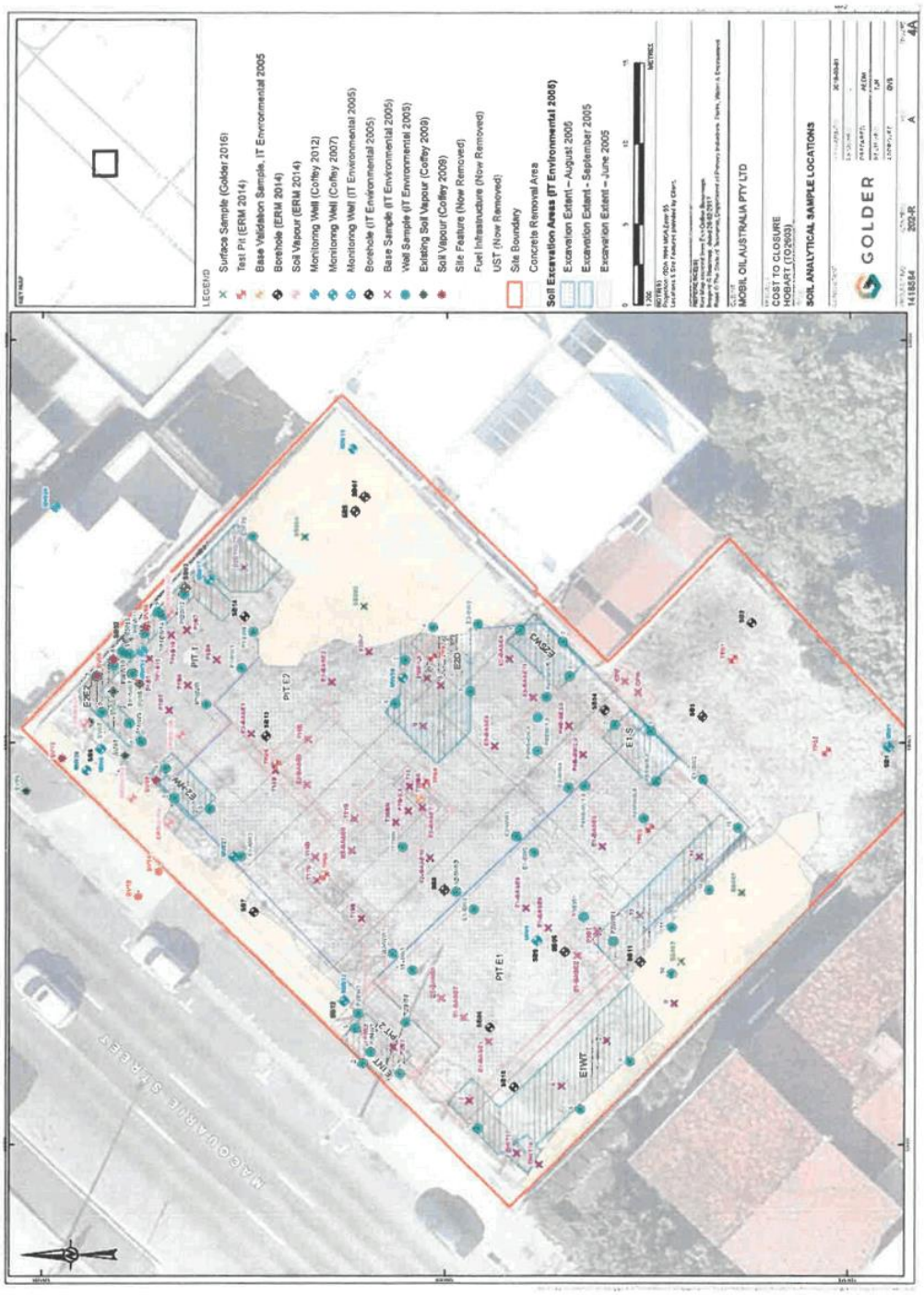


Attachment 10: Injection Well Locations

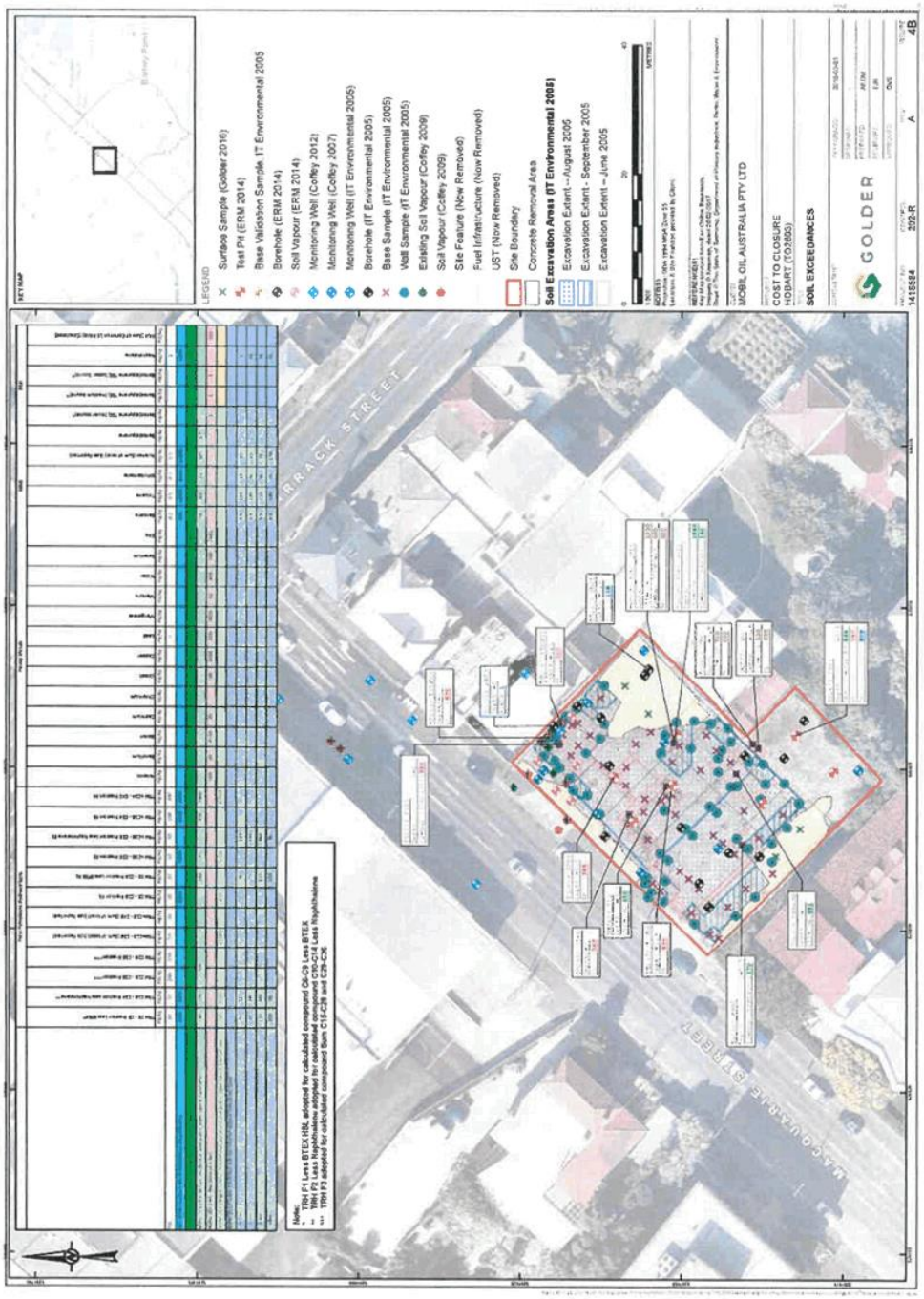


Attachment 11: ERM Soil and Soil Vapour Wells and Test Pits

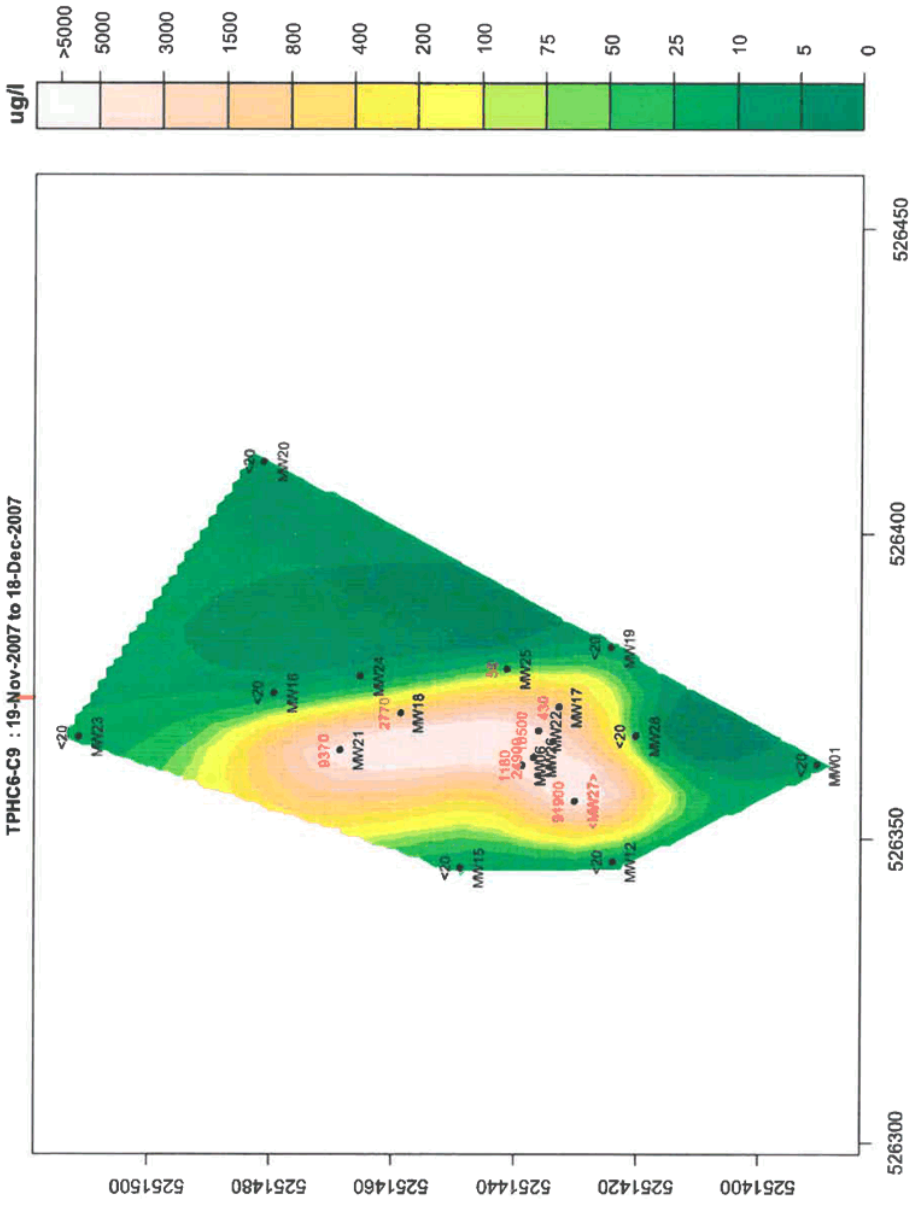
Attachment 12: Golder Surface Sample and Final Soil Sample Locations and Layout



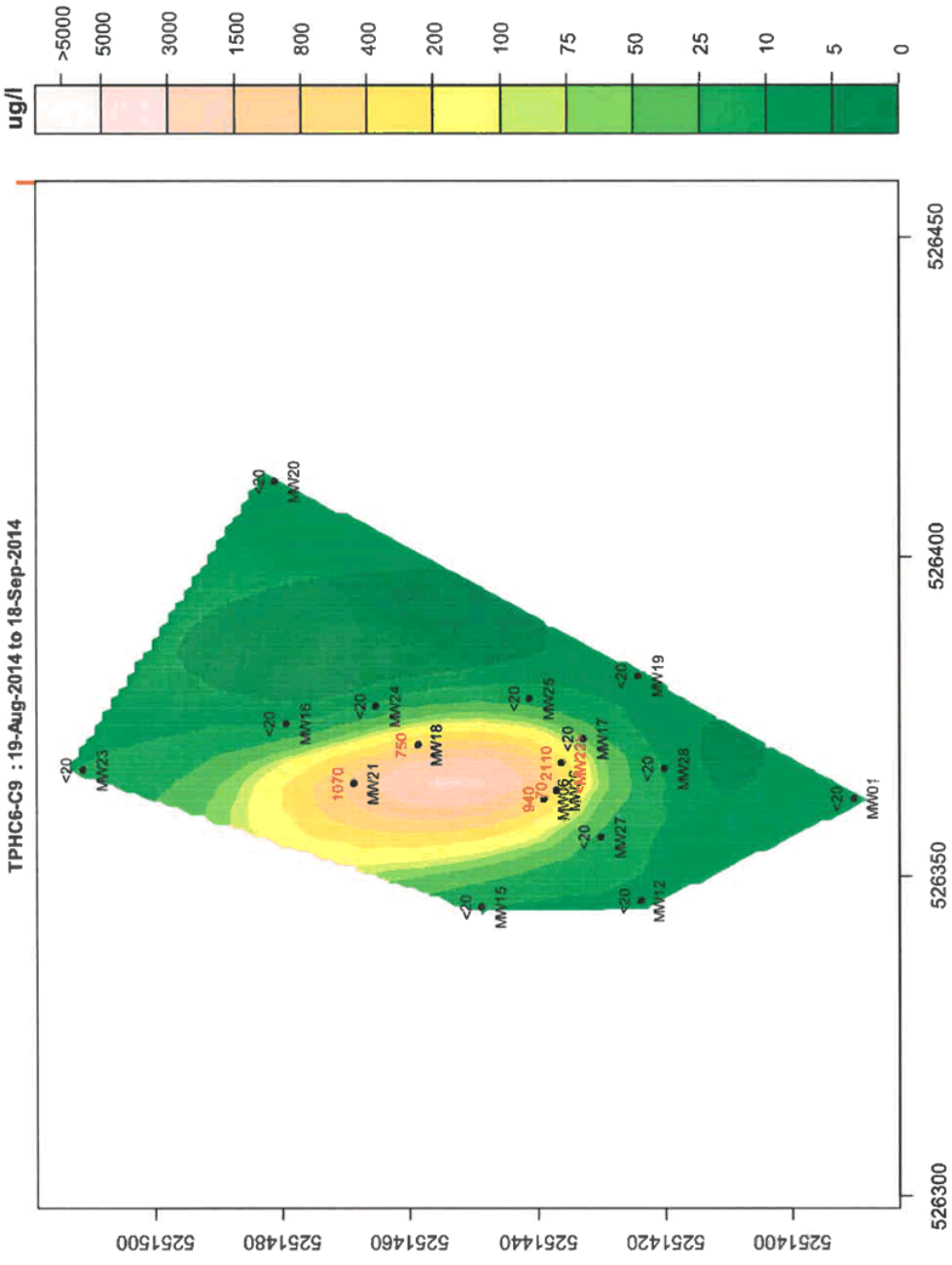
Attachment 13: Summary of Final Soil Sample Exceedances



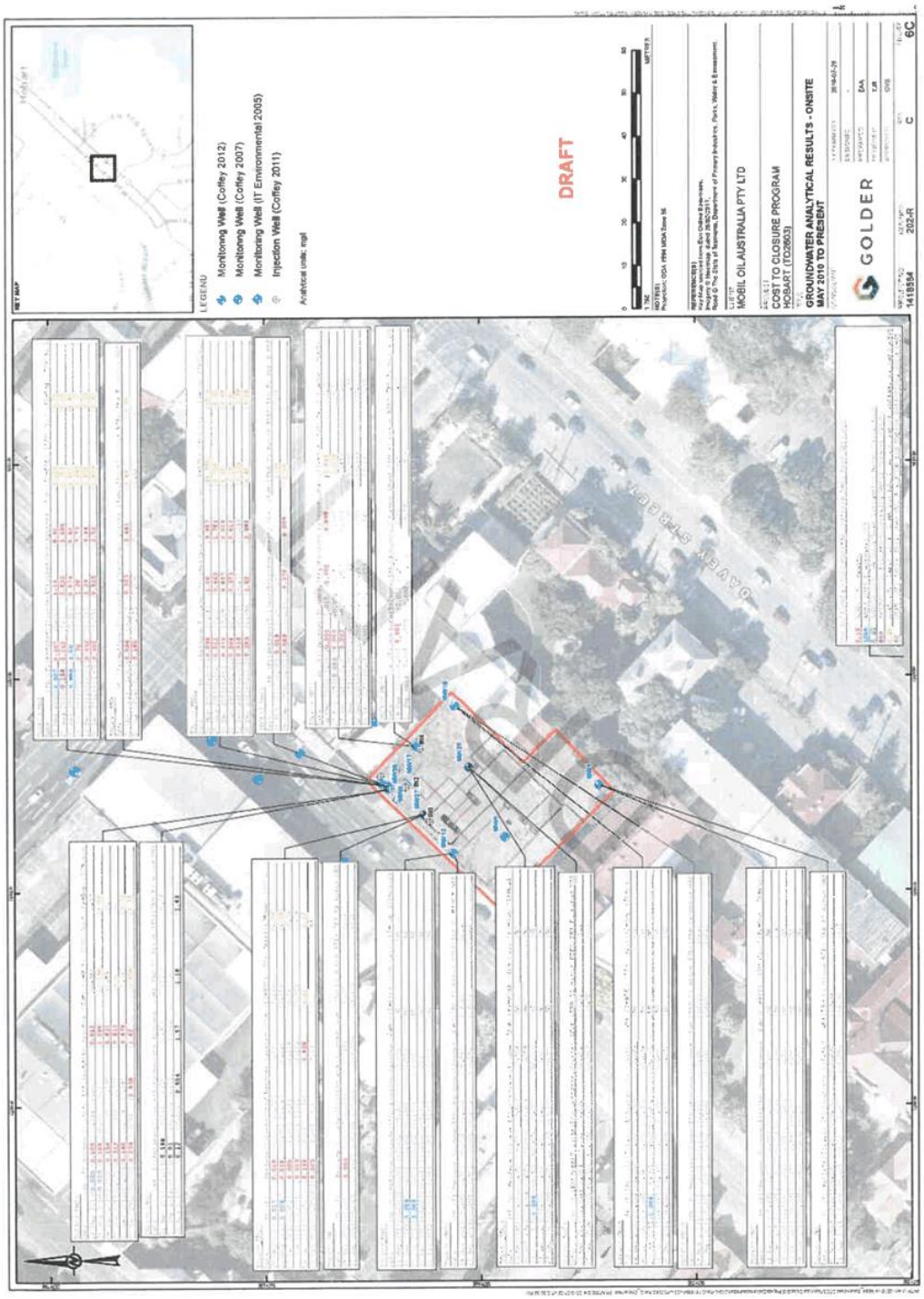
Attachment 14a: Extent of Plume (C_6-C_9) (December 2007)



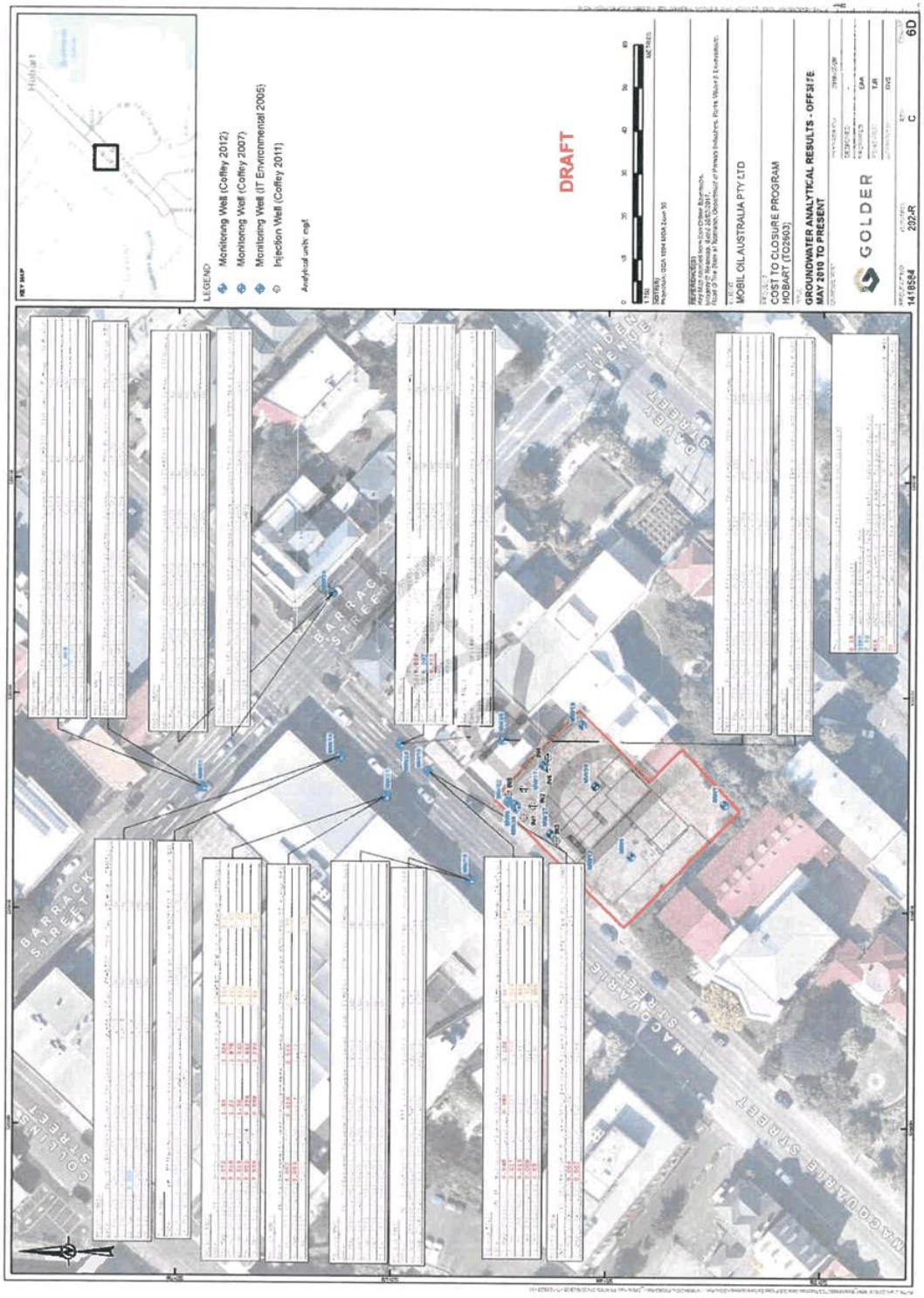
Attachment 14b: Extent of Plume (C_6-C_9) (September 2014)



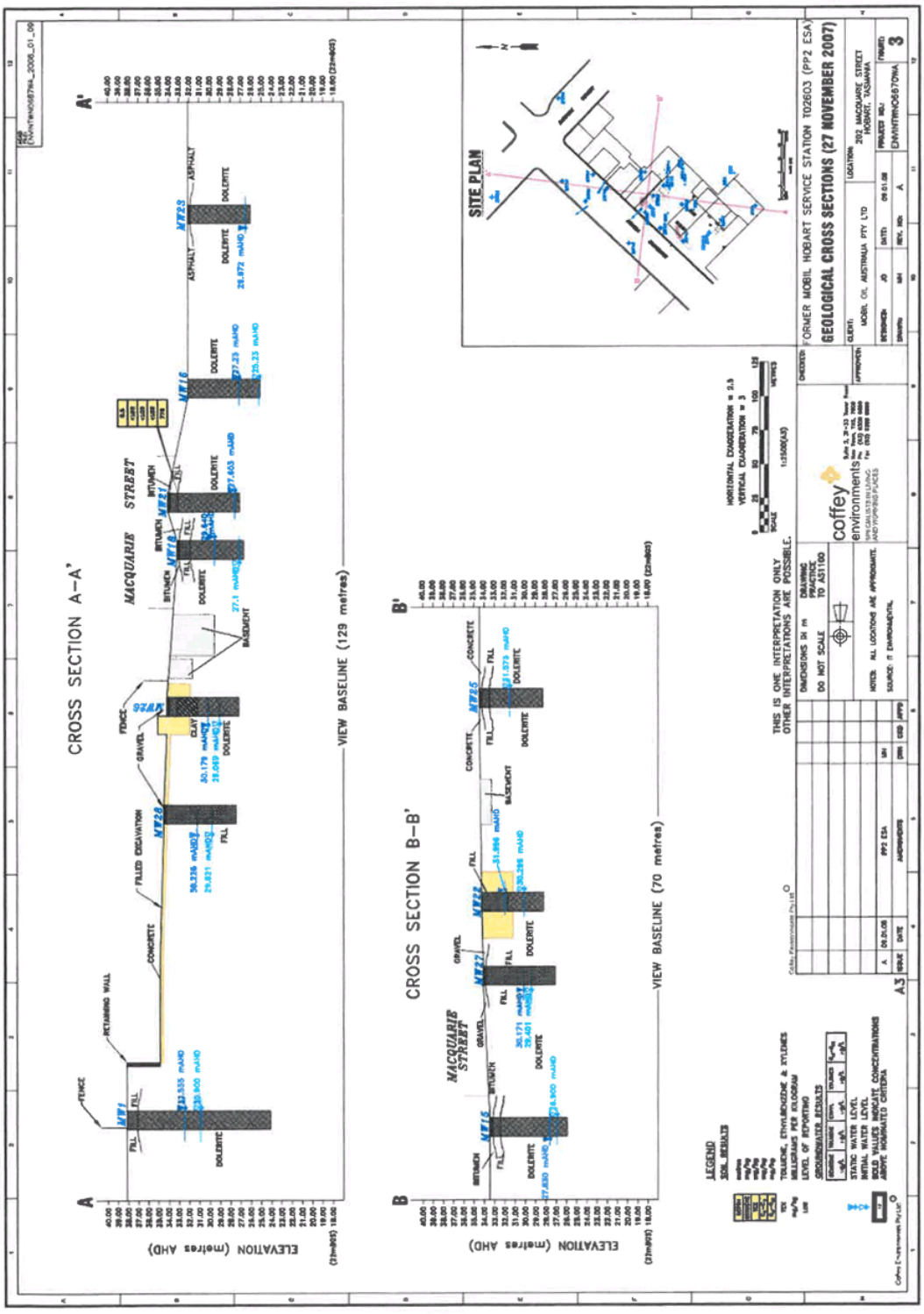
Attachment 15a: Groundwater Concentrations for Onsite Wells from 2010 to Present



Attachment 15b: Groundwater Concentrations for Offsite Wells from 2010 to Present



Attachment 16: Site and Surrounds Cross Sections



APPENDIX B
SITE AUDIT STATEMENT

NSW Site Auditor Scheme

Site Audit Statement

A site audit statement summarises the findings of a site audit. For full details of the site auditor's findings, evaluations and conclusions, refer to the associated site audit report.

This form was approved under the *Contaminated Land Management Act 1997* on 12 October 2017.

For information about completing this form, go to Part IV.

Part I: Site audit identification

Site audit statement no. RS TAS 001

This site audit is a:

☐ statutory audit

☒ non-statutory audit

within the meaning of the *Contaminated Land Management Act 1997*.

Site auditor details

(As accredited under the *Contaminated Land Management Act 1997*)

Name	Rowena Salmon
Company	Ramboll Australia Pty Ltd
Address	Level 3
	100 Pacific Highway, North Sydney
	Postcode 2060
Phone	02 9954 8100
Email	rsalmon@ramboll.com

Site details

Address: 202 Macquarie Street, Hobart, TAS Postcode 7000

Property description

(Attach a separate list if several properties are included in the site audit.)

Certificates of Title Volume 145283, Folio 1 and Volume 145283, Folio 2

Local government area: City of Hobart

Area of site (include units, e.g. hectares): Approximately 1,380 m^2

Current zoning: Central Business as defined in the Hobart Interim Planning Scheme 2015

Regulation and notification

To the best of my knowledge:

☐ **the site is** the subject of a declaration, order, agreement, proposal or notice under the *Contaminated Land Management Act 1997* or the *Environmentally Hazardous Chemicals Act 1985,* as follows: (provide the no. if applicable)

- ☐ Declaration no.
- ☐ Order no.
- ☐ Proposal no.
- ☐ Notice no.

☒ **the site is not** the subject of a declaration, order, proposal or notice under the *Contaminated Land Management Act 1997* or the *Environmentally Hazardous Chemicals Act 1985.*

To the best of my knowledge:

☐ the site **has** been notified to the EPA under section 60 of the *Contaminated Land Management Act 1997*

☒ the site **has not** been notified to the EPA under section 60 of the *Contaminated Land Management Act 1997.*

Site audit commissioned by

Name: Mac Hull

Company: Mobil Oil Australia Pty Ltd

Address: Level 9, 664 Collins Street, Docklands, VIC

Postcode: 3008

Phone: 03 9261 0657

Email: mac.hull@exxonmobil.com

Contact details for contact person (if different from above)

Name N/A

Phone

Email

Nature of statutory requirements (not applicable for non-statutory audits)

☐ Requirements under the *Contaminated Land Management Act* 1997 (e.g. management order; please specify, including date of issue)

☐ Requirements imposed by an environmental planning instrument (please specify, including date of issue)

☐ Development consent requirements under the *Environmental Planning and Assessment Act 1979* (please specify consent authority and date of issue)

☐ Requirements under other legislation (please specify, including date of issue)

Purpose of site audit

☒ **A1** To determine land use suitability

Intended uses of the land: Residential with gardens and accessible soil

OR

A2 To determine land use suitability subject to compliance with either an active or passive environmental management plan

Intended uses of the land:

OR

(Tick all that apply)

☐ **B1** To determine the nature and extent of contamination

☐ **B2** To determine the appropriateness of:

- ☐ an investigation plan
- ☐ a remediation plan
- ☐ a management plan

☐ **B3** To determine the appropriateness of a **site testing plan** to determine if groundwater is safe and suitable for its intended use as required by the *Temporary Water Restrictions Order for the Botany Sands Groundwater Resource 2017*

☐ **B4** To determine the compliance with an approved:

- ☐ **voluntary management proposal** or
- ☐ **management order** under the *Contaminated Land Management Act 1997*

☐ **B5** To determine if the land can be made suitable for a particular use (or uses) if the site is remediated or managed in accordance with a specified plan.

Intended uses of the land:

Information sources for site audit

Consultancies which conducted the site investigations and/or remediation:

IT Environmental (Australia) Pty Ltd (IT Environmental)

Coffey Environments Pty Ltd (Coffey)

JFTA Pty Ltd (JFTA)

ENSR Australia Pty Ltd (ENSR)

Environmental Resources Management Australia Pty Ltd (ERM)

Golder Associates Pty Ltd (Golder)

Titles of reports reviewed:

'Phase 1 Environmental Site Assessment – Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart Tasmania', 14 October 2003, IT Environmental

'Phase 2 Environmental Site Assessment – Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart Tasmania', 22 October 2003, IT Environmental

Letter 'Re Water sampling and vapour monitoring works undertaken at 198 Macquarie Street, Hobart, TAS, 7000', 5 October 2004, IT Environmental

Letter 'Re Temporary risk control measures undertaken at the property located at 198 Macquarie Street, Hobart, TAS, 7000', 22 December 2004, IT Environmental

Letter 'Re Water sampling and ongoing vapour monitoring works undertaken at 198 Macquarie Street, Hobart, Tasmania, 7000', 30 March 2005, IT Environmental

'Post Phase 2 Environmental Site Assessment (February 2005) – Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 1 April 2005, IT Environmental

'Remediation Action Plan - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 22 November 2005, IT Environmental

'Post Phase 2 Environmental Site Assessment - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 22 February 2006, IT Environmental

'Air Sampling and Groundwater Monitoring Event, Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 1 March 2006, IT Environmental

'Tank Excavation Assessment Report - Former Mobil Hobart Service Station (TO2603) 202 Macquarie Street, Hobart, Tasmania', 4 April 2006, IT Environmental

'Interim Air Sampling and Groundwater Monitoring Event - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 3 August 2006, Coffey

'Off-site Health Risk Assessment - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 27 July 2006, Coffey

'Site Summary Environmental Report - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 10 November 2006, Coffey

'On-site Health Risk Assessment - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 10 November 2006, Coffey

'Annual Groundwater Monitoring Event and Air Sampling, Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 18 January 2007, Coffey

Letter 'Former Mobil Hobart Service Station (T02603) - Well Decommissioning and Excavation and Backfilling of the Former Tank Pit', 2 May 2007, Coffey

'Post Phase 2 Environmental Site Assessment – Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 23 May 2007, Coffey

'Updated On-site Health Risk Assessment- Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 19 June 2007, Coffey

'Interim Groundwater Monitoring Event and Air Sampling, Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 30 July 2007, Coffey

'On-site Health Risk Assessment, Basement Structures - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 16 August 2007, Coffey

'Post Phase 2 Environmental Site Assessment – Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 24 January 2008, Coffey

Letter 'Re: Groundwater Multiphase Extraction and Air Treatment Event (23rd – 27th January, 2008), Former Mobil Service Station, 202 Macquarie Street, Hobart, Tasmania 7000', 13 February 2008, JFTA

'Mobil Groundwater Attenuation Assessments - Former Hobart Service Station Site, Hobart, Tasmania (TO2603)', 26 March 2008, ENSR

'Recommendation Letter, Mobil Hobart TO2603', 31 March 2008, ENSR

Letter 'Groundwater Gauging Results (28 March 2008) for the Former Mobil Hobart Service Station (TO2603)', 21 April 2008, Coffey

Letter 'Re: Groundwater Multiphase Extraction and Air Treatment Event (21st – 25th May, 2008), Former Mobil Service Station, 202 Macquarie Street, Hobart, Tasmania 7000', 25 July 2008, JFTA

'Remediation Technology Screening Review for Former Mobil Hobart Service Station (TO2603)', 4 August 2008, Coffey

'Interim Groundwater Monitoring Event and Air Sampling - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 16 September 2008, Coffey

'Annual GME & Air Sampling Event, Well Installation and Injection of Wells, Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 11 February 2009, Coffey

'Soil Vapour Well Installation and Sampling - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 18 February 2009, Coffey

'Updated Off-site Health Risk Assessment - Former Mobil Hobart Service Station (TO2603) 202 Macquarie Street, Hobart, Tasmania', 3 March 2009, Coffey

'Limited Groundwater Monitoring Event, Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania 7000', 26 May 2009, Coffey

'Interim Groundwater Monitoring Event and Air Sampling - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 28 July 2009, Coffey

'Review of Hydrogeological Data - Former Mobil Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 18 September 2009, Coffey

'Multiphase Extraction and Air Treatment Event (4th to 8 October 2009) - Former Mobil Service Station', 14 October 2009, JFTA

'Annual Groundwater Monitoring Event, Air Sampling Event and Well Injection Event - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 30 March 2010, Coffey

'Soil Vapour Sampling and Limited Groundwater Monitoring Event (GME) - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 2 August 2010, Coffey

'Combined MPEAT and Injection Event and Interim Groundwater Monitoring and Air Sampling Event, Former Mobil Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 10 September 2010, Coffey

'Soil Vapour Sampling and Limited Groundwater Monitoring Event - Former Mobil Hobart Service Station (TO22603), 202 Macquarie Street, Hobart, Tasmania', 22 November 2010, Coffey

'Site Status Report - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 18 January 2011, Coffey

'Health Risk Assessment - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 28 January 2011, Coffey

'Annual Groundwater Monitoring and Air Sampling Event, Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania 7000', 15 February 2011, Coffey

'Groundwater Monitoring Plan - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 9 May 2011, Coffey

'Environmental Management Plan - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 15 June 2011, Coffey

'Interim Groundwater Monitoring and Air Sampling Event, Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania 7000', 24 August 2011, Coffey

'Annual Groundwater Monitoring Event - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 20 February 2012, Coffey

Annual Groundwater Monitoring Event - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 13 March 2013, Coffey

'Groundwater Monitoring Event - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 29 January 2014, ERM

'Groundwater Management Plan Progress Report - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 12 February 2014, ERM

'Soil Vapour Monitoring Well Installation and Soil Investigation (Post Phase II ESA) - Mobil Hobart (TO2603)', 19 November 2014, ERM

'Soil Vapour Monitoring Event Report (Final) - Former Mobil Depot Hobart (TO2603)', 10 November 2014, ERM

'Soil Vapour Monitoring and Groundwater Monitoring Event (SVME and GME Report Final) - Mobil Hobart (TO2603)', 2 December 2014, ERM

'Mobil Hobart Site Closure Report, Mobil Hobart T02603', 4 October 2019, Golder

Other information reviewed, including previous site audit reports and statements relating to the site:

Environment Protection Notice 7222/1, 202 to 206 Macquarie Street, Hobart, Tasmania (Property Identification No. 5669117), issued to Mobil Oil Australia Pty Ltd by the Tasmania Department of Primary Industries, Water and Environment, 31 October 2005

Letter 'Former Mobil Service Station – 202 to 206 Macquarie Street, Hobart, Review of Site Status Report and EPN, issued to ExxonMobil Environmental Services by Tasmania EPA, 9 February 2011

Environment Protection Notice Completion Certificate, Notice 7222/1, 202 to 206 Macquarie Street, Hobart, Tasmania (Property Identification No. 5669117), issued to Mobil Oil Australia Pty Ltd by Tasmania EPA, 29 September 2011

Site Management Notice 8625/1, 202 to 206 Macquarie Street comprised in Certificates of Title 145283/1&2), issued to Mobil Oil Australia Pty Ltd by Tasmania EPA, 3 October 2011

Site Management Notice 8626/1, 202 to 206 Macquarie Street comprised in Certificates of Title 145283/1&2, issued to Mobil Oil Australia Pty Ltd by Tasmania EPA, 3 October 2011

Site Management Notice Completion Certificate, Notice 8625/1, 202 to 206 Macquarie Street comprised in Certificates of Title 145283/1&2, issued to Mobil Oil Australia Pty Ltd by Tasmania EPA, 21 March 2014

Site Management Notice Completion Certificate, Notice 8626/1, 202 to 206 Macquarie Street comprised in Certificates of Title 145283/1&2, issued to Mobil Oil Australia Pty Ltd by Tasmania EPA, 21 March 2014

Site audit report details

Title	Site Audit Report - Former Mobil Hobart Service Station TO2603, 202 Macquarie Street, Hobart, Tasmania	
Report no.	RS TAS 001 (Ramboll Ref: 318000205)	Date 30 October 2019

Part II: Auditor's findings

Please complete either Section A1, Section A2 or Section B, not more than one section. (Strike out the irrelevant sections.)

- Use **Section A1** where site investigation and/or remediation has been completed and a conclusion can be drawn on the suitability of land uses **without the implementation** of an environmental management plan.
- Use **Section A2** where site investigation and/or remediation has been completed and a conclusion can be drawn on the suitability of land uses **with the implementation** of an active or passive environmental management plan.
- Use **Section B** where the audit is to determine:
  - (B1) the nature and extent of contamination, and/or
  - (B2) the appropriateness of an investigation, remediation or management plan[1], and/or
  - (B3) the appropriateness of a site testing plan in accordance with the *Temporary Water Restrictions Order for the Botany Sands Groundwater Source 2017*, and/or
  - (B4) whether the terms of the approved voluntary management proposal or management order have been complied with, and/or
  - (B5) whether the site can be made suitable for a specified land use (or uses) if the site is remediated or managed in accordance with the implementation of a specified plan.

[1] For simplicity, this statement uses the term 'plan' to refer to both plans and reports.

Section A1

I certify that, in my opinion:

The **site is suitable** for the following uses:

(Tick all appropriate uses and strike out those not applicable.)

☐ ~~Residential, including substantial vegetable garden and poultry~~

☐ ~~Residential, including substantial vegetable garden, excluding poultry~~

☒ Residential with accessible soil, including garden (minimal home-grown produce contributing less than 10% fruit and vegetable intake), excluding poultry

☒ Day care centre, preschool, primary school

☒ Residential with minimal opportunity for soil access, including units

☒ Secondary school

☒ Park, recreational open space, playing field

☒ Commercial/industrial

☐ ~~Other (please specify):~~

~~OR~~

☐ ~~I certify that, in my opinion, the **site is not suitable** for any use due to the risk of harm from contamination.~~

Overall comments:

An 'environmental audit' assessment in accordance with section 5B of the Tasmania *Environmental Management and Pollution Control Act 1994 (the EMPC Act)* has been undertaken by Rowena Salmon, who is a Site Auditor accredited under the NSW *Contaminated Land Management Act 1997.*

There is currently no active regulation of the site. Environmental Protection Notice (EPN) 7222/1 was issued to Mobil by the Tasmania Environmental Protection Authority (EPA) on 31 October 2005. The EPN was completed and removed on 29 September 2011. Statutory regulation was then conducted through Site Management Notices (SMN) 8625/1 and 8626/1 issued on 3 October 2011.

SMN 8625/1 and SMN 8626/1 related to hydrocarbon contamination in groundwater. SMN 8625/1 was for the purpose of monitoring in accordance with the Groundwater Management Plan (GMP). SMN 8626/1 was for the purpose of prohibiting groundwater extraction and managing excavation works. The SMNs were revoked on 21 March 2014.

The site is a decommissioned service station. The site was first used for the distribution and storing of petroleum products in 1956 by the Vacuum Oil Company. The site continued to operate as a fuel distribution and storage facility with fuel infrastructure being installed and upgraded between 1957 and 1988. The site operated as an active service station until 2004. The site has remained vacant since 2005.

A dissolved phase hydrocarbon plume is present in groundwater in the northern portion of the site and extends offsite to the north and was considered likely to be sourced from the main tank farm.

Basements are present at 200 and 198 Macquarie Streets adjacent to the site to the north. In late 2004, temporary risk control measures (ventilation and explosion safe pump) were installed in the basement at 198 Macquarie Street. Groundwater ingress had accumulated in the basement after heavy rain and odour and sheen were noted. Hydrocarbon sheen was detected on the water and the new pump discharge was diverted to sewer with permission reportedly granted by Hobart Council.

Site decommissioning and the bulk of remediation was undertaken between May and September 2005. During this period, all petroleum related infrastructure was removed from the site including six underground storage tanks, a triple interceptor trap, product lines, bowsers, site buildings and structures, hoists and compressors. During these excavations, the bulk of the concrete was removed, and excavated soils were stockpiled for characterisation and disposal. Concrete surfaces remained around the fringes of the site and were removed in 2016.

Sheen was no longer observed in the water in the basement of 198 Macquarie Street by January 2006 during the round of monitoring completed after the excavation works in October 2005. Concentrations of petroleum hydrocarbons were monitored in the ambient air in the basement between January 2006 and June 2011. By December 2010 and June 2011, the concentrations measured had reduced to levels indicating a low risk to human health.

Groundwater remediation activities were also conducted at the site between January 2008 and 2010. Remediation and soil assessment work and a series of groundwater monitoring and soil vapour monitoring events were reviewed for the audit.

Groundwater petroleum hydrocarbon impact remains in the northern portion of the site and extends offsite. The plume has been delineated and is present beneath the adjacent sites located at 200 and 198 Macquarie Street to the north and beneath Macquarie Street to the northwest of the site. The edge of the plume is likely to be present beneath the buildings on the western side of Macquarie Street and does not extend significantly into Barrack Street to the north.

Groundwater impact, both on and offsite, has been assessed and is not considered to pose a risk to human health or the environment based on the proposed landuse, however petroleum hydrocarbon odour is likely to be present in groundwater within the plume. If groundwater were to ingress to a future basement structure onsite there may be petroleum hydrocarbon odour. In addition, groundwater should not be abstracted for beneficial reuse within the plume area without further assessment of suitability for the proposed use.

Section A2

I certify that, in my opinion:

Subject to compliance with the **attached** environmental management plan[2] (EMP), the site is suitable for the following uses:

(Tick all appropriate uses and strike out those not applicable.)

☐ Residential, including substantial vegetable garden and poultry

☐ Residential, including substantial vegetable garden, excluding poultry

☐ Residential with accessible soil, including garden (minimal home-grown produce contributing less than 10% fruit and vegetable intake), excluding poultry

☐ Day care centre, preschool, primary school

☐ Residential with minimal opportunity for soil access, including units

☐ Secondary school

☐ Park, recreational open space, playing field

☐ Commercial/industrial

☐ Other (please specify):

_____

EMP details

Title _____

Author _____

Date _____ No. of pages _____

EMP summary

This EMP (attached) is required to be implemented to address residual contamination on the site.

The EMP: (Tick appropriate box and strike out the other option.)

☐ requires operation and/or maintenance of **active** control systems[3]

☐ requires maintenance of **passive** control systems only[3].

[2] Refer to Part IV for an explanation of an environmental management plan.
[3] Refer to Part IV for definitions of active and passive control systems.

~~Purpose of the EMP:~~

~~Description of the nature of the residual contamination:~~

~~Summary of the actions required by the EMP:~~

~~How the EMP can reasonably be made to be legally enforceable:~~

~~How there will be appropriate public notification:~~

~~Overall comments:~~

Section B

Purpose of the plan[4] which is the subject of this audit:

_____

_____

_____

I certify that, in my opinion:

(B1)

☐ The nature and extent of the contamination **has** been appropriately determined

☐ The nature and extent of the contamination **has not** been appropriately determined

AND/OR (B2)

☐ The investigation, remediation or management plan **is** appropriate for the purpose stated above

☐ The investigation, remediation or management plan **is not** appropriate for the purpose stated above

AND/OR (B3)

☐ The site testing plan:

☐ **is** appropriate to determine

☐ **is not** appropriate to determine

if groundwater is safe and suitable for its intended use as required by the *Temporary Water Restrictions Order for the Botany Sands Groundwater Resource 2017*

AND/OR (B4)

☐ The terms of the approved voluntary management proposal* or management order** (strike out as appropriate):

☐ **have** been complied with

☐ **have not** been complied with.

*voluntary management proposal no.

**management order no.

AND/OR (B5)

☐ The site **can be made suitable** for the following uses:

(Tick all appropriate uses and strike out those not applicable.)

☐ Residential, including substantial vegetable garden and poultry

☐ Residential, including substantial vegetable garden, excluding poultry

[4] For simplicity, this statement uses the term 'plan' to refer to both plans and reports.

~~☐ Residential with accessible soil, including garden (minimal home-grown produce contributing less than 10% fruit and vegetable intake), excluding poultry~~

~~☐ Day care centre, preschool, primary school~~

~~☐ Residential with minimal opportunity for soil access, including units~~

~~☐ Secondary school~~

~~☐ Park, recreational open space, playing field~~

~~☐ Commercial/industrial~~

~~☐ Other (please specify):~~

~~IF the site is remediated/managed* in accordance with the following plan (**attached**):~~

~~*Strike out as appropriate~~

~~Plan title~~ _____

~~Plan author~~ _____

~~Plan date~~ _____ ~~No. of pages~~ _____

~~SUBJECT to compliance with the following condition(s):~~

_____

_____

_____

_____

_____

~~Overall comments:~~

_____

_____

_____

_____

_____

_____

Part III: Auditor's declaration

I am accredited as a site auditor by the NSW Environment Protection Authority (EPA) under the *Contaminated Land Management Act 1997*.

Accreditation no. NSW 1002

I certify that:

- I have completed the site audit free of any conflicts of interest as defined in the *Contaminated Land Management Act 1997*, and
- with due regard to relevant laws and guidelines, I have examined and am familiar with the reports and information referred to in Part I of this site audit, and
- on the basis of inquiries I have made of those individuals immediately responsible for making those reports and obtaining the information referred to in this statement, those reports and that information are, to the best of my knowledge, true, accurate and complete, and
- this statement is, to the best of my knowledge, true, accurate and complete.

I am aware that there are penalties under the *Contaminated Land Management Act 1997* for wilfully making false or misleading statements.

Signed: RSC

Date: 30 October 2019

Part IV: Explanatory notes

To be complete, a site audit statement form must be issued with all four parts.

How to complete this form

Part I

Part I identifies the auditor, the site, the purpose of the audit and the information used by the auditor in making the site audit findings.

Part II

Part II contains the auditor's opinion of the suitability of the site for specified uses or of the appropriateness of an investigation, or remediation plan or management plan which may enable a particular use. It sets out succinct and definitive information to assist decision-making about the use or uses of the site or a plan or proposal to manage or remediate the site.

The auditor is to complete either Section A1 or Section A2 or Section B of Part II, **not** more than one section.

Section A1

In Section A1 the auditor may conclude that the land is *suitable* for a specified use or uses OR *not suitable* for any beneficial use due to the risk of harm from contamination.

By certifying that the site is *suitable*, an auditor declares that, at the time of completion of the site audit, no further investigation or remediation or management of the site was needed to render the site fit for the specified use(s). **Conditions must not be** imposed on a Section A1 site audit statement. Auditors may include **comments** which are key observations in light of the audit which are not directly related to the suitability of the site for the use(s). These observations may cover aspects relating to the broader environmental context to aid decision-making in relation to the site.

Section A2

In Section A2 the auditor may conclude that the land is *suitable* for a specified use(s) subject to a condition for implementation of an environmental management plan (EMP).

Environmental management plan

Within the context of contaminated sites management, an EMP (sometimes also called a 'site management plan') means a plan which addresses the integration of environmental mitigation and monitoring measures for soil, groundwater and/or hazardous ground gases throughout an existing or proposed land use. An EMP succinctly describes the nature and location of contamination remaining on site and states what the objectives of the plan are, how contaminants will be managed, who will be responsible for the plan's implementation and over what time frame actions specified in the plan will take place.

By certifying that the site is suitable subject to implementation of an EMP, an auditor declares that, at the time of completion of the site audit, there was sufficient information satisfying guidelines made or approved under the *Contaminated Land Management Act 1997*

(CLM Act) to determine that implementation of the EMP was feasible and would enable the specified use(s) of the site and no further investigation or remediation of the site was needed to render the site fit for the specified use(s).

Implementation of an EMP is required to ensure the site remains suitable for the specified use(s). The plan should be legally enforceable: for example, a requirement of a notice under the CLM Act or a development consent condition issued by a planning authority. There should also be appropriate public notification of the plan, e.g. on a certificate issued under s.149 of *the Environmental Planning and Assessment Act 1979*.

Active or passive control systems

Auditors must specify whether the EMP requires operation and/or maintenance of active control systems or requires maintenance of passive control systems only. Active management systems usually incorporate mechanical components and/or require monitoring and, because of this, regular maintenance and inspection are necessary. Most active management systems are applied at sites where if the systems are not implemented an unacceptable risk may occur. Passive management systems usually require minimal management and maintenance and do not usually incorporate mechanical components.

Auditor's comments

Auditors may also include **comments** which are key observations in light of the audit which are not directly related to the suitability of the site for the use(s). These observations may cover aspects relating to the broader environmental context to aid decision-making in relation to the site.

Section B

In Section B the auditor draws conclusions on the nature and extent of contamination, and/or suitability of plans relating to the investigation, remediation or management of the land, and/or the appropriateness of a site testing plan in accordance with the *Temporary Water Restrictions Order for the Botany Sands Groundwater Source 2017*, and/or whether the terms of an approved voluntary management proposal or management order made under the CLM Act have been complied with, and/or whether the site can be made suitable for a specified land use or uses if the site is remediated or managed in accordance with the implementation of a specified plan.

By certifying that a site *can be made suitable* for a use or uses if remediated or managed in accordance with a specified plan, the auditor declares that, at the time the audit was completed, there was sufficient information satisfying guidelines made or approved under the CLM Act to determine that implementation of the plan was feasible and would enable the specified use(s) of the site in the future.

For a site that *can be made suitable*, any **conditions** specified by the auditor in Section B should be limited to minor modifications or additions to the specified plan. However, if the auditor considers that further audits of the site (e.g. to validate remediation) are required, the auditor must note this as a condition in the site audit statement. The condition must not specify an individual auditor, only that further audits are required.

Auditors may also include **comments** which are observations in light of the audit which provide a more complete understanding of the environmental context to aid decision-making in relation to the site.

Part III

In **Part III** the auditor certifies their standing as an accredited auditor under the CLM Act and makes other relevant declarations.

Where to send completed forms

In addition to furnishing a copy of the audit statement to the person(s) who commissioned the site audit, statutory site audit statements must be sent to

- the **NSW Environment Protection Authority**:
  nswauditors@epa.nsw.gov.au or as specified by the EPA

  AND
- the **local council** for the land which is the subject of the audit.

RAMBOLL

Ramboll Australia Pty Ltd
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North Sydney NSW 2060

T +61 2 9954 8100

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Mac Hull
Contract Project Manager

Project No. 1418584-345-L-Rev0
6 November 2019

ATTACHMENT 2

Site Audit Statement

NSW Site Auditor Scheme

Site Audit Statement

A site audit statement summarises the findings of a site audit. For full details of the site auditor's findings, evaluations and conclusions, refer to the associated site audit report.

This form was approved under the *Contaminated Land Management Act 1997* on 12 October 2017.

For information about completing this form, go to Part IV.

Part I: Site audit identification

Site audit statement no. RS TAS 001

This site audit is a:

☐ statutory audit

☒ non-statutory audit

within the meaning of the *Contaminated Land Management Act 1997*.

Site auditor details

(As accredited under the *Contaminated Land Management Act 1997*)

Name	Rowena Salmon
Company	Ramboll Australia Pty Ltd
Address	Level 3
	100 Pacific Highway, North Sydney
	Postcode 2060
Phone	02 9954 8100
Email	rsalmon@ramboll.com

Site details

Address: 202 Macquarie Street, Hobart, TAS Postcode 7000

Property description

(Attach a separate list if several properties are included in the site audit.)

Certificates of Title Volume 145283, Folio 1 and Volume 145283, Folio 2

Local government area: City of Hobart

Area of site (include units, e.g. hectares): Approximately 1,380 m^2

Current zoning: Central Business as defined in the Hobart Interim Planning Scheme 2015

Regulation and notification

To the best of my knowledge:

☐ **the site is** the subject of a declaration, order, agreement, proposal or notice under the *Contaminated Land Management Act 1997* or the *Environmentally Hazardous Chemicals Act 1985,* as follows: (provide the no. if applicable)

- ☐ Declaration no.
- ☐ Order no.
- ☐ Proposal no.
- ☐ Notice no.

☒ **the site is not** the subject of a declaration, order, proposal or notice under the *Contaminated Land Management Act 1997* or the *Environmentally Hazardous Chemicals Act 1985.*

To the best of my knowledge:

☐ the site **has** been notified to the EPA under section 60 of the *Contaminated Land Management Act 1997*

☒ the site **has not** been notified to the EPA under section 60 of the *Contaminated Land Management Act 1997.*

Site audit commissioned by

Name: Mac Hull

Company: Mobil Oil Australia Pty Ltd

Address: Level 9, 664 Collins Street, Docklands, VIC

Postcode: 3008

Phone: 03 9261 0657

Email: mac.hull@exxonmobil.com

Contact details for contact person (if different from above)

Name N/A

Phone

Email

Nature of statutory requirements (not applicable for non-statutory audits)

☐ Requirements under the *Contaminated Land Management Act* 1997 (e.g. management order; please specify, including date of issue)

☐ Requirements imposed by an environmental planning instrument (please specify, including date of issue)

☐ Development consent requirements under the *Environmental Planning and Assessment Act 1979* (please specify consent authority and date of issue)

☐ Requirements under other legislation (please specify, including date of issue)

Purpose of site audit

☒ **A1** To determine land use suitability

Intended uses of the land: Residential with gardens and accessible soil

OR

A2 To determine land use suitability subject to compliance with either an active or passive environmental management plan

Intended uses of the land:

OR

(Tick all that apply)

☐ **B1** To determine the nature and extent of contamination

☐ **B2** To determine the appropriateness of:

- ☐ an investigation plan
- ☐ a remediation plan
- ☐ a management plan

☐ **B3** To determine the appropriateness of a **site testing plan** to determine if groundwater is safe and suitable for its intended use as required by the *Temporary Water Restrictions Order for the Botany Sands Groundwater Resource 2017*

☐ **B4** To determine the compliance with an approved:

- ☐ **voluntary management proposal** or
- ☐ **management order** under the *Contaminated Land Management Act 1997*

☐ **B5** To determine if the land can be made suitable for a particular use (or uses) if the site is remediated or managed in accordance with a specified plan.

Intended uses of the land:

Information sources for site audit

Consultancies which conducted the site investigations and/or remediation:

IT Environmental (Australia) Pty Ltd (IT Environmental)

Coffey Environments Pty Ltd (Coffey)

JFTA Pty Ltd (JFTA)

ENSR Australia Pty Ltd (ENSR)

Environmental Resources Management Australia Pty Ltd (ERM)

Golder Associates Pty Ltd (Golder)

Titles of reports reviewed:

'Phase 1 Environmental Site Assessment – Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart Tasmania', 14 October 2003, IT Environmental

'Phase 2 Environmental Site Assessment – Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart Tasmania', 22 October 2003, IT Environmental

Letter 'Re Water sampling and vapour monitoring works undertaken at 198 Macquarie Street, Hobart, TAS, 7000', 5 October 2004, IT Environmental

Letter 'Re Temporary risk control measures undertaken at the property located at 198 Macquarie Street, Hobart, TAS, 7000', 22 December 2004, IT Environmental

Letter 'Re Water sampling and ongoing vapour monitoring works undertaken at 198 Macquarie Street, Hobart, Tasmania, 7000', 30 March 2005, IT Environmental

'Post Phase 2 Environmental Site Assessment (February 2005) – Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 1 April 2005, IT Environmental

'Remediation Action Plan - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 22 November 2005, IT Environmental

'Post Phase 2 Environmental Site Assessment - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 22 February 2006, IT Environmental

'Air Sampling and Groundwater Monitoring Event, Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 1 March 2006, IT Environmental

'Tank Excavation Assessment Report - Former Mobil Hobart Service Station (TO2603) 202 Macquarie Street, Hobart, Tasmania', 4 April 2006, IT Environmental

'Interim Air Sampling and Groundwater Monitoring Event - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 3 August 2006, Coffey

'Off-site Health Risk Assessment - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 27 July 2006, Coffey

'Site Summary Environmental Report - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 10 November 2006, Coffey

'On-site Health Risk Assessment - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 10 November 2006, Coffey

'Annual Groundwater Monitoring Event and Air Sampling, Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 18 January 2007, Coffey

Letter 'Former Mobil Hobart Service Station (T02603) - Well Decommissioning and Excavation and Backfilling of the Former Tank Pit', 2 May 2007, Coffey

'Post Phase 2 Environmental Site Assessment – Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 23 May 2007, Coffey

'Updated On-site Health Risk Assessment- Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 19 June 2007, Coffey

'Interim Groundwater Monitoring Event and Air Sampling, Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 30 July 2007, Coffey

'On-site Health Risk Assessment, Basement Structures - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 16 August 2007, Coffey

'Post Phase 2 Environmental Site Assessment – Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 24 January 2008, Coffey

Letter 'Re: Groundwater Multiphase Extraction and Air Treatment Event (23rd – 27th January, 2008), Former Mobil Service Station, 202 Macquarie Street, Hobart, Tasmania 7000', 13 February 2008, JFTA

'Mobil Groundwater Attenuation Assessments - Former Hobart Service Station Site, Hobart, Tasmania (TO2603)', 26 March 2008, ENSR

'Recommendation Letter, Mobil Hobart TO2603', 31 March 2008, ENSR

Letter 'Groundwater Gauging Results (28 March 2008) for the Former Mobil Hobart Service Station (TO2603)', 21 April 2008, Coffey

Letter 'Re: Groundwater Multiphase Extraction and Air Treatment Event (21st – 25th May, 2008), Former Mobil Service Station, 202 Macquarie Street, Hobart, Tasmania 7000', 25 July 2008, JFTA

'Remediation Technology Screening Review for Former Mobil Hobart Service Station (TO2603)', 4 August 2008, Coffey

'Interim Groundwater Monitoring Event and Air Sampling - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 16 September 2008, Coffey

'Annual GME & Air Sampling Event, Well Installation and Injection of Wells, Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 11 February 2009, Coffey

'Soil Vapour Well Installation and Sampling - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 18 February 2009, Coffey

'Updated Off-site Health Risk Assessment - Former Mobil Hobart Service Station (TO2603) 202 Macquarie Street, Hobart, Tasmania', 3 March 2009, Coffey

'Limited Groundwater Monitoring Event, Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania 7000', 26 May 2009, Coffey

'Interim Groundwater Monitoring Event and Air Sampling - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 28 July 2009, Coffey

'Review of Hydrogeological Data - Former Mobil Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 18 September 2009, Coffey

'Multiphase Extraction and Air Treatment Event (4th to 8 October 2009) - Former Mobil Service Station', 14 October 2009, JFTA

'Annual Groundwater Monitoring Event, Air Sampling Event and Well Injection Event - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 30 March 2010, Coffey

'Soil Vapour Sampling and Limited Groundwater Monitoring Event (GME) - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 2 August 2010, Coffey

'Combined MPEAT and Injection Event and Interim Groundwater Monitoring and Air Sampling Event, Former Mobil Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 10 September 2010, Coffey

'Soil Vapour Sampling and Limited Groundwater Monitoring Event - Former Mobil Hobart Service Station (TO22603), 202 Macquarie Street, Hobart, Tasmania', 22 November 2010, Coffey

'Site Status Report - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 18 January 2011, Coffey

'Health Risk Assessment - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 28 January 2011, Coffey

'Annual Groundwater Monitoring and Air Sampling Event, Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania 7000', 15 February 2011, Coffey

'Groundwater Monitoring Plan - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 9 May 2011, Coffey

'Environmental Management Plan - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 15 June 2011, Coffey

'Interim Groundwater Monitoring and Air Sampling Event, Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania 7000', 24 August 2011, Coffey

'Annual Groundwater Monitoring Event - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 20 February 2012, Coffey

Annual Groundwater Monitoring Event - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 13 March 2013, Coffey

'Groundwater Monitoring Event - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 29 January 2014, ERM

'Groundwater Management Plan Progress Report - Former Mobil Hobart Service Station (TO2603), 202 Macquarie Street, Hobart, Tasmania', 12 February 2014, ERM

'Soil Vapour Monitoring Well Installation and Soil Investigation (Post Phase II ESA) - Mobil Hobart (TO2603)', 19 November 2014, ERM

'Soil Vapour Monitoring Event Report (Final) - Former Mobil Depot Hobart (TO2603)', 10 November 2014, ERM

'Soil Vapour Monitoring and Groundwater Monitoring Event (SVME and GME Report Final) - Mobil Hobart (TO2603)', 2 December 2014, ERM

'Mobil Hobart Site Closure Report, Mobil Hobart T02603', 4 October 2019, Golder

Other information reviewed, including previous site audit reports and statements relating to the site:

Environment Protection Notice 7222/1, 202 to 206 Macquarie Street, Hobart, Tasmania (Property Identification No. 5669117), issued to Mobil Oil Australia Pty Ltd by the Tasmania Department of Primary Industries, Water and Environment, 31 October 2005
Letter 'Former Mobil Service Station – 202 to 206 Macquarie Street, Hobart, Review of Site Status Report and EPN, issued to ExxonMobil Environmental Services by Tasmania EPA, 9 February 2011
Environment Protection Notice Completion Certificate, Notice 7222/1, 202 to 206 Macquarie Street, Hobart, Tasmania (Property Identification No. 5669117), issued to Mobil Oil Australia Pty Ltd by Tasmania EPA, 29 September 2011
Site Management Notice 8625/1, 202 to 206 Macquarie Street comprised in Certificates of Title 145283/1&2), issued to Mobil Oil Australia Pty Ltd by Tasmania EPA, 3 October 2011
Site Management Notice 8626/1, 202 to 206 Macquarie Street comprised in Certificates of Title 145283/1&2, issued to Mobil Oil Australia Pty Ltd by Tasmania EPA, 3 October 2011
Site Management Notice Completion Certificate, Notice 8625/1, 202 to 206 Macquarie Street comprised in Certificates of Title 145283/1&2, issued to Mobil Oil Australia Pty Ltd by Tasmania EPA, 21 March 2014
Site Management Notice Completion Certificate, Notice 8626/1, 202 to 206 Macquarie Street comprised in Certificates of Title 145283/1&2, issued to Mobil Oil Australia Pty Ltd by Tasmania EPA, 21 March 2014

Site audit report details

Title	Site Audit Report - Former Mobil Hobart Service Station TO2603, 202 Macquarie Street, Hobart, Tasmania	
Report no.	RS TAS 001 (Ramboll Ref: 318000205)	Date 30 October 2019

Part II: Auditor's findings

Please complete either Section A1, Section A2 or Section B, not more than one section. (Strike out the irrelevant sections.)

- Use **Section A1** where site investigation and/or remediation has been completed and a conclusion can be drawn on the suitability of land uses **without the implementation** of an environmental management plan.
- Use **Section A2** where site investigation and/or remediation has been completed and a conclusion can be drawn on the suitability of land uses **with the implementation** of an active or passive environmental management plan.
- Use **Section B** where the audit is to determine:
  - (B1) the nature and extent of contamination, and/or
  - (B2) the appropriateness of an investigation, remediation or management plan[1], and/or
  - (B3) the appropriateness of a site testing plan in accordance with the *Temporary Water Restrictions Order for the Botany Sands Groundwater Source 2017*, and/or
  - (B4) whether the terms of the approved voluntary management proposal or management order have been complied with, and/or
  - (B5) whether the site can be made suitable for a specified land use (or uses) if the site is remediated or managed in accordance with the implementation of a specified plan.

[1] For simplicity, this statement uses the term 'plan' to refer to both plans and reports.

Section A1

I certify that, in my opinion:

The **site is suitable** for the following uses:

(Tick all appropriate uses and strike out those not applicable.)

☐ ~~Residential, including substantial vegetable garden and poultry~~

☐ ~~Residential, including substantial vegetable garden, excluding poultry~~

☒ Residential with accessible soil, including garden (minimal home-grown produce contributing less than 10% fruit and vegetable intake), excluding poultry

☒ Day care centre, preschool, primary school

☒ Residential with minimal opportunity for soil access, including units

☒ Secondary school

☒ Park, recreational open space, playing field

☒ Commercial/industrial

☐ ~~Other (please specify):~~

~~**OR**~~

☐ ~~I certify that, in my opinion, the **site is not suitable** for any use due to the risk of harm from contamination.~~

Overall comments:

An 'environmental audit' assessment in accordance with section 5B of the Tasmania *Environmental Management and Pollution Control Act 1994 (the EMPC Act)* has been undertaken by Rowena Salmon, who is a Site Auditor accredited under the NSW *Contaminated Land Management Act 1997*.

There is currently no active regulation of the site. Environmental Protection Notice (EPN) 7222/1 was issued to Mobil by the Tasmania Environmental Protection Authority (EPA) on 31 October 2005. The EPN was completed and removed on 29 September 2011. Statutory regulation was then conducted through Site Management Notices (SMN) 8625/1 and 8626/1 issued on 3 October 2011.

SMN 8625/1 and SMN 8626/1 related to hydrocarbon contamination in groundwater. SMN 8625/1 was for the purpose of monitoring in accordance with the Groundwater Management Plan (GMP). SMN 8626/1 was for the purpose of prohibiting groundwater extraction and managing excavation works. The SMNs were revoked on 21 March 2014.

The site is a decommissioned service station. The site was first used for the distribution and storing of petroleum products in 1956 by the Vacuum Oil Company. The site continued to operate as a fuel distribution and storage facility with fuel infrastructure being installed and upgraded between 1957 and 1988. The site operated as an active service station until 2004. The site has remained vacant since 2005.

A dissolved phase hydrocarbon plume is present in groundwater in the northern portion of the site and extends offsite to the north and was considered likely to be sourced from the main tank farm.

Basements are present at 200 and 198 Macquarie Streets adjacent to the site to the north. In late 2004, temporary risk control measures (ventilation and explosion safe pump) were installed in the basement at 198 Macquarie Street. Groundwater ingress had accumulated in the basement after heavy rain and odour and sheen were noted. Hydrocarbon sheen was detected on the water and the new pump discharge was diverted to sewer with permission reportedly granted by Hobart Council.

Site decommissioning and the bulk of remediation was undertaken between May and September 2005. During this period, all petroleum related infrastructure was removed from the site including six underground storage tanks, a triple interceptor trap, product lines, bowsers, site buildings and structures, hoists and compressors. During these excavations, the bulk of the concrete was removed, and excavated soils were stockpiled for characterisation and disposal. Concrete surfaces remained around the fringes of the site and were removed in 2016.

Sheen was no longer observed in the water in the basement of 198 Macquarie Street by January 2006 during the round of monitoring completed after the excavation works in October 2005. Concentrations of petroleum hydrocarbons were monitored in the ambient air in the basement between January 2006 and June 2011. By December 2010 and June 2011, the concentrations measured had reduced to levels indicating a low risk to human health.

Groundwater remediation activities were also conducted at the site between January 2008 and 2010. Remediation and soil assessment work and a series of groundwater monitoring and soil vapour monitoring events were reviewed for the audit.

Groundwater petroleum hydrocarbon impact remains in the northern portion of the site and extends offsite. The plume has been delineated and is present beneath the adjacent sites located at 200 and 198 Macquarie Street to the north and beneath Macquarie Street to the northwest of the site. The edge of the plume is likely to be present beneath the buildings on the western side of Macquarie Street and does not extend significantly into Barrack Street to the north.

Groundwater impact, both on and offsite, has been assessed and is not considered to pose a risk to human health or the environment based on the proposed landuse, however petroleum hydrocarbon odour is likely to be present in groundwater within the plume. If groundwater were to ingress to a future basement structure onsite there may be petroleum hydrocarbon odour. In addition, groundwater should not be abstracted for beneficial reuse within the plume area without further assessment of suitability for the proposed use.

Section A2

I certify that, in my opinion:

Subject to compliance with the **attached** environmental management plan[2] (EMP), the site is suitable for the following uses:

(Tick all appropriate uses and strike out those not applicable.)

☐ Residential, including substantial vegetable garden and poultry

☐ Residential, including substantial vegetable garden, excluding poultry

☐ Residential with accessible soil, including garden (minimal home-grown produce contributing less than 10% fruit and vegetable intake), excluding poultry

☐ Day care centre, preschool, primary school

☐ Residential with minimal opportunity for soil access, including units

☐ Secondary school

☐ Park, recreational open space, playing field

☐ Commercial/industrial

☐ Other (please specify):

_____

EMP details

Title _____

Author _____

Date _____ No. of pages _____

EMP summary

This EMP (attached) is required to be implemented to address residual contamination on the site.

The EMP: (Tick appropriate box and strike out the other option.)

☐ requires operation and/or maintenance of **active** control systems[3]

☐ requires maintenance of **passive** control systems only[3].

[2] Refer to Part IV for an explanation of an environmental management plan.
[3] Refer to Part IV for definitions of active and passive control systems.

~~Purpose of the EMP:~~

~~Description of the nature of the residual contamination:~~

~~Summary of the actions required by the EMP:~~

~~How the EMP can reasonably be made to be legally enforceable:~~

~~How there will be appropriate public notification:~~

~~Overall comments:~~

Section B

Purpose of the plan[4] which is the subject of this audit:

_____

_____

_____

I certify that, in my opinion:

(B1)

☐ The nature and extent of the contamination **has** been appropriately determined

☐ The nature and extent of the contamination **has not** been appropriately determined

AND/OR (B2)

☐ The investigation, remediation or management plan **is** appropriate for the purpose stated above

☐ The investigation, remediation or management plan **is not** appropriate for the purpose stated above

AND/OR (B3)

☐ The site testing plan:

☐ **is** appropriate to determine

☐ **is not** appropriate to determine

if groundwater is safe and suitable for its intended use as required by the *Temporary Water Restrictions Order for the Botany Sands Groundwater Resource 2017*

AND/OR (B4)

☐ The terms of the approved voluntary management proposal* or management order** (strike out as appropriate):

☐ **have** been complied with

☐ **have not** been complied with.

*voluntary management proposal no. _____

**management order no. _____

AND/OR (B5)

☐ The site **can be made suitable** for the following uses:

(Tick all appropriate uses and strike out those not applicable.)

☐ Residential, including substantial vegetable garden and poultry

☐ Residential, including substantial vegetable garden, excluding poultry

[4] For simplicity, this statement uses the term 'plan' to refer to both plans and reports.

~~☐ Residential with accessible soil, including garden (minimal home-grown produce contributing less than 10% fruit and vegetable intake), excluding poultry~~

~~☐ Day care centre, preschool, primary school~~

~~☐ Residential with minimal opportunity for soil access, including units~~

~~☐ Secondary school~~

~~☐ Park, recreational open space, playing field~~

~~☐ Commercial/industrial~~

~~☐ Other (please specify):~~

~~IF the site is remediated/managed* in accordance with the following plan (**attached**):~~

~~*Strike out as appropriate~~

~~Plan title~~

~~Plan author~~

~~Plan date~~ ~~No. of pages~~

~~SUBJECT to compliance with the following condition(s):~~

~~Overall comments:~~

Part III: Auditor's declaration

I am accredited as a site auditor by the NSW Environment Protection Authority (EPA) under the *Contaminated Land Management Act 1997*.

Accreditation no. NSW 1002

I certify that:

- I have completed the site audit free of any conflicts of interest as defined in the *Contaminated Land Management Act 1997*, and
- with due regard to relevant laws and guidelines, I have examined and am familiar with the reports and information referred to in Part I of this site audit, and
- on the basis of inquiries I have made of those individuals immediately responsible for making those reports and obtaining the information referred to in this statement, those reports and that information are, to the best of my knowledge, true, accurate and complete, and
- this statement is, to the best of my knowledge, true, accurate and complete.

I am aware that there are penalties under the *Contaminated Land Management Act 1997* for wilfully making false or misleading statements.

Signed: RSC

Date: 30 October 2019

Part IV: Explanatory notes

To be complete, a site audit statement form must be issued with all four parts.

How to complete this form

Part I

Part I identifies the auditor, the site, the purpose of the audit and the information used by the auditor in making the site audit findings.

Part II

Part II contains the auditor's opinion of the suitability of the site for specified uses or of the appropriateness of an investigation, or remediation plan or management plan which may enable a particular use. It sets out succinct and definitive information to assist decision-making about the use or uses of the site or a plan or proposal to manage or remediate the site.

The auditor is to complete either Section A1 or Section A2 or Section B of Part II, **not** more than one section.

Section A1

In Section A1 the auditor may conclude that the land is *suitable* for a specified use or uses OR *not suitable* for any beneficial use due to the risk of harm from contamination.

By certifying that the site is *suitable*, an auditor declares that, at the time of completion of the site audit, no further investigation or remediation or management of the site was needed to render the site fit for the specified use(s). **Conditions must not be** imposed on a Section A1 site audit statement. Auditors may include **comments** which are key observations in light of the audit which are not directly related to the suitability of the site for the use(s). These observations may cover aspects relating to the broader environmental context to aid decision-making in relation to the site.

Section A2

In Section A2 the auditor may conclude that the land is *suitable* for a specified use(s) subject to a condition for implementation of an environmental management plan (EMP).

Environmental management plan

Within the context of contaminated sites management, an EMP (sometimes also called a 'site management plan') means a plan which addresses the integration of environmental mitigation and monitoring measures for soil, groundwater and/or hazardous ground gases throughout an existing or proposed land use. An EMP succinctly describes the nature and location of contamination remaining on site and states what the objectives of the plan are, how contaminants will be managed, who will be responsible for the plan's implementation and over what time frame actions specified in the plan will take place.

By certifying that the site is suitable subject to implementation of an EMP, an auditor declares that, at the time of completion of the site audit, there was sufficient information satisfying guidelines made or approved under the *Contaminated Land Management Act 1997*

(CLM Act) to determine that implementation of the EMP was feasible and would enable the specified use(s) of the site and no further investigation or remediation of the site was needed to render the site fit for the specified use(s).

Implementation of an EMP is required to ensure the site remains suitable for the specified use(s). The plan should be legally enforceable: for example, a requirement of a notice under the CLM Act or a development consent condition issued by a planning authority. There should also be appropriate public notification of the plan, e.g. on a certificate issued under s.149 of *the Environmental Planning and Assessment Act 1979*.

Active or passive control systems

Auditors must specify whether the EMP requires operation and/or maintenance of active control systems or requires maintenance of passive control systems only. Active management systems usually incorporate mechanical components and/or require monitoring and, because of this, regular maintenance and inspection are necessary. Most active management systems are applied at sites where if the systems are not implemented an unacceptable risk may occur. Passive management systems usually require minimal management and maintenance and do not usually incorporate mechanical components.

Auditor's comments

Auditors may also include **comments** which are key observations in light of the audit which are not directly related to the suitability of the site for the use(s). These observations may cover aspects relating to the broader environmental context to aid decision-making in relation to the site.

Section B

In Section B the auditor draws conclusions on the nature and extent of contamination, and/or suitability of plans relating to the investigation, remediation or management of the land, and/or the appropriateness of a site testing plan in accordance with the *Temporary Water Restrictions Order for the Botany Sands Groundwater Source 2017*, and/or whether the terms of an approved voluntary management proposal or management order made under the CLM Act have been complied with, and/or whether the site can be made suitable for a specified land use or uses if the site is remediated or managed in accordance with the implementation of a specified plan.

By certifying that a site *can be made suitable* for a use or uses if remediated or managed in accordance with a specified plan, the auditor declares that, at the time the audit was completed, there was sufficient information satisfying guidelines made or approved under the CLM Act to determine that implementation of the plan was feasible and would enable the specified use(s) of the site in the future.

For a site that *can be made suitable*, any **conditions** specified by the auditor in Section B should be limited to minor modifications or additions to the specified plan. However, if the auditor considers that further audits of the site (e.g. to validate remediation) are required, the auditor must note this as a condition in the site audit statement. The condition must not specify an individual auditor, only that further audits are required.

Auditors may also include **comments** which are observations in light of the audit which provide a more complete understanding of the environmental context to aid decision-making in relation to the site.

Part III

In **Part III** the auditor certifies their standing as an accredited auditor under the CLM Act and makes other relevant declarations.

Where to send completed forms

In addition to furnishing a copy of the audit statement to the person(s) who commissioned the site audit, statutory site audit statements must be sent to

- the **NSW Environment Protection Authority**:
  nswauditors@epa.nsw.gov.au or as specified by the EPA

  AND
- the **local council** for the land which is the subject of the audit.

Mac Hull
Contract Project Manager

Project No. 1418584-345-L-Rev0
6 November 2019

ATTACHMENT 3

Important Information Relating to this Report

GOLDER IMPORTANT INFORMATION RELATING TO THIS REPORT

IMPORTANT INFORMATION RELATING TO THIS REPORT – MOBIL

The document ("Report") to which this page is attached and which this page forms a part of, has been issued by Golder Associates Pty Ltd ("Golder") subject to the important limitations and other qualifications set out below.

This Report constitutes or is part of services ("Services") provided by Golder to Mobil Oil Australia Pty Ltd ("Mobil") under and subject to a contract between Golder and Mobil ("Contract"). The contents of this page are not intended to and do not alter Golder's obligations (including any limits on those obligations) to Mobil under the Contract. Terms defined in the Contract have the same meaning in this section of this Report.

Golder has performed the Services in accordance with the Contract as a third party independent contractor qualified to provide certification by means of a direct expression of opinion as to the No Further Action status of a No Further Action Site (including any Contamination issues where applicable) and/or delivery of Interim Monitoring Services to and Interim Monitoring Site and that such reports have been commissioned on the basis not only for reliance by Mobil upon the opinions expressed but also for reliance by and the benefit of any purchaser from Mobil, any lender to a purchaser from Mobil, any lessor to Mobil, any assignee of a real estate interest from Mobil or any owner, occupier (howsoever described) or user of land or person otherwise affected by Covered Contamination (including, for example, a purchaser from an owner of the land, a lessee from an owner of the land or an assignee of a lessee from an owner of the land.)

Subject to application of any law to the contrary, no person referred to above shall obtain any rights against Golder hereunder that are greater than the rights which Mobil would have had against Golder if it was Mobil that had suffered the loss and damage that is alleged to have been suffered by such person.

In no circumstances is Mobil making any statement, representation, warranty or endorsement as to the adequacy or otherwise of any No Further Action report or Interim Monitoring report of documentation provided to Mobil by Golders which Mobil may distribute to a third party.

This Report has been prepared in the context of the circumstances and purposes referred to in, or derived from, the Contract and Golder accepts no responsibility for use of the Report, in whole or in part, in any other context or circumstance or for any other purpose.

The scope of Golder's Services and the period of time they relate to are determined by the Contract and are subject to restrictions and limitations set out in the Contract. If a service or other work is not expressly referred to in this Report, do not assume that it has been provided or performed. If a matter is not addressed in this Report, do not assume that any determination has been made by Golder in regards to it.

At any location relevant to the Services conditions may exist which were not detected by Golder, in particular due to the specific scope of the investigation Golder has been engaged to undertake. Conditions can only be verified at the exact location of any tests undertaken. Variations in conditions may occur between tested locations and there may be conditions which have not been revealed by the investigation and which have not therefore been taken into account in this Report.

Golder accepts no responsibility for and makes no representation as to the accuracy or completeness of the information provided to it by or on behalf of Mobil or sourced from any third party. Golder has assumed that such information is correct unless otherwise stated and no responsibility is accepted by Golder for incomplete or inaccurate data supplied by Mobil or any other person for whom Golder is not responsible. Golder has not taken

GOLDER IMPORTANT INFORMATION RELATING TO THIS REPORT

account of matters that may have existed when the Report was prepared but which were only later disclosed to Golder.

Having regard to the matters referred to in the previous paragraphs on this page in particular, carrying out the Services has allowed Golder to form no more than an opinion as to the actual conditions at any relevant location. That opinion is necessarily constrained by the extent of the information collected by Golder or otherwise made available to Golder. Further, the passage of time may affect the accuracy, applicability or usefulness of the opinions, assessments or other information in this Report. This Report is based upon the information and other circumstances that existed and were known to Golder when the Services were performed and this Report was prepared. Golder has not considered the effect of any possible future developments including physical changes to any relevant location or changes to any laws or regulations relevant to such location.

Where permitted by the Contract, Golder may have retained subconsultants affiliated with Golder to provide some or all of the Services. However, it is Golder which remains solely responsible for the Services and there is no legal recourse against any of Golder's affiliated companies or the employees, officers or directors of any of them.

By date, or revision, the Report supersedes any prior report or other document issued by Golder dealing with any matter that is addressed in the Report.

Any uncertainty as to the extent to which this Report can be used or relied upon in any respect should be referred to Golder for clarification.

TRAFFIC IMPACT ASSESSMENT

PROPOSED

RESIDENTIAL APARTMENT AND
COMMERCIAL DEVELOPMENT

202-206 MACQUARIE STREET

HOBART

OCTOBER 2019

MILAN PRODANOVIC B.E. PEng
TRAFFIC ENGINEERING & ROAD SAFETY

TRAFFIC IMPACT ASSESSMENT

PROPOSED

RESIDENTIAL APARTMENT AND
COMMERCIAL DEVELOPMENT

202-206 MACQUARIE STREET

HOBART

OCTOBER 2019

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ATTACHMENTS:

Attachment A - Design drawings of proposed layout of residential apartment and commercial development

REFERENCES:

- Australian Standard AS 1742.2-2009 – Manual of uniform traffic control devices Part 2: Traffic control devices for general use
- AUSTROADS – Guide to Road Safety Part 6: Road Safety Audit (2009)
- Road Traffic Authority NSW – Guide to Traffic Generating Developments, 2002
- Road and Maritime Services (Transport) - Guide to Traffic Generating Developments; Updated traffic surveys (August 202-2063)
- AUSTROADS – Guide to Road Design Part 4A: Unsignalised and Signalised Intersections (2009)
- AUSTROADS – Guide to Traffic Management Part 6: Intersections, Interchanges and Crossings (2009)
- Australian Standard AS 2890 – Parking Facilities, Part 1 – Off-street car parking
- Hobart Interim Planning Scheme 2015

1. INTRODUCTION

A multi-storey residential apartment and commercial development is proposed for the property at 202-206 Macquarie Street in 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 Macquarie Street in the area of the development site. An assessment is made of the traffic activity that the development will generate and the effect that this traffic will have on Macquarie Street.

Consideration is given to the access arrangements and available sight distances along Macquarie Street at the junction of the driveway to the development site. An assessment is also made of the driveway design, internal vehicle traffic circulation and parking provisions within the development site having regard to current applicable Australian standards and the requirements of the Hobart Interim Planning Scheme (202-2065).

The report is based on the Department of State Growth (DSG) - Traffic Impact Assessment Guidelines with regard to current Austroads guidelines for such assessments. The techniques used in the investigation and assessment incorporate best practice road safety and traffic management principles.

2. SITE DESCRIPTION

The proposed development site is located on the southern side of Macquarie Street and around 70m to the west of the Barrack Street intersection.

The site is currently a vacant property.

The site lies within the Central Business Zone in the Hobart municipality. The surrounding development is quite mixed with commercial, office, visitor accommodation as well as school uses.

The location of the development site has been highlighted on the extract from the street atlas for this area, seen in Figure 2.1.

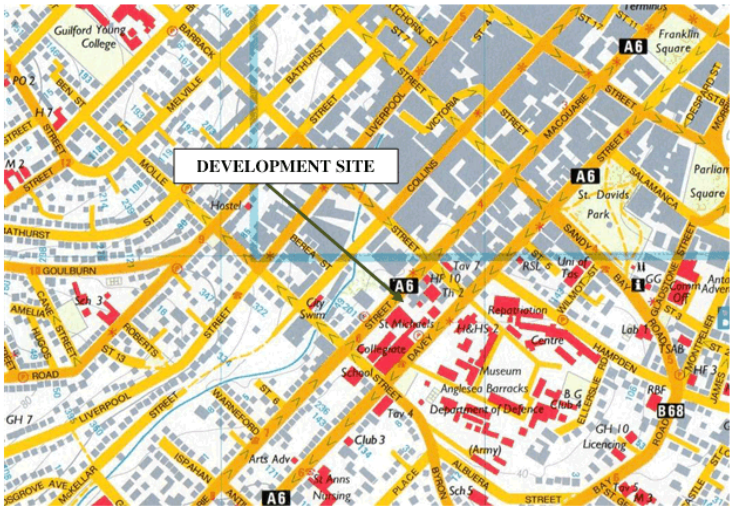


Figure 2.1: Extract of street atlas showing location of proposed apartment and commercial development site

3. DEVELOPMENT PROPOSAL

The proposed development at 202-206 Macquarie Street is for the construction of a multi-storey building that will have 40 residential apartments and three commercial areas.

A view of the Macquarie Street frontage of the development site is seen in Photograph 3.1.

Photograph 3.1: View of development site and access from Macquarie Street

There will be two commercial tenancies on the ground floor level and one commercial tenancy (a child care facility) on the first floor level, licenced for up to 51 children.

The commercial floor areas on the ground floor level will be around 89m^2 and 277m^2, while the child care area will be around 559m^2; the total commercial floor area will be around 925m^2.

The 40 apartments will occupy floor levels 3 to 7 with the apartments having a mix of one to three bedrooms.

The single two way driveway off Macquarie Street will provide access from the ground floor level to the car parking spaces on the two basement floor levels. There will be 22 car parking spaces on basement floor level 1 and 23 car parking spaces on basement floor level 2 – a total of 45 car parking spaces.

Within the multilevel apartment and commercial building there will also be two motorcycle parking spaces on basement floor level 1 and five bicycle parking spaces within the secured area of the ground floor level.

The vehicle access to the on-site car parking area will be via the existing driveway off Macquarie Street and into the western side of the building where the driveway will have a width of 6.0-6.5m to the ramp leading to the basement floor level parking.

There will be separate pedestrian access directly to/from Macquarie Street and each of the commercial tenancies and the apartments.

Design drawings of the proposed development site layout are included with this report as Attachment A.

4. EXISTING ROAD AND TRAFFIC ENVIRONMENT

4.1 Road Characteristics

The one road that is relevant to the proposed multistorey apartment and commercial development with respect to vehicular traffic is Macquarie Street.

In the area of the development site, Macquarie Street has a straight horizontal alignment on a fairly flat grade.

It is a one-way street with three marked traffic lanes carrying eastbound traffic and parking along both sides of the street, except for a section of no parking along the southern of Macquarie Street to the east of Molle Street.

The 50km/h urban speed limit applies to Macquarie Street.

A view of the geometric character of Macquarie Street in the area of the development site is seen in Photograph 4.1.

Photograph 4.1: View to east along Macquarie Street with development site ahead on right just beyond trees

4.2 Traffic Activity

In order to refer to the traffic volume passing the development site, traffic volume data for Macquarie Street has been received from DSG.

The vehicle volume data are from the traffic signal loop detectors in each lane in Macquarie Street at the Barrack Street intersection with the volumes recorded on Thursday 27 September 2018.

The peak hour traffic volumes in each lane during the 8:00am – 9:00am and 4:00 – 5:00pm periods have been detailed in Figures 4.1 and 4.2.

The traffic volume along Macquarie Street in the near or southern traffic lane at the Barrack Street intersection was 770-840 vehicles/hour during the afternoon and morning peak hour period, respectively.

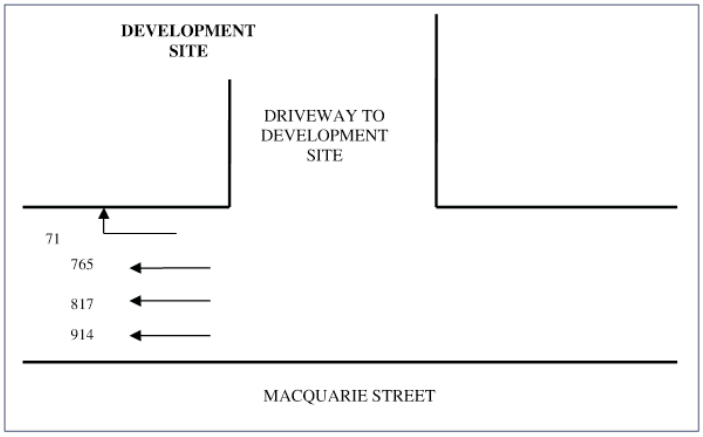


Figure 4.1: Traffic volumes along Macquarie Street past development site driveway - 8:00am to 9:00am

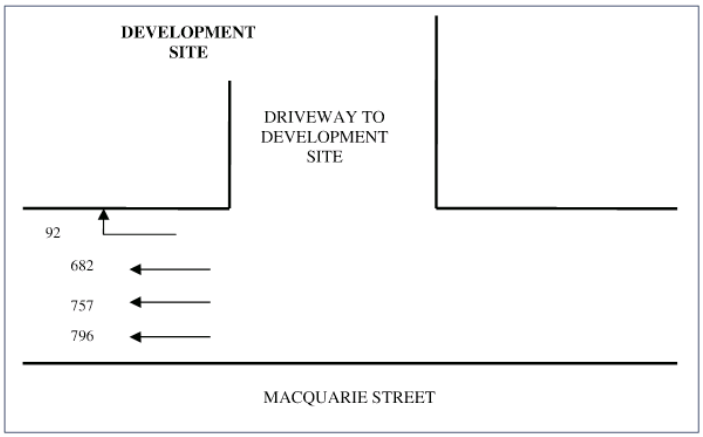


Figure 4.2: Traffic volumes along Macquarie Street past development site driveway - 4:00pm to 5:00pm

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 DSG.

Information was requested from DSG about any reported crashes along Macquarie Street between Molle Street and Barrack Street, including the intersections at each end, over the last five and half years since January 2014.

Advice has been received that the crash database has record of 67 reported crashes along this section of Macquarie Street.

Of these crashes, a very high 30 crashes have occurred at the Macquarie Street/Barrack Street intersection compared with only seven at the Macquarie Street/Molle Street intersection.

At the Macquarie Street/Barrack Street intersection, 20 crashes have been angle collisions between vehicles proceeding straight ahead from adjacent legs of the intersection, with around 5-6 such crashes each year.

These crashes would be due to red light running and one third of these crashes resulted in injury. A further seven of these 20 crashes were rear end or side swipe collisions.

With the seven reported collisions at the Macquarie Street/Barrack Street intersection - three collisions were between vehicles heading straight ahead from adjacent legs of the intersection, one resulted in injury and the other four collisions were rear end or side swipe collisions.

Of the 30 midblock collisions, 14 crashes were rear end collisions and 10 crashes were due to lane change/side swipe incidents. Only two of the midblock collisions resulted in injury.

Only four of the collisions were parking incidents and there have been no collisions involving vehicles entering from property driveways.

With this crash record, there is a need to undertake detailed investigations into required improvements or crash countermeasures at the Macquarie Street/Barrack Street intersection.

5. TRAFFIC GENERATION BY THE DEVELOPMENT

As outlined in Section 3 of this report, the proposed development under consideration is the construction of 40 residential apartments and commercial tenancies in the multistorey building on the site at 202-206 Macquarie Street.

The residential apartments will have one to three bedrooms. Each apartment will be provided with one car parking space in the basement car park.

In considering the traffic activity that each apartment will generate when occupied, guidance is normally sought from the New South Wales, Road Traffic Authority document – Guide to Traffic Generating Developments. The RTA guide is a nationally well accepted document that provides advice on trip generation rates and vehicle parking requirements for new developments.

The updated 'Technical Direction' to the 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 20 at the 2015 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 proposed apartments will have access to only one on-site car parking space;
- the development site is very close to the Hobart CBD (just under 600m walking distance to Centrepoint);
- the development site is very close to the 'all routes' central bus station around the Elizabeth Street/Macquarie Street intersection (around 700m walking distance).

The proposed apartments are expected to generate less traffic activity than the Grosvenor Square apartments. However, for the purpose of this assessment, a traffic generation rate of 3.5 vehicles/apartment/day will be assumed.

Applying this trip generation rate to the 40 residential apartments, the traffic generation is expected to be around 140 vehicles/day and around 14 vehicles/hour during peak traffic periods.

There will be a child care facility on the first floor for up to 51 children which will have access to five car parking spaces in the basement floor level 1 car park for parent/relative set-down and pick-up of the children. The other two commercial tenancies will not be provided with any car parking on the site.

Data received from a child care provider just outside the Hobart area for the purpose of assessing other such facilities shows the following arrival and departure rates for the children at the facility:

Long Day Care Centre - morning period set down:

- 34% arrived 7:00am - 8.00am
- **45% arrived 8.00am - 9.00am**
- 10% arrived 9.00am - 10.00am

Long Day Care Centre - afternoon period pick up:

- 25% departed 3.30pm - 4.30pm
- **32% departed 4.30pm - 5.30pm**
- 19% departed 5.30pm - 6.30pm

The length of stay by parents/relatives when picking up and setting down children is usually less than five minutes and rarely exceeds 10 minutes. A survey undertaken a few years ago of the length of stay of vehicles in the car park at a similar centre in Bridgewater found that 60% of cars were parked for less than five minutes and 90% for less than 10 minutes. The New South Wales Road Traffic Authority's – Guide to Traffic Generating Developments indicates surveys undertaken some time ago have found the average lenght of stay is 6.8 minutes.

It is also relevant to note that some parents/relatives drop-off and pick-up more than one child at the child care centre.

Based on the above data and applying an average rate of 1.2 children dropped off/picked up per car), the child care facility is expected to generate some 170 vehicles/day.

The total peak traffic generation to and from the child care facility will be around 38 vehicles/hour during the 8:00am - 9:00am period and 26 vehicles/hour during the 4.30pm - 5.30pm period.

Staff vehicles will need to be parked elsewhere off the site.

The total traffic use of the driveway to the development site will therefore be around 310 vehicles/day and around 52 vehicles/hour during the morning peak hour period and 40 vehicles/hour during afternoon peak hour period.

6. TRAFFIC ASSESSMENT AND IMPACT

This section of the report evaluates the impact of the expected traffic that will be generated by the proposed apartment and commercial development on passing Macquarie Street traffic volumes.

An assessment has been made of the adequacy of available intersection sight distance along Macquarie Street at the driveway junction; consideration has been given to the proposed internal site layout with respect to traffic circulation, parking supply and parking arrangement as well as pedestrian accessibility and safety.

6.1 Operational Impact of Increased Traffic Activity

The proposed apartment and commercial development is expected to generate around 310 vehicles/day and 40-52 vehicles/hour at peak traffic times of the day.

The future traffic volume that will use the driveway to the development site during peak hour periods will not experience any major operational traffic issues.

Vehicle turning movements will be predominantly to and from the right-hand traffic lane in Macquarie Street which carries 770-840 vehicles/hour during the afternoon and morning peak hour period, respectively.

Intersections and junctions reach capacity when the total conflicting approach traffic volumes are around 1,500 vehicles/hour. The conflicting traffic volume will be less than 60% of this volume.

However, traffic on Macquarie Street passes the development site in platoons and vehicles will wait for the platoons to pass before entering Macquarie Street. Once the platoon passes there are more than sufficient opportunities and time to enter Macquarie Street (during intergreen periods at the Molle Street/Macquarie Street intersection).

6.2 Assessment of Available Sight Distances

Consideration has been given to the available sight distances along Macquarie Street from the driveway to the development.

The available view along Macquarie Street for motorists entering from the location of the proposed driveway is seen in Photograph 6.1 if back from the kerb line and in Photograph 6.2 if back from the edge of parking lane (nearest parking space to west is vacant in the photographs).

In assessing the sight distance, the requirements of Clause E6.7.2 A1 would apply in this case. 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 required sight distances to approaching vehicles on public roads from a driveway such as is under consideration in this assessment.

Free vehicle speeds in Macquarie Street past the development site would be around 50 - 55km/h. The desirable driveway sight distance is 69m for approach vehicle speeds of 50km/h from a point 2.5m back from the edge of road (which is forward of the property boundary), and 77m for approach vehicle speeds of 55km/h.

A driver exiting the site will be able to see much further than 77m along Macquarie Street with the advantage of a 5m long 'no stopping zone immediately to the west of the driveway.

As can be appreciated from the views in Photograph 6.1 and 6.2, it can be possible to see approaching traffic beyond the Molle Street intersection, distances of over 150m along Macquarie Street, or slower traffic turning from Molle Street into Macquarie Street.

Photograph 6.1: View to west along Macquarie Street from driveway to development site with vehicle at kerb line

Photograph 6.2: View to west along Macquarie Street from driveway to development site with vehicle at edge of parking lane

6.3 Internal Traffic Access, Circulation and Car Parking

Following input into the design of the internal driveway and parking arrangements and having due regard to the requirement of AS 2890, the proposed layout and design of the driveway, circulation area and parking arrangements which will service the apartment and commercial development is shown on the development site layout drawings in Attachment A.

Relevant design elements of the proposed site layout related to traffic are discussed below.

Access driveway and traffic circulation and on-site turning considerations

There will be one driveway servicing access to the proposed off-street vehicle parking in the apartment and commercial building.

No change will be required to the existing western driveway to provide access to the development site. The gutter crossover has a width of around 8.5m plus wing walls. At the property boundary the driveway will have a width of around 6.5m, narrowing to around 6.0m inside the building to the ramp leading to the basement parking. This part of the driveway will have a maximum grade of 5%.

The ramps to the basement car parking levels will be 9.6m long and have a downgrade of 25% with 2m transition sections at each end, in accordance with requirements in AS 2890.1. The ramp width will be 5.8m.

The overall design of the access and driveway is sufficient to allow vehicles to simultaneously enter and exit the driveway to/from Macquarie Street as well as passing one another along the driveway.

With the car parking arrangements and available space, all cars will be able to enter and exit the site in a forward direction.

Car parking supply

Clause E6.6.5 of the Hobart Interim Planning Scheme 2015 states that for a development in the Central Business Zone, the acceptable solution for the number of car parking spaces on the site is:

> ***A1***
>
> *(a) No onsite parking is provided; or*
>
> *(b) onsite parking is provided at a maximum rate of 1 space per 200m2 of gross floor area for commercial uses; or*
>
> *(c) onsite parking is provided at a maximum rate of 1 space per dwelling for residential uses; or*
>
> *(d) onsite parking is required operationally for an essential public service, including, hospital, police or other emergency service.*

The proposed development will have 40 residential apartments and 40 car parking spaces. The development will also have three commercial tenancies with a total floor area of around 925m^2 and five car parking spaces will be allocated for commercial use.

Clause E6.6.5 A1(b) and (c) are applicable in this case.

The number of proposed car parking spaces will meet both subclauses and hence the acceptable solution will be met.

The five car parking spaces will be allocated for the pick-up and set-down of children attending the child care facility.

It has been estimated this child care facility will generate a parking demand of up to 19 cars/hour at peak times for this activity (average of one vehicle each 3.16 minutes). Based on an average stay of seven minutes, the total parking demand will be around 133 minutes of parking time per hour and the available parking will be 300 minutes of parking time per hour.

The parking supply will provide for over twice the expected average rate of vehicle arrivals over the peak hour periods and should meet the parking demand reasonably well.

On-site parking area design

All the resident and commercial parking spaces on the site will be reasonably compliant with AS 2890.1.

The required turn paths of vehicles have been checked and found to be adequate for three-point turns by B85 cars for all manoeuvres to and from all parking spaces.

The specific dimensions that have been assessed include the following:

- All residential parking spaces will be 5.4m long and 2.5m 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 (child care facility) will be 5.4m long and at least 2.6m wide in accordance with minimum requirements for User Class 3 and 3A (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 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 over the minimum 5.8m (as required in Figure 2.2 of AS 2890.1 for User Class 1A 90-degree parking);
- The width of the parking aisle for the commercial parking spaces will be 6.1m, less than 6.6m for User Class 3A but more than 5.8m for User Class 3 (as detailed in Figure 2.2 of AS 2890.1). The structural design of the building does not allow the aisle to be an extra 0.5m. The resultant parking bay and aisle widths are considered acceptable for the five parking spaces in question, particularly as three bays will be well clear of any side obstructions;
- 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 first security access gate will be well within the building so there will not be any queuing of vehicles entering the building back onto Macquarie Street;
- A turnaround bay will be provided in the child care parking area before the second security access gate;
- The motorcycle parking spaces will be at least 2.5m long and 1.2m wide (as detailed in Figure 2.7 of AS 2890.1);
- 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 within the two basement floor level parking areas will be no more than around 1%.

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.

On-street infrastructure

The existing driveway over the footpath and the gutter crossover to the development site is sufficient to service full access to the development site.

No changes are proposed to this gutter crossover or footpath outside of the development site.

Pedestrian Traffic

There will be pedestrian access to the building directly from Macquarie Street, separate from the driveway.

Consideration has also been given to the required sight triangle between motorists exiting the driveway and pedestrians approaching along the Macquarie Street footpath, as indicated in Figure 3.3 of AS 2890.1.

The pedestrian sight triangle for exiting vehicles will be provided as required by AS 2890.1.

Waste collection/servicing

The collection of domestic waste will be undertaken by arrangements with Hobart City Council.

The bins will be moved along the driveway from the internal bin room to the frontage of the property for collection, as detailed on the site layout drawings.

Commercial tenancy serving and waste will be attended to by commercial or private contractors from on-street parking, some occurring outside business hours, as occurs normally for businesses in the Hobart Central Business Zone.

6.4 Public Transport Services

Metro Tasmania currently operates regular route bus services along Macquarie Street (inbound) and Davey Street (outbound).

The central city bus station is located around the Elizabeth Street/Macquarie Street intersection which is within around 700m walking distance.

7. SUMMARY AND RECOMMENDATIONS

This Traffic Impact Assessment has been prepared in support of the planning application to the Hobart City Council for the construction of 40 apartments and three commercial tenancies at 202-206 Macquarie Street in Hobart. One of the commercial tenancies will be a child care facility.

The assessment has reviewed the existing road and traffic environment along Macquarie Street in the area of the development site.

In the area of the development site, Macquarie Street is a one-way street with three marked traffic lanes carrying eastbound traffic and parking along both sides of the street.

Passing peak hour traffic volumes during the 8:00am – 9:00am and 4:00pm – 5:00pm periods on Macquarie Street are around 770-840 vehicles/hour in the near or southern traffic lane (2,500 vehicles/hour in all lanes).

The crash database has record of 67 reported crashes along Macquarie Street between Barrack Street and Molle Street over the last five and a half years since January 2014.

Of these crashes, a very high 30 crashes have occurred at the Macquarie Street/Barrack Street intersection compared with only seven at the Macquarie Street/Molle Street intersection.

Of the 30 midblock collisions, 14 crashes were rear end collisions and 10 crashes were due to lane change/side swipe incidents. Only two of the midblock collisions resulted in injury. Only four of the collisions were parking incidents and there have been no collisions involving vehicles entering from property driveways.

With this crash record, there is a need to undertake detailed investigations into required improvements or crash countermeasures at the Macquarie Street/Barrack Street intersection.

It has been estimated that the proposed development, with each of the 40 apartments having one car parking space and the child care facility will have five car parking spaces for children set-down and pick-up. When fully developed and occupied, the site will generate around 310 vehicles/day and 40-52 vehicles/hour at peak traffic times of the day.

Vehicle turning movements will in the future be predominately to and from the right-hand traffic lane in Macquarie Street which carries up to 840 vehicles/hour in peak traffic periods.

However, traffic on Macquarie Street passes the development site in platoons and vehicles will wait for the platoons to pass before entering Macquarie Street. Once the platoon passes there are more than sufficient opportunities and time to enter Macquarie Street (during intergreen periods at the Molle Street/Macquarie Street intersection).

An assessment has been undertaken of the available sight distances at the junction of the development site driveway with Macquarie Street. The available sight distances are sufficient to meet AS 2890.1 requirements and hence the planning scheme.

It is possible to see to the west along Macquarie Street for a distance of over 150m, subject to the level of parking along Macquarie Street. Exiting drivers could safely continue to exit the site up to the outer edge of the parking lane to at times obtain better sight distance along Macquarie Street, including the slower traffic turning from Molle Street, before moving into the traffic stream.

The required sight distance between motorists exiting the development site driveway and pedestrians approaching along the Macquarie Street footpath will be in accordance with AS 2890.1.

Consideration has been given to the proposed layout and design of the internal driveway, traffic circulation provisions and parking arrangements, having regard to accepted practices and relevant Australian Standards.

The 40 car parking spaces for the 40 residential apartments and five car parking spaces for commercial use will meet the acceptable solution to Clause E6.6.5 A1.

The five car parking spaces will be allocated for the pick-up and set-down of children attending the child care facility. The parking supply will provide for over twice the expected average rate of vehicle arrivals over the peak hour periods and should meet the parking demand reasonably well.

A review of the site layout drawings has concluded the design is satisfactory in meeting the requirement of AS 2890.1 and therefore the Planning Scheme.

All the resident parking spaces and commercial parking space will be compliant with AS 2890.1.

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.

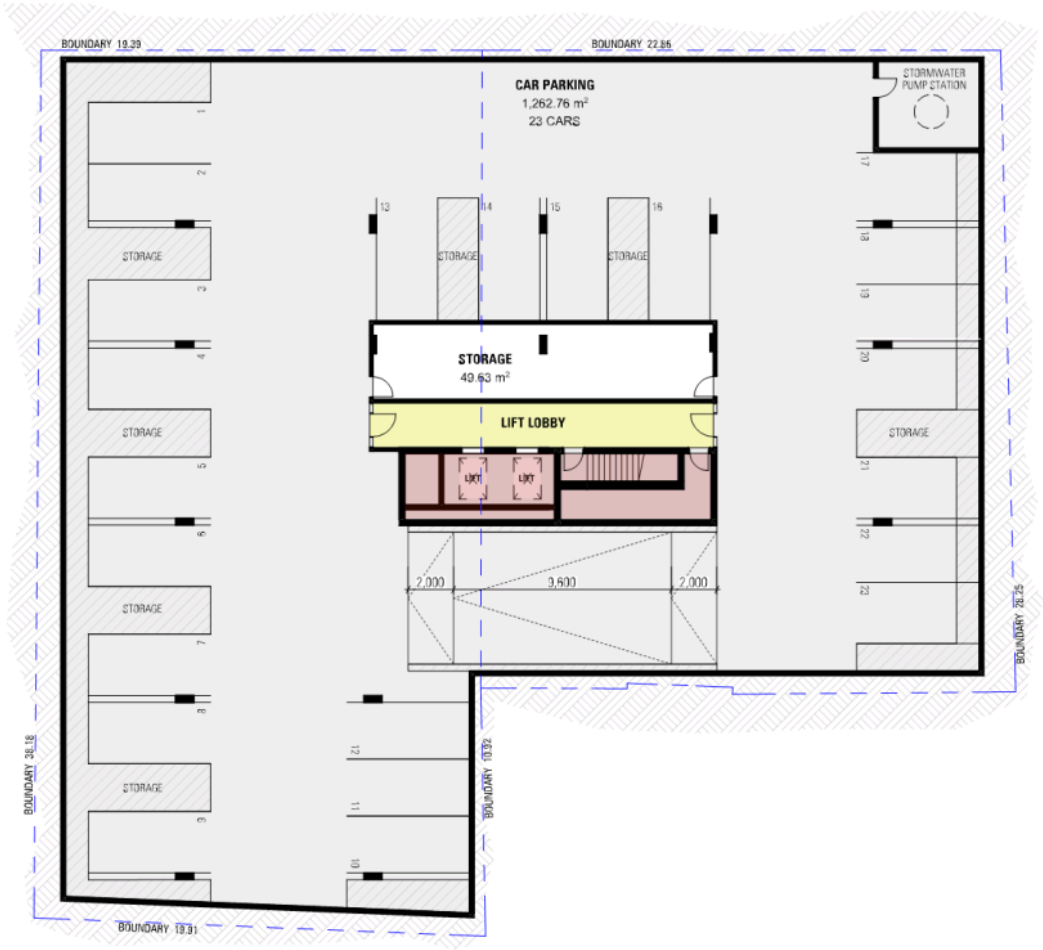
The collection of domestic waste will be undertaken by arrangements with Hobart City Council. The close proximity of the bins to the roadside will allow garage truck to pull up at the kerbside near the driveway and load the bins from the temporary storage area.

Public transport will be readily accessible with passing service on Macquarie Street and Davey Street as well as the central city bus station which is located around the Elizabeth Street/Macquarie Street intersection, located within around 700m walking distance.

Overall it has been concluded that the proposed apartment and commercial development can be supported on traffic grounds as it will not give rise to any adverse safety or operational traffic issues.

ATTACHMENT A

Design drawings of proposed layout of residential apartment development



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ARCHITECTSJAWS

PROJECT

MACQUARIE ST APARTMENTS

205 Macquarie Street HOBART TAS 7000 AUSTRALIA

For

NEW PLEASANT INVESTMENT

DRAWING

SCALE	1:200 @ A3
DATE	8/10/2019
DRAWN	
CHECKED	
ACCREDITED DESIGNER	
ACCREDITED NUMBER	
PLOT DATE	9/10/2019
CAD REF	BIMcloud JAWS3 - BIMcloud Basic for ARCHICAD 22/18052 - 205 Macquarie St Hob/18052 - 205 MACQUARIE ST_DD_191004

PROJECT NORTH

ISSUE

DEVELOPMENT APPLICATION

DRAFT

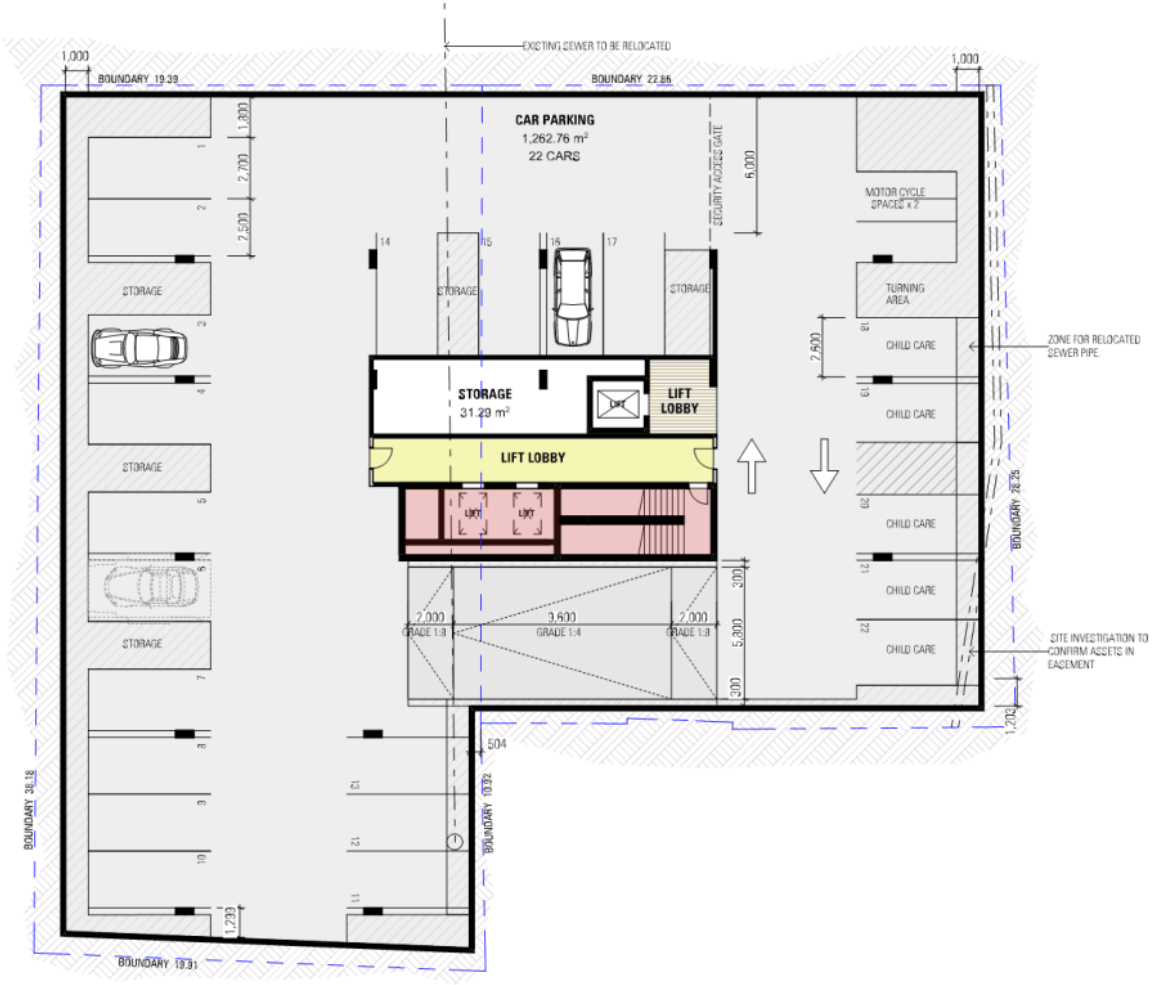
DRAWING NAME

BASEMENT 2 FLOOR PLAN

DRAWING NO

18052_DA03

REVISION



DO NOT SCALE DRAWINGS. WRITTEN DIMENSIONS GOVERN. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE. ALL DIMENSIONS SHALL BE VERIFIED ON SITE BEFORE PROCEEDING WITH THE WORK. JAWS SHALL BE NOTIFIED IN WRITING OF ANY DISCREPANCIES. THIS DRAWING MUST BE READ IN CONJUNCTION WITH ALL RELEVANT CONTRACTS, SPECIFICATIONS, REPORTS AND DRAWINGS.

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ACCREDITED NUMBER	
PLOT DATE	9/10/2019
CAD REF	BIMcloud JAWS3 - BIMcloud Basic for ARCHICAD 22/18052 - 205 Macquarie St Hob/18052 - 205 MACQUARIE ST_00_191004

PROJECT NORTH

ISSUE

DEVELOPMENT APPLICATION
DRAFT

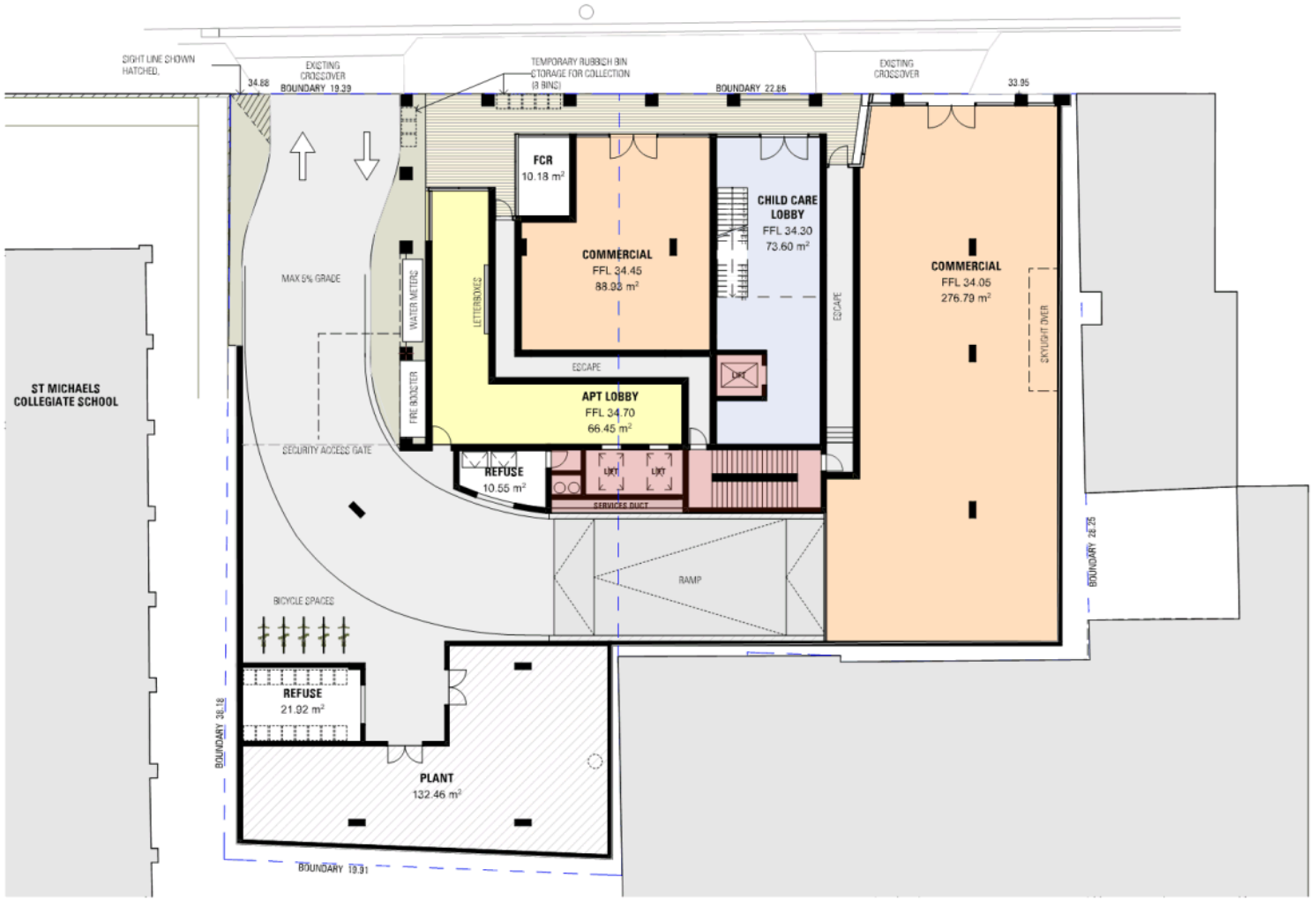
DRAWING NAME

BASEMENT 1 FLOOR PLAN

DRAWING NO

18052_DA04

REVISION



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ARCHITECTSJAWS

PROJECT

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For

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PROJECT NORTH

ISSUE

DEVELOPMENT APPLICATION

DRAFT

DRAWING NAME

GROUND FLOOR PLAN

DRAWING NO

18052_DA05

REVISION

MILAN PRODANOVIC B.E. PEng
TRAFFIC ENGINEERING & ROAD SAFETY

10 June 2020

Phil Gartrell
Planner
Ireneinc Planning and Urban Design
49 Tasma Street
NORTH HOBART TAS 7001

Dear Phil

PROPOSED RESIDENTIAL APARTMENT AND COMMERCIAL DEVELOPMENT 202-206 MACQUARIE STREET, HOBART

I refer to the letter dated 1 June 2020 from the Hobart City Council requesting further information regarding the proposed development at the above address.

In regard to item PA13, the council has advised:

Advice:

- *Commercial domestic rubbish collection will be required for this development.*
- *Contrary to the statement "The collection of domestic waste will be undertaken by arrangements with Hobart City Council" in the Traffic Impact Assessment (Prodanovic, Oct 2019) submitted as part of the application, Council will not undertake kerbside rubbish collection from this site.*
- *Contrary to the statement "Commercial tenancy serving and waste will be attended to by commercial or private contractors from onstreet parking" in the Traffic Impact Assessment (Prodanovic, Oct 2019) submitted as part of the application, and in accordance with the advice provided by the Department of State Growth Crown Landowner Consent dated 11th May 2020, the application cannot rely on kerbside parking to facilitate rubbish collection.*

It appears the council has based all this on the statement in the Department of State Growth Crown Landowner Consent:

- *Please note that traffic flows on Macquarie Street are under constant review and that the current kerb site parking arrangement could change at any time. Therefore, development should not rely on these parking spaces in the longer term.*

My understanding from this statement is simply that kerbside parking restrictions along Macquarie Street could change at some time in the future.

It does not state that kerbside servicing of properties along the street will not be possible. The changes to kerbside parking along both sides of Macquarie Street and Davey Street will have to take into account that there are many businesses and

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TRAFFIC ENGINEERING & ROAD SAFETY

dwellings along both sides of the street that require ongoing servicing, in particular waste collection, for the kerbside. All these properties are set up for kerbside waste collection and it will be impossible to consider, let alone implement, alternative arrangements.

The reality of the Department of State Growth advice is that there may be clearway restrictions imposed along one or both sides of Macquarie Street and Davey Street in the future or a bus lane on the left side of the road during peak traffic periods.

These restrictions will be only part-time restrictions, applied when required for the traffic conditions. Therefore, there will be other significant periods of the day when kerbside waste collection will be able to occur. The Department of State Growth would not propose or will not be able to apply restrictions along Macquarie Street and Davey Street which would not allow kerbside waste collection at different times of the day or night.

If required, this could be allowed under Road Rule 158 or Road Rule 313A, if this does not exist at present.

A large waste collection company in Tasmania has advised me that most of its work in the Hobart central business area and surrounds, including kerbside waste collection, is undertaken outside of peak hour traffic and also outside normal work hour periods.

The Hobart City Council does collect domestic waste from multiple unit developments from the kerbside, in accordance with its *Development Application Guidelines – Waste Management*.

Arrangements at this proposed development have been designed to allow for kerbside collection of both domestic waste by council and commercial waste by a private waste contractor.

I therefore conclude the council has misinterpreted the advice from the Department of State Growth. In addition, the proposed development adequately provides for all kerbside waste collection, without the need for trucks to enter the building.

Yours sincerely

Milan Prodanovic

MILAN PRODANOVIC B.E. PEng
TRAFFIC ENGINEERING & ROAD SAFETY

31 July 2020

Phil Gartrell
Planner
Ireneinc Planning and Urban Design
49 Tasma Street
NORTH HOBART TAS 7001

Dear Phil

PROPOSED RESIDENTIAL APARTMENT AND COMMERCIAL DEVELOPMENT
202-206 MACQUARIE STREET, HOBART

I refer to the letter dated 1 June 2020 and 2 July 2020 from the Hobart City Council requesting further information regarding the proposed development at the above address.

The information provided in the Gandy and Roberts letter dated 15 June 2020 regarding Items PA 1, PA 2.1 and PA 2.2 is noted and the advice supported. Some of this advice was addressed in the TIA report.

The following advice is provided with respect to a number of items that have been raised in the letter related to traffic activity.

Item PA 5.1 raises the matter of conflicts between vehicle travelling in opposing directions at the right angled turns in the parking aisle or circulation road as well as the width of the parking aisles and width of single sided aisles.

The design of the circulation road/parking aisle at the right angles turns is not intended to provide continuous passing by rather one vehicle at a time, as detailed in Clause 2.5.2 (c) of AS 2890.1. The design will allow for two-way passing along the aisles and the ramps. At the turns, the approaching vehicles will be able to pass one another by one of the vehicles stopping momentarily part way through the turn.

In such instances, there will be a momentary delay to an opposed vehicle if there is an approaching vehicle but there will not be any efficiency issues as the two way traffic volume will be

- 40-50 vehicles/hour during a couple of peak hours over the day at the first ramp;
- less at other times at the first ramp; and
- less than 15 vehicles/hour at the other ramps and right angle turns.

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In regard to single sided parking aisles, the minimum width of the aisles will be 6.1m (up to 7.0m) which for two sides of the parking levels includes the normal 5.8m wide aisle as well as the additional 0.3m as required on Clause 2.4.2 (d) of AS 2890.1.

In regard to Item PA 5.2, I provide the following advice:

1. The Gandy and Roberts advice includes diagrams of typical car turn paths to/from various parking bays across the parking floor levels, in accordance with AS 2890.1. All parking bay and aisle dimensions have been checked on the design drawings and they meet the requirements of Figure 2.2, Figure 2.3, Figure 2.7 and Figure 5.2 in AS 2890.1. Therefore, should not be a need to prove the design is compliant through car turn paths, which is a less accurate method to ensuring the dimensions of the design meet minimum requirements.

2. Although the design of the access off Macquarie Street to the first ramp is curved, the intent of the design in this area is not as a 'circular' ramp as described in Clause 2.5.2 of AS 2890.1. It is designed as a circulation road in the form of a parking aisle, but without car parking bays on each side. The grade of the circulation road is no more than 5% and would be the same as many other circulation roads in similar developments. Therefore, there is not a need for any median treatment or consideration of other associated design parameters.

   The car swept paths on Drawing C011 demonstrate that passage of opposing car movements can comfortably be accommodated along this circulation road. It should be noted the lines each side of the travel section are not raised kerbs, just indicative travel path. It has been decided to add a centreline marking along this length between the frontage boundary to the first ramp to provide guidance, including guidance past the column within the travel path.

3. See advice below regarding waste collection.

The current design drawings are attached to this letter.

In regard to Item PA13, the council has advised:

Advice:

- *Commercial domestic rubbish collection will be required for this development.*
- *Contrary to the statement "The collection of domestic waste will be undertaken by arrangements with Hobart City Council" in the Traffic Impact Assessment (Prodanovic, Oct 2019) submitted as part of the application, Council will not undertake kerbside rubbish collection from this site.*
- *Contrary to the statement "Commercial tenancy serving and waste will be attended to by commercial or private contractors from onstreet parking" in the*

MILAN PRODANOVIC B.E. PEng
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Traffic Impact Assessment (Prodanovic, Oct 2019) submitted as part of the application, and in accordance with the advice provided by the Department of State Growth Crown Landowner Consent dated 11th May 2020, the application cannot rely on kerbside parking to facilitate rubbish collection.

It appears the council has based all this on the statement in the Department of State Growth Crown Landowner Consent letter (attached):

- *Please note that traffic flows on Macquarie Street are under constant review and that the current kerb site parking arrangement could change at any time. Therefore, development should not rely on these parking spaces in the longer term.*

My understanding from this statement is simply that kerbside parking restrictions along Macquarie Street could change at some time in the future.

It does not state that kerbside servicing of properties along the street will not be possible. The changes to kerbside parking along both sides of Macquarie Street and Davey Street will have to take into account that there are many businesses and dwellings along both sides of the street that require ongoing servicing, in particular waste collection, for the kerbside. All these properties are set up for kerbside waste collection and it will be impossible to consider, let alone implement, alternative arrangements.

The reality of the Department of State Growth advice is that there may be clearway restrictions imposed along one or both sides of Macquarie Street and Davey Street in the future or a bus lane on the left side of the road during peak traffic periods.

These restrictions will be only part-time restrictions, applied when required for the traffic conditions. Therefore, there will be other significant periods of the day when kerbside waste collection will be able to occur. The Department of State Growth would not propose or will not be able to apply restrictions along Macquarie Street and Davey Street which would not allow kerbside waste collection at different times of the day or night.

If required, this could be allowed under Road Rule 158 or Road Rule 313A, if this does not exist at present.

This matter, in particular the statement in the Crown Landowner Consent for 202 Macquarie Street regarding parking, detailed above, has been discussed with traffic engineers at the Department of State Growth (DSG).

The above advice has now been confirmed, that the DSG advice is intended to relate only to the car parking supply for any development and that any shortfall in the car parking supply within the development site should not depend on currently available car parking along Davey Street or Macquarie Street; it does not relate in any way to waste servicing of the site.

A copy of the advice from DSG is attached.

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TRAFFIC ENGINEERING & ROAD SAFETY

A large waste collection company in Tasmania has advised me that most of its work in the Hobart central business area and surrounds, including kerbside waste collection, is undertaken outside of peak hour traffic and also outside normal work hour periods.

The Hobart City Council does collect domestic waste from multiple unit developments from the kerbside, in accordance with its *Development Application Guidelines – Waste Management* (attached).

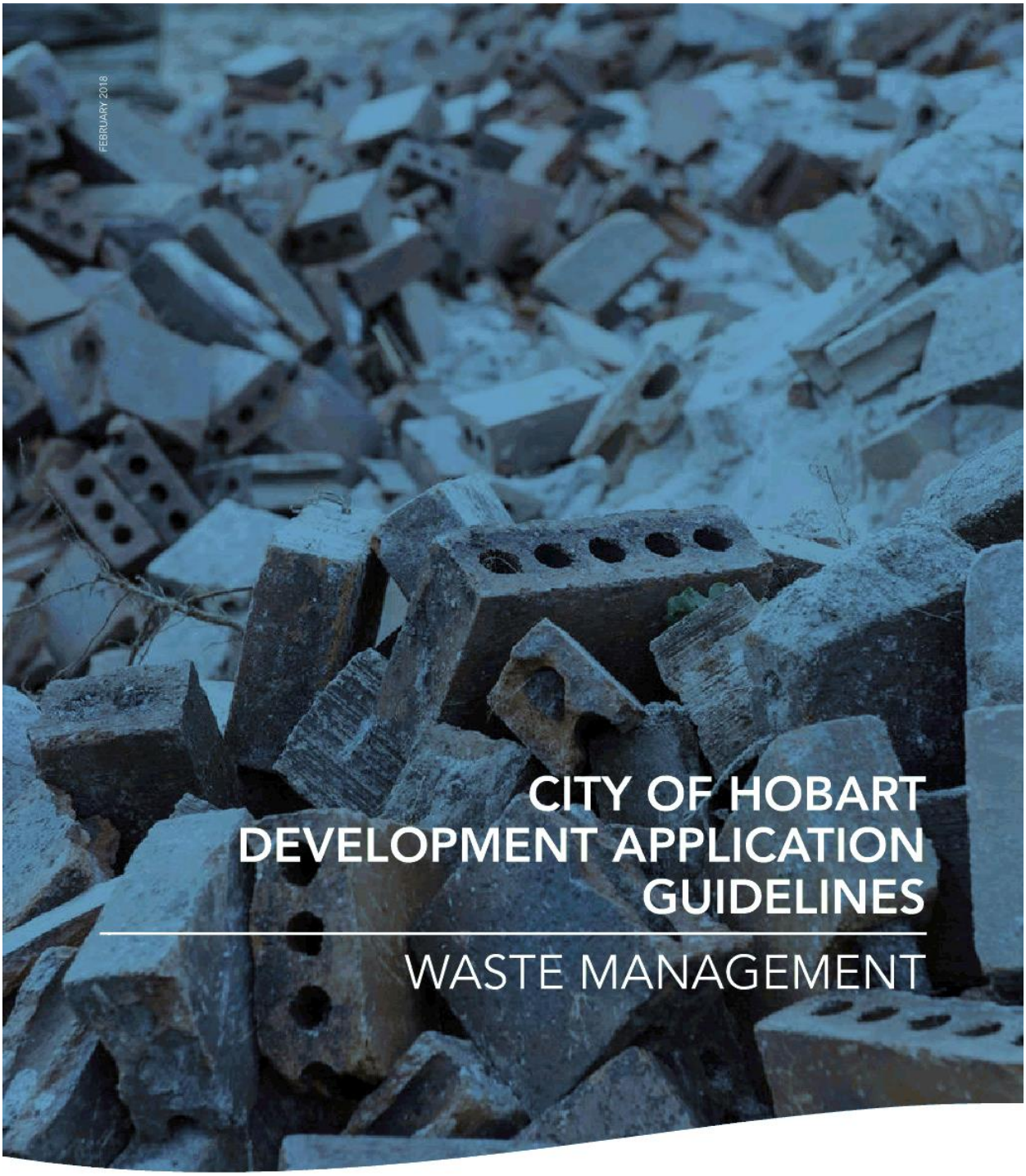
Arrangements at this proposed development have been designed to allow for kerbside collection of both domestic waste by council and commercial waste by a private waste contractor.

I therefore conclude the council has misinterpreted the advice from the Department of State Growth. In addition, the proposed development adequately provides for all kerbside waste collection, without the need for trucks to enter the building.

Overall, I can endorse that the proposed design for the development at 202 Macquarie Street will be compliant with standard requirements and not adversely affect safety or efficiency.

Yours sincerely

Milan Prodanovic



City of HOBART

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1. INTRODUCTION

These guidelines have been developed to provide applicants with consistent advice on waste management in relation to development applications. It provides information on standard services, storage requirements, and waste reduction in alignment with the City of Hobart's Waste Management Strategy 2015–30 and its goal of working towards zero waste to landfill by 2030.

The guidelines should be used when preparing plans for developments, to ensure that waste-related activities are considered appropriately in any new development in the City of Hobart. Please ensure you have completed the checklist at the end of these guidelines before submitting your application.

2. STANDARD CITY OF HOBART SERVICES AND ALLOCATIONS

The City of Hobart provides residential tenements with the following standard waste collection services:

SERVICE	CAPACITY	COLLECTION FREQUENCY
Rubbish	120L	Weekly
Recycling	240L	Fortnightly
Green Waste*	240L	Fortnightly

* Fortnightly green waste collection is provided as a standard service for properties greater than 400m2 and less than 4000m^2. Properties in the Hobart city centre, Fern Tree, Sullivans Cove, as well as those with four or more tenancies do not automatically receive the service, however may opt in.

Multi-unit developments may share bins, where on-site and/or kerbside space is limited. A larger 240L rubbish bin can be provided, which can generally be shared between 2 units/ flats (for example, 10 units may have 5 x 240L rubbish bins). For larger developments shared 660L bins can be provided. Research indicates that multi-unit developments don't generate the same volume of waste and recycling as stand-alone residences, as such volumes provided to multi-unit developments may vary from the standard allocation.

3. COMMERCIAL PROPERTIES

Commercial properties do not receive waste services automatically. Operators must contact the City of Hobart to request services. The standard service provided is as per the residential service, except the rubbish bin is a larger 240 l bin. The services provided are not intended to manage waste disposal requirements of a commercial scale. Large scale commercial developments must consider other appropriate commercial waste storage and collection services, separate of the City of Hobart.

4. ON-SITE STORAGE AND COLLECTION

Developers must consider a range of on-site storage and collection requirements when preparing development applications, including:

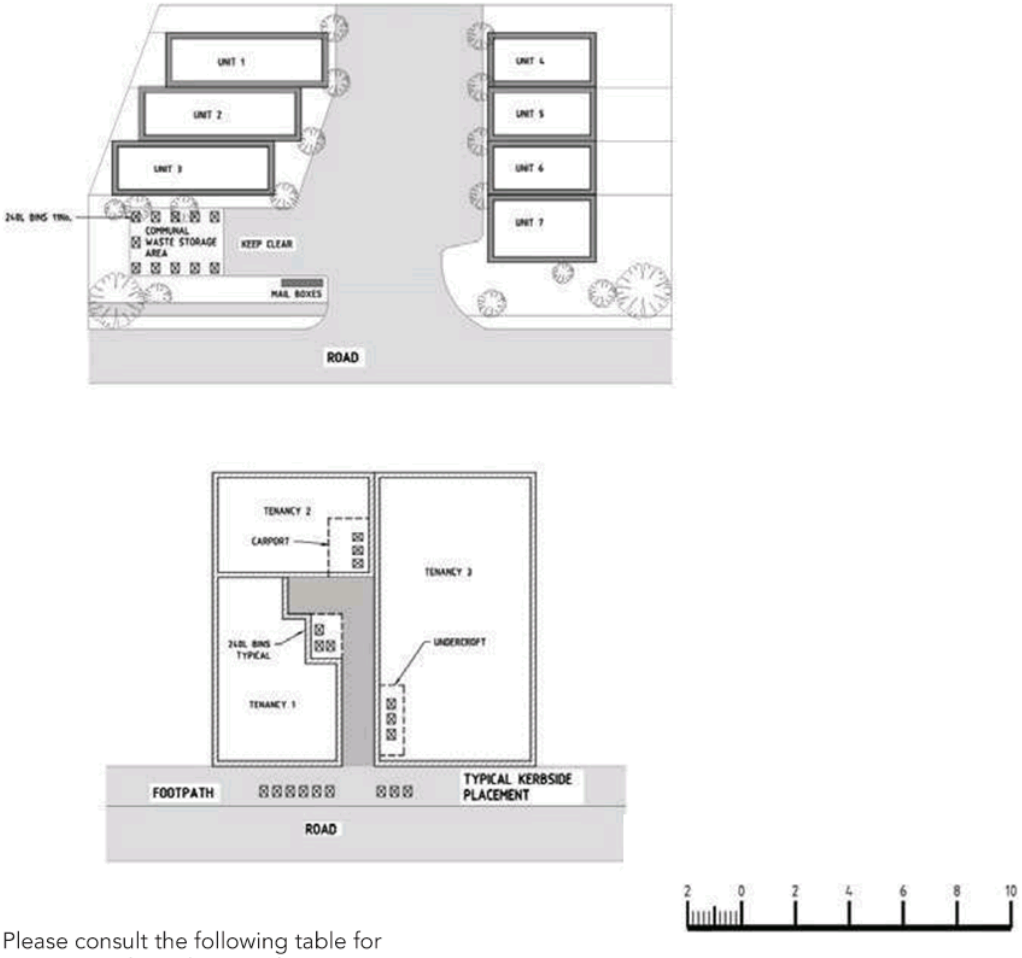
- Provide adequate space for the storage of bins required in the development
- Ensure bins can be safely collected while causing minimum disruption to traffic and surrounding properties
- Ensure on-site storage of bins does not create a nuisance to occupants of the development or adjoining properties
- Ensure the storage and collecting of bins is undertaken in a manner to minimise risk to public health and the environment
- Provide sufficient space to allow collection vehicles to service bins and safely manoeuvre whether from the kerbside or on-site.

In order to maintain a clear footpath and to reduce the risk of vandalism and bins being stolen, the City of Hobart requests bins are returned to the property as soon as possible after collection occurs.

It is the City of Hobart's standard service not to enter private property to perform collections. In extenuating circumstances the City may consider collecting bins from within the property boundary, with an indemnity from the property owner.

A detailed bin storage plan showing on-site storage areas for bins be included with all multi-unit development applications. Figure 1 provides an example of what is required on your bin storage plan.

Figure 1 – example plan detailing exactly where bins will be stored



Please consult the following table for assistance when planning the on-site storage area requirements of a multi-unit development. The City of Hobart's Waste Management Strategy 2015–30 commits the City to introducing a food waste collection service, therefore all areas detailed in this table include provision for rubbish, recycling, and green waste bins.

UNITS	STANDARD SERVICE (EACH UNIT HAS THEIR OWN SET OF BINS)		SHARED 240L BINS		SHARED 660L BINS	
	No. bins	m^2 required	No. bins	m^2 required	No. bins	m^2 required
4	12	4.4	6	2.5	NA	NA
5	15	5.5	8	3.2	NA	NA
6	18	6.6	9	3.8	NA	NA
7	21	7.7	11	4.4	NA	NA
8	24	8.8	12	5.1	NA	NA
9	27	9.9	14	5.7	NA	NA
10	30	11	15	6.4	3	2.9
11	33	12.1	17	7	4	3.8
12	36	13.2	18	7.6	4	3.8
13	39	14.3	20	8.3	4	3.8
14	42	15.4	21	8.9	5	4.8
15	45	16.5	23	9.5	5	4.8
16	48	17.6	24	10.2	5	4.8
17	51	18.7	26	10.8	6	5.8
18	54	19.8	27	11.4	6	5.8
19	57	20.9	29	12.1	6	5.8
20	NA	NA	30	12.7	7	6.7
21	NA	NA	32	13.3	7	6.7
22	NA	NA	33	14	7	6.7
23	NA	NA	35	14.6	8	7.7
24	NA	NA	36	15.2	8	7.7
25	NA	NA	38	15.9	8	7.7
26	NA	NA	39	16.5	9	8.6
27	NA	NA	41	17.1	9	8.6
28	NA	NA	42	17.8	9	8.6
29	NA	NA	44	18.4	10	9.6
30	NA	NA	45	19.1	10	9.6

Please see the following for more detailed information on bin dimensions and specifications.

TRIDENT PLASTICS

120 Litre MGB

UALITY
- SAI Global Certified Product AS 4123 (SMK40411)
- SAI Global Recognised Laboratory AS4123.5 (40119)
- ISO 9001 Quality Management Systems
- ISO 14001 Environmental management Systems
- Injection Moulded HDPE
- UV Stabilized
- Chemical and odour resistant
- Heat and frost resistant
- Solid rubber tyre wheels (removable)
- Heavy duty nickel plated steel axle
- Maximum Nominal Load 48kg
- Maximum Mass 57kg

LEXIBILITY
- Bin and Lid Markings
- Identification and weighing compatible
- Imprints and hot foil printing available

OLOURS
- Full range of colours to suit your needs

ELIVERY
- Australia wide

ARRANTY
- 10 Year manufacturing warranty*

* Subject to terms and conditions of sale

ther Services:
- Concept analysis, CAD design, prototyping and Toolmaking.
- Assembly and distribution services.

Certified Product
Australian Standard
AS 4123
120L 140L
240L MGB

Contact Trident for a Quote or to discuss your needs!
bins@tridentaustralia.com
www.tridentaustralia.com
Trident Plastics (SA) Pty Ltd
589 Torrens Road, St Clair South Australia 5011
Phone +61 8 8444 6246

TRIDENT PLASTICS

240 Litre MGB

UALITY
- SAI Global Certified Product AS 4123 (SMK40411)
- SAI Global Recognised Laboratory AS4123.5 (40119)
- ISO 9001 Quality Management Systems
- ISO 14001 Environmental management Systems
- Injection Moulded HDPE
- UV Stabilized
- Chemical and odour resistant
- Heat and frost resistant
- Solid rubber tyre wheels (removable)
- Heavy duty nickel plated steel axle
- Maximum Nominal Load 96kg
- Maximum Mass 110kg

LEXIBILITY
- Hot Stamping of bin body or lid
- Thermal Printing QR or barcode
- RFID and weighing compatible
- Bin body recycled content

OLOURS
- Full range of colours to suit your needs

ELIVERY
- Australia Wide

ARRANTY
- 10 Year manufacturing warranty*

* subject to terms and conditions of sale.

Certified Product
Australian Standard

Contact Trident for a Quote or to discuss your needs!
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Phone +61 8 8444 6246

TRIDENT PLASTICS

660L MGB DATASHEET

Four Wheeled Container Systems
660 Litre

QUALITY
- Injection Moulded HDPE
- UV Stabilized
- Chemical and odour resistant
- Heat and frost resistant
- Solid rubber tyred wheels
- Wheel locks on 2 wheels
- Water drainage plug

COLOURS
Standard bodylid colours

Other bin/lid colours

N.B. Colours are indicative only and should be used as a guide

DELIVERY
- Asia Pacific Region

WARRANTY
- 1 Year manufacturing warranty*
  * subject to terms and conditions of sale.

Other Services:
- Bin Hot Stamping sides (optional extra)
- Parts and accessories wheels, pins, lids
- Directional locks
- Handle straps

Approximate weights and dimensions:

Dead Weight:	45kg
Useful Load	264kg
Overall Height:	1230mm
Overall Width:	950mm
Overall Length:	1200mm
Wheel	200mm

Trident Plastics (SA) Pty Ltd
E: bins@tridentaustralia.com T: 08 8444 6246 www.tridentaustralia.com
589 Torrens Road, St Clair SA 5011

v1.20161130

5. WASTE MANAGEMENT PLAN FOR DEMOLITION AND CONSTRUCTION PROJECTS

When submitting an application that involves any demolition or construction, developers are required to complete a Waste Management Plan. The Plan must:

- estimate the amount of waste to be generated from the works
- identify the range of waste types that will be generated during the works
- detail the treatment method for all waste types identified.

All applications will be reviewed by a City of Hobart officer to ensure waste minimisation actions are being undertaken to reduce waste to landfill.

Commonly re-used and recycled materials include:

- Concrete
- Raw timbers (construction timbers, pallets)
- Fittings and fixtures (tapware, doors, sinks)
- Pipes (copper, poly, ceramic)
- Soil and clean fill
- Metals (structural, roofing iron, hot water cylinders).

The City of Hobart understands there will at times be materials that cannot be separated and recycled, such as asbestos, plaster, and treated timbers.

An example Waste Management and Minimisation Plan for demolition and construction projects is included with this guide, and the template is available from hobartcity.com.au/wastemanagementstrategy

6. CHECKLIST

To ensure that you have thoroughly considered waste management requirements for your development, please complete this checklist. City of Hobart officers will be referring to the items in this checklist when assessing your application.

- ☐ Calculated the bins required under the City of Hobart's standard service
- ☐ Calculated the on-site storage requirements in accordance with the Table
- ☐ Prepared a Bin Storage Location Plan
- ☐ Assessed impacts caused by bin storage and collection, such as noise, odour, traffic, and public health
- ☐ Identified collection provider (City of Hobart or other)
- ☐ Prepared a Waste Management and Minimisation Plan for demolition and construction projects (if applicable)

7. USEFUL RESOURCES

City of Hobart Waste Management Strategy
hobartcity.com.au/wastemanagementstrategy

City of Hobart Website
hobartcity.com.au

Environment Protection Authority
epa.tas.gov.au/

Resource Work Cooperative
resource.coop/resource-work-cooperative

For further information please contact the City of Hobart on 6238 2711 or visit hobartcity.com.au

EXAMPLE – WASTE MANAGEMENT AND MINIMISATION PLAN

PART 1 - CONSTRUCTION & DEMOLITION PLAN	
Estimate of Total WASTE for the Project	200 tonnes

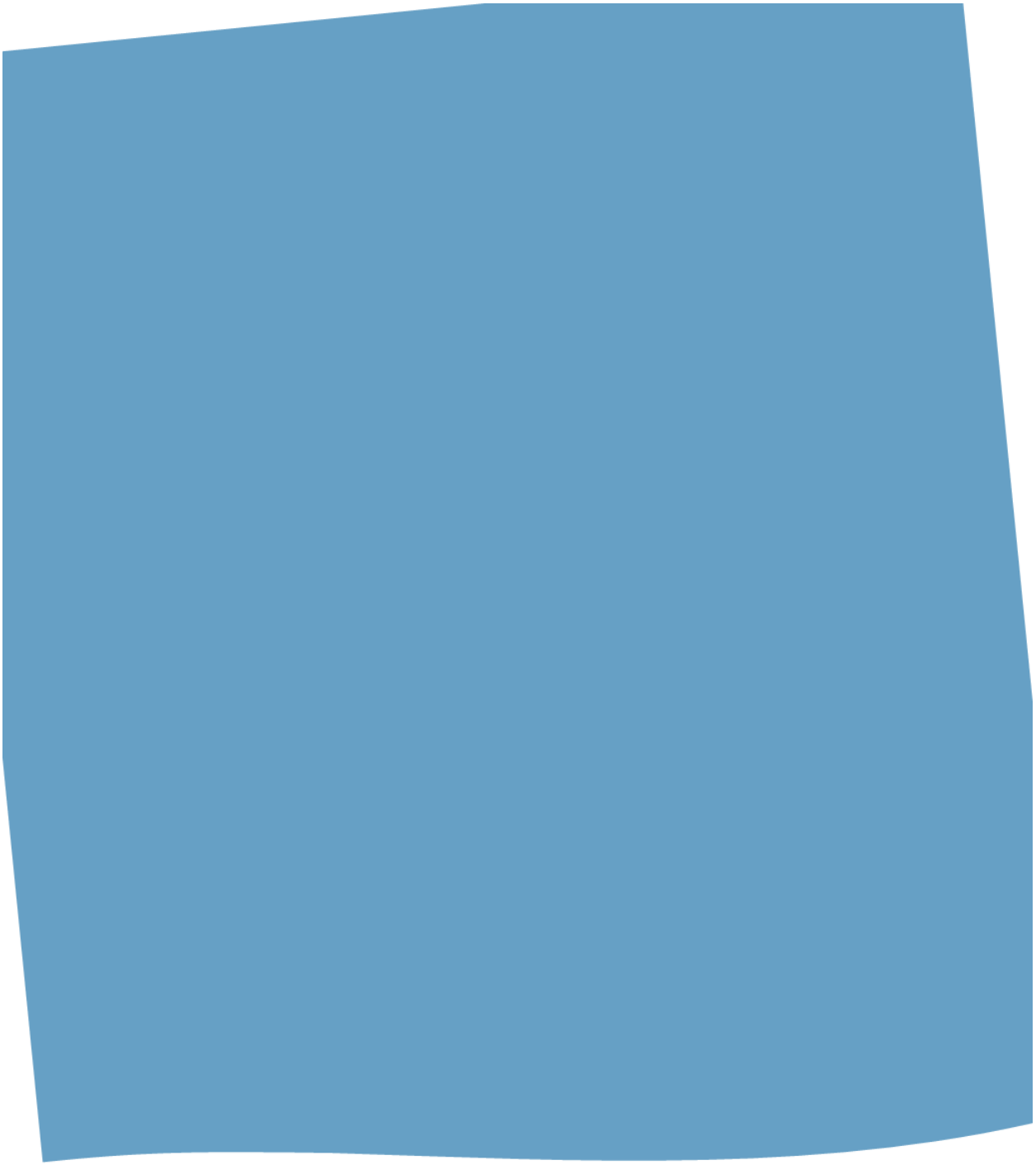
MATERIALS		DESTINATION					
Type of Material to be generated	Estimated Quantity as a % of Total	Specify outlet/contractor, location & details					
		Material Salvaged for Re-use		Material sent for Recycling		Material Disposed	
		EST %	Details	EST %	Details	EST %	Details
Soil		10%	All soil/clean fill delivered to landfill for cover material	%		%	
Rock		%		%		%	
Concrete	40%	%		40%	Delivered to concrete recycler	%	
Bricks	5%	5%	bricks recovered & delivered to salvage yard	%			
Timber - untreated	10%	10%	Raw timber framing delivered to salvage yard	%		%	
Timber - treated/ painted	%	%		%		%	
Timber - flooring	%	%		%		%	
Timber - pallets	%	%		%		%	
Timber - other	%	%		%		%	
Plasterboard	%	%		%		%	
Metal - steel	5%	%		5%	Sent directly to metal recycler	%	
Metal - copper	%	%		%		%	
Metal - other	%	%		%		%	
Masonry / tiles	%	%		%		%	
Doors & windows	5%	4%	Undamaged doors & windows delivered to salvage yard	%		1%	Damaged items to landfill

PART 1 - CONSTRUCTION & DEMOLITION PLAN	
Estimate of Total WASTE for the Project	200 tonnes

MATERIALS		DESTINATION					
Type of Material to be generated	Estimated Quantity as a % of Total	Specify outlet/contractor, location & details					
		Material Salvaged for Re-use		Material sent for Recycling		Material Disposed	
		EST %	Details	EST %	Details	EST %	Details
Fixtures and fittings	2%	2%	Undamaged fittings (taps, lights etc) to salvage yard	%		%	
Textiles & floor coverings	%	%		%		%	
Appliances	%	%		%		%	
Vegetation/trees	%	%		%		%	
Hazardous - asbestos	3%	%		%		3%	All asbestos to secure landfill burial
Hazardous - other	%	%		%		%	
Plastic wrap	%	%		%		%	
Plastic other	%	%		%		%	
Other - please specify:							
General Mixed Waste	20%	%		%		20%	Unrecoverable waste sent to landfill
	%	%		%		%	
TOTALS	100%	31%	Reused	45%	Recycled	24%	To Landfill

PART 2A - ONGOING USE OF PREMISES PLAN				
Waste stream to be generated	**Est volume per week (l or m³)**	**Proposed on site storage &/ or treatment facilities (include No. of bins where applicable)**	**Collection arrangements (who will collect bins? For example Contractors or Council)**	**Final Destination of materials**
Waste				
Recycling				
Organics - food				
Organics - garden				
Paper cardboard				
Other, please specify:				

PART 2B - BIN STORAGE PLAN	
	Provided
Please provide a Bin Storage Plan, detailing on-site storage areas for all waste streams, and kerbside (or other) collection points	



Hobart City Council
16 Elizabeth Street
Tasmania 7000 Australia
T 03 6238 2711
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Submission to Planning Authority Notice

Council Planning Permit No.	PLN-20-104	Council notice date	6/05/2020
TasWater details			
TasWater Reference No.	TWDA 2020/00607-HCC	Date of response	19/05/2020
TasWater Contact	Daria Rech Greg Cooper (Trade Waste)	Phone No.	(03) 6237 8222 (03) 6237 8280
Response issued to			
Council name	HOBART CITY COUNCIL		
Contact details	coh@hobartcity.com.au		
Development details			
Address	202-206 MACQUARIE ST, HOBART	Property ID (PID)	5669117
Description of development	New Building for Multiple Dwellings x 40, Childcare Centre, General Retail and Food Services		

Schedule of drawings/documents

Prepared by	Drawing/document No.	Revision No.	Date of Issue
Jaws Architect	Site Plan / 18052_DA02	02	28/01/2020
Gandy and Roberts Engineers	Concept Services Plan / 19.0123 / H010	1	11/10/2019
Gandy and Roberts Engineers	Concept Services Plan / 19.0123 H011	1	11/10/2019

Conditions

Pursuant to the *Water and Sewerage Industry Act* 2008 (TAS) Section 56P(1) TasWater imposes the following conditions on the permit for this application:

CONNECTIONS, METERING & BACKFLOW

1. A suitably sized water supply with metered connections / sewerage system and connections to the development must be designed and constructed to TasWater's satisfaction and be in accordance with any other conditions in this permit.

   ***Advice**: TasWater will not accept direct fire boosting from the network unless it can be demonstrated that the periodic testing of the system will not have a significant negative effect on our network and the minimum service requirements of other customers serviced by the network. To this end break tanks may be required with the rate of flow into the break tank controlled so that peak flows to fill the tank do not also cause negative effect on the network.*

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 of the development, any water connection utilised for construction must have a backflow prevention device and water meter installed, to the satisfaction of TasWater.

ASSET CREATION & INFRASTRUCTURE WORKS

4. Plans submitted with the application for Engineering Design Approval must, to the satisfaction of TasWater show, all existing, redundant and/or proposed property services and mains.

5. Prior to applying for a Permit to Construct to construct new infrastructure the developer must obtain from TasWater Engineering Design Approval for new TasWater infrastructure. The application for Engineering Design Approval must include engineering design plans prepared by a

suitably qualified person showing the hydraulic servicing requirements for water and sewerage to TasWater's satisfaction.

6. Prior to works commencing, a Permit to Construct must be applied for and issued by TasWater. All infrastructure works must be inspected by TasWater and be to TasWater's satisfaction.

7. In addition to any other conditions in this permit, all works must be constructed under the supervision of a suitably qualified person in accordance with TasWater's requirements.

8. Prior to the issue of a Certificate of Water and Sewerage Compliance (Building and/or Plumbing) all additions, extensions, alterations or upgrades to TasWater's water and sewerage infrastructure required to service the development, generally as shown on the concept servicing plan as per the schedule of drawings above, are to be constructed at the expense of the developer to the satisfaction of TasWater, with live connections performed by TasWater.

9. After testing, to TasWater's requirements, of newly created works, the developer must apply to TasWater for connection of these works to existing TasWater infrastructure, at the developer's cost.

10. At practical completion of the water and sewerage works and prior to applying to TasWater for a Certificate of Water and Sewerage Compliance (Building and/or Plumbing), the developer must obtain a Certificate of Practical Completion from TasWater for the works that will be transferred to TasWater. To obtain a Certificate of Practical Completion:

    a. Written confirmation from the supervising suitably qualified person certifying that the works have been constructed in accordance with the TasWater approved plans and specifications and that the appropriate level of workmanship has been achieved;

    b. A request for a joint on-site inspection with TasWater's authorised representative must be made;

    c. Security for the twelve (12) month defects liability period to the value of 10% of the works must be lodged with TasWater. This security must be in the form of a bank guarantee;

    d. As constructed drawings must be prepared by a suitably qualified person to TasWater's satisfaction and forwarded to TasWater.

11. After the Certificate of Practical Completion has been issued, a 12 month defects liability period applies to this infrastructure. During this period all defects must be rectified at the developer's cost and to the satisfaction of TasWater. A further 12 month defects liability period may be applied to defects after rectification. TasWater may, at its discretion, undertake rectification of any defects at the developer's cost. Upon completion, of the defects liability period the developer must request TasWater to issue a "Certificate of Final Acceptance". The newly constructed infrastructure will be transferred to TasWater upon issue of this certificate and TasWater will release any security held for the defects liability period.

12. The developer must take all precautions to protect existing TasWater infrastructure. Any damage caused to existing TasWater infrastructure during the construction period must be promptly reported to TasWater and repaired by TasWater at the developer's cost.

13. Ground levels over the TasWater assets and/or easements must not be altered without the written approval of TasWater.

14. A construction management plan must be submitted with the application for TasWater Engineering Design Approval. The construction management plan must detail how the new TasWater infrastructure will be constructed while maintaining current levels of services provided by TasWater to the community. The construction plan must also include a risk assessment and contingency plans covering major risks to TasWater during any works. The construction plan must be to the satisfaction of TasWater prior to TasWater's Engineering Design Approval being issued.

FINAL PLANS & EASEMENTS

15. Prior to the issue of a Certificate of Practical Completion / Certificate of Water & Sewerage Compliance (Building and/or Plumbing) pipeline easements, to TasWater's satisfaction, must be created over any existing or proposed TasWater infrastructure and be in accordance with TasWater's standard pipeline easement conditions.

16. Prior to the issue of a Certificate of Water & Sewerage Compliance (Building and or Plumbing) / Certificate of Practical Completion from TasWater, the applicant must submit a copy of the completed Transfer for the provision of a Pipeline and Services Easement(s) to cover existing/proposed TasWater infrastructure.

BOUNDARY TRAP AREA

17. The proposed development is within a boundary trap area and the developer must provide a boundary trap that prevents noxious gases or persistent odours back venting into the property's sanitary drain. The boundary trap must be contained within the property boundaries and the property owner remains responsible for the ownership, operation and maintenance of the boundary trap.

TRADE WASTE

18. Prior to the commencement of operation the developer/property owner must obtain Consent to discharge Trade Waste from TasWater.

19. The developer must install appropriately sized and suitable pre-treatment devices prior to gaining Consent to discharge.

20. The Developer/property owner must comply with all TasWater conditions prescribed in the Trade Waste Consent.

DEVELOPMENT ASSESSMENT FEES

21. 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 fees will be indexed, until the date paid to TasWater.

    The payment is required by the due date as noted on the statement when issued by TasWater.

Advice

General

For information on TasWater development standards, please visit

https://www.taswater.com.au/Development/Technical-Standards

For application forms please visit http://www.taswater.com.au/Development/Forms

Service Locations

Please note that the developer is responsible for arranging to locate the existing TasWater infrastructure and clearly showing it on the drawings. Existing TasWater infrastructure may be located by a surveyor and/or a private contractor engaged at the developers cost to locate the infrastructure.
The location of infrastructure as shown on the DBYD and The LISTmap is indicative only.

Water Supply Boundary Conditions

The proposed development is in the Hobart City Low Level zone. This is supplied from the Domain Twin Tanks with a design supply head of 100.3m AHD (Item 2.5.3.3 of the TasWater Supplement).
The connection points to the proposed development are assumed to be at an elevation of 35m AHD, giving a design static pressure of 65.3m in a well-looped network.

Modelling indicates that the Peak Day pressure at the domestic supply connection point would be approximately 560 kPa; Peak Day plus Fire Flow pressure at the hydrant and sprinkler connection point would be approximately 550 kPa.
It must be noted that these are the boundary pressures in the water mains themselves at the proposed connection points, and do not include losses through the actual connection or associated pipework.

Trade Waste

Prior to any Building and/or Plumbing work being undertaken, the applicant will need to make an application to TasWater for a Certificate for Certifiable Work (Building and/or Plumbing). The Certificate for Certifiable Work (Building and/or Plumbing) must accompany all documentation submitted to Council.
Documentation must include a floor and site plan with:

- Location of all pre-treatment devices i.e. Oil Water Separator;
- Schematic drawings and specification (including the size and type) of any proposed pre-treatment device and drainage design; and
- Location of an accessible sampling point in accordance with the TasWater Trade Waste Flow Meter and Sampling Specifications for sampling discharge.

At the time of submitting the Certificate for Certifiable Work (Building and/or Plumbing) a Trade Waste Application form is also required.
If the nature of the business changes or the business is sold, TasWater is required to be informed in order to review the pre-treatment assessment.
The application forms are available at http://www.taswater.com.au/Customers/Liquid-Trade-Waste/Commercial.

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			
Email	development@taswater.com.au	Web	www.taswater.com.au
Mail	GPO Box 1393 Hobart TAS 7001		

Application Referral Cultural Heritage - Response

From:	
Recommendation:	Proposal is acceptable without conditions.
Date Completed:	
Address:	202 - 206 MACQUARIE STREET, HOBART ADJACENT ROAD RESERVE
Proposal:	New Building for 40 Multiple Dwellings, Educational and Occasional Care (Childcare Centre), and General Retail and Hire, Business and Professional Services and Food Services
Application No:	PLN-20-104
Assessment Officer:	Mark O'Brien,

Referral Officer comments:

The site
202-208 Macquarie Street is a vacant site in the urban block bound by Macquarie, Davey, Molle and Barrack Street. The urban block is an assortment of buildings representing diverse architectural periods but unified by a consistent scale: a two to three storey height range (or datum). Buildings from the Metropolitan Drainage Board Plan No 43 endure, demonstrating a 19th century character and scale. The site of the proposed development was once occupied by a number of terrace houses. These have long since been demolished. In the 20th century, the site was used as a service station, this too is now demolished and the site remains vacant.

The proposal
The proposed development involves the building of a nine storey residential tower on a vacant lot. Excavation is proposed for an area of carparking to be accessed from a double crossover on Macquarie Street.

The Planning Scheme
The site of the proposed development is adjacent St Michael's School which includes Stephensville (Listed Place Table E13.1). Adjacency provisions in relation to a listed place (22.4.1 A5/P5 Height) are not engaged by this proposal. Assessment by reference to 22.4.1 A5/P5 is not required because the proposed building is separated from Stephensville by other existing buildings. Clause 22.4.3 A3/P3 Design, of the development standards for buildings and works in the Central Business Zone must be considered and satisfy both (a) and (b) to meet the acceptable solution. In this instance, the building does not have a flat facade and has awnings as required by both (a) and (b). Therefore the proposal satisfies 22.4.3 A3.

The heritage discretion in relation to this application is archaeology E13.10.1 P1, because excavation for the carparking is proposed.

Clause E13.10.1 P1 states:

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 applicant has provided an archaeology report by a suitably qualified person. The report states that the loss of significant archaeological remains is not anticipated.

From the report: "*it considered that the site has little or no archaeological potential. No further archaeological input into any development process is considered necessary".*

Representations
Over 618 representations were received, many of these raising heritage, streetscape and townscape issues as demonstrated in the following comments:

"The proposed development appears incompatible with the highly significant streetscape and views along Macquarie Street. (22.4.1 (a)).
The height and bulk of the development, particularly along the rear boundary which borders the school, will overshadow and overlook open space and heritage buildings within the school boundaries. This includes multiple, habitable rooms such as classrooms, assembly hall, chapel, boarding house playground and garden areas. (22.4.1 (c)).The building will interfere with view lines of Mt Wellington, particularly from our Performing Arts Centre, Broughton building and other users across Davey Street".

"This proposal, at 30 metres, is too high, considering that the proposed absolute maximum, recommended by Leigh Woolley and the City of Hobart's professional planning staff, is 15 metres. It is not compatible with the highly significant streetscape and views along Macquarie Street, and does not contribute positively to this streetscape and townscape, as is clear from the images provided by the applicant.Its height and bulk, particularly along the boundary with the school at the rear, will overshadow, and overlook, open space, classrooms, assembly hall, boarding house playground, garden areas, and heritage buildings, within the school boundaries.Views of the mountain, from across Davey Street, and from some areas within the school, will be taken away. For these reasons, I oppose this development"

Conclusion
None of the representations raised the issue of archaeology. The Planning Scheme provisions do not include a discretion relating to heritage, streetscape or townscape that can be considered in the assessment of this application. There are clearly concerns in the community regarding the loss of significant cultural heritage values, however the proposed development complies with the Scheme Provisions. The proposed development satisfies E13.10.1 P1 (Archaeology) and 22.4.3 A3 (Design).

07
10
2020

Application Referral Development Engineering - Response

From:	Cameron Cecil
Recommendation:	Proposal is acceptable subject to conditions.
Date Completed:	
Address:	202 - 206 MACQUARIE STREET, HOBART ADJACENT ROAD RESERVE
Proposal:	New Building for 40 Multiple Dwellings, Educational and Occasional Care (Childcare Centre), General Retail and Hire, Business and Professional Services, and Food Services
Application No:	PLN-20-104
Assessment Officer:	Mark O'Brien,

Referral Officer comments:

SUMMARY:

- The application is for a multi-storey (9 storeys) residential apartment complex (40 apartments), with two commercial tenancies on the ground floor and a childcare center on the first floor. The apartments are located on levels 2-9.
- 2 basement levels are proposed containing 45 car parking spaces, and two motorcycle parking spaces. Provision for five bicycle parking spaces has been included in a secured area on the ground floor.
- 5 of the car parking spaces on the first basement level are dedicated to the childcare center as the pick-up and drop-off area.

Discretions:
E5.5.1 P3 - Increase in vehicle movements in excess of 40 or 20%
E6.7.2 P1 - Vehicle stopping sight distance
E6.7.5 P1 - Geometry of circulation roadway

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 4: Access and parking constructed, sealed and drained prior to use
ENG 5: Number of spaces
ENG 8: Parking space user class and signage
ENG 12: Construction waste management plan
ENG 13: Waste management plan
ENG sw1: Stormwater drained to council infrastructure
ENG sw2: Stormwater condition report/CCTV

ENG sw4: New connection design
ENG sw5: Stormwater infrastructure design
ENG sw7: Stormwater detention and treatment
ENG r1: Structures supporting highway reservation
ENG r3: Design of crossover
ENG tr1: Signage and linemarking design
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
Structures Close to Council's Stormwater Main
Road Opening Permit (Occupation of the Public Highway)
New Stormwater Connection

DETAILED ASSESSMENT:

E5.0 Road and railway access code

E5.1 Purpose			E5.1.1 The purpose of this provision is to: (a) protect the safety and efficiency of the road and railway networks; and (b) reduce conflicts between sensitive uses and major roads and the rail network.
E5.2 Application of this Code	**YES**		
			This Code applies to use or development of land:
		No	(a) that will require a new vehicle crossing, junction or level crossing; or
	Yes		(b) that intensifies the use of an existing access; or
		No	(c) that involves a sensitive use, a building, works or subdivision within 50m metres of a Utilities zone that is part of:
		No	(i) a rail network;
		No	(ii) a category 1 - Trunk Road or a category 2 - Regional Freight Road, that is subject to a speed limit of more than 60km/h kilometres per hour.
Clause for Assessment			**Comments / Discussion (in bold)**
Clause 5.5.1 Existing road accesses and junctions			**Acceptable Solution A3:** **NOT SATISFIED** The annual average daily traffic (AADT) of vehicle movements, to and from a site, using an existing access

PERFORMANCE CRITERIA		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. **Per TIA by Milan Prodanovic, assume 3.5 vehicle movements per apartment per day.** **40 (dwellings) x 3.5 (movements) = 140 daily vehicle trips for the residential apartments.** **The TIA estimates that the childcare center will generate around 170 vpd.** **Hence, total vpd for the development/access will be in the order of 310 vpd.** **Performance Criteria – P3: SATISFIED** 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 impact of the increase in vehicle movements at this site is offset by the fact that the future occupants of the apartments will most likely have been commuting to work from their previous addresses anyway.** • **The RTA Guide to Traffic Generating Developments suggests around 10 vpd for general residential areas in Sydney, whilst multi-storey apartment buildings (ie. high density residential) generate only around 1.5 vpd.** • **Per TIA the right hand lane in Macquarie Street has sufficient capacity to accommodate the increase in vehicle movements.** • **Multi-storey apartments in the CBD generate far less traffic than the equivalent standalone residential dwellings. The construction of these apartments will reduce the number of people who would otherwise be living in general residential dwellings, and will therefore result in less traffic generation overall.** (b) the nature of the traffic generated by the use; - • **Predominantly cars which have negligible impact on efficiency** (c) the nature and efficiency of the access or the junction; - • **Private driveway of sufficient width and geometry to enable efficient use** (d) the nature and category of the road; - • **Macquarie Street is a multi-lane, category 1 trunk road connecting the States capital city**

			with the major regional centres to the North. • **The capacity of the right-most lane to accommodate the additional vehicle movements has been adequately addressed in the TIA (Prodanovic) and Council's development engineer agrees with the findings of the TIA** (e) the speed limit and traffic flow of the road; **-** • **Refer to the TIA (Prodanovic)** • **Speed limit is 50 km/hr which facilitates vehicle movements into and out of the development.** • **Traffic on Macquarie moves in platoons due to the timing of the lights. The time between platoons is sufficient to enable efficient vehicle movements into and out of the development.** (f) any alternative access to a road; **-** • **No alternative access is possible for the proposed development.** (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; and **-** • **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. **-** • **The TIA has been endorsed by the Department of State Growth through the land-owner consent process.** **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.**
Clause 5.5.2 Existing level crossings **NOT APPLICABLE**			**No intensification of an existing level crossing proposed.**
Clause 5.6.1 development adjacent to roads and railways **NOT APPLICABLE**			**Although the road is category 1, the speed limit is less than 60 km/hr and therefore this clause does not apply.**

Clause 5.6.2 road and access junctions **NOT APPLICABLE**			**No new access or junction proposed.**
Clause 5.6.3 new level crossings **NOT APPLICABLE**			**No new level crossings proposed.**
Clause 5.6.4 sight distance at access and junctions **NOT APPLICABLE**			**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

E6.1 Purpose			The purpose of this provision is to:
			(a) ensure safe and efficient access to the road network for all users, including drivers, passengers, pedestrians and cyclists;
			(b) ensure enough parking is provided for a use or development to meet the reasonable requirements of users, including people with disabilities;
			(c) ensure sufficient parking is provided on site to minimise on-street parking and maximise the efficiency of the road network;
			(d) ensure parking areas are designed and located in conformity with recognised standards to enable safe, easy and efficient use and contribute to the creation of vibrant and liveable places;
			(e) ensure access and parking areas are designed and located to be safe for users by minimising the potential for conflicts involving pedestrians, cyclists and vehicles; and by reducing opportunities for crime or anti-social behaviour;
			(f) ensure that vehicle access and parking areas do not adversely impact on amenity, site characteristics or hazards;
			(g) recognise the complementary use and benefit of public transport and non-motorised modes of transport such as bicycles and walking;
			(h) provide for safe servicing of use or development by commercial vehicles.
E6.2 Application of this Code	**YES**	—	**This code applies to all use and development.**
Clause for Assessment			**Comments / Discussion (in bold)**

Clause 6.7.1 Number of Car Parking Spaces - Central Business Zone **ACCEPTABLE SOLUTION**			**Acceptable solution - A1: SATISFIED** (a) No on-site parking is provided; or (b) on-site parking is provided at a maximum rate of 1 space per 200m2 of gross floor area for commercial uses; or N/A (c) on-site parking is provided at a maximum rate of 1 space per dwelling for residential uses; or (d) on-site parking is required operationally for an essential public service, including, hospital, police or other emergency service. N/A • **40 car-parking spaces are proposed for the residential apartments which meets the acceptable solution of one space per apartment** • **5 car-parking spaces are provided for the childcare center to allow for pick-up and drop-off** • **No staff parking is proposed for the childcare center which meets the acceptable solution** • **No parking is proposed for the two residential tenancies which meets the acceptable solution**
Clause 6.7.1 number of vehicle accesses **ACCEPTABLE SOLUTION**			**Acceptable solution: SATISFIED** 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. • **The site has two existing crossovers, it is proposed to remove one and make the remaining crossover wider.** • **There will only be one access.**
Clause 6.7.2 design vehicle access **PERFORMANCE CRITERIA**			**Acceptable Solution - A1: NOT SATISFIED** 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 - • **Entering sight distance does not meet AS2890.1 due to conflict with the kerb-side parking in Macquarie Street** **Performance Criteria - P1: SATISFIED** 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;

- **The pedestrian sight distance meets the acceptable solution**
- **The entering sight distance for vehicles is inhibited by the kerb-side parking in Macquarie Street**

The access is proposed to be used to facilitate pick-up and drop-off for the childcare centre, it follows that during pick-up the exiting vehicles will often have a child in the front passenger seat that would be exposed to a collision. Adequate sight distance such that the level of risk associated with use of the access is minimised is therefore imperative.

To this effect the consultant has proposed modification of the kerb-side parking to restrict use of the relevant spaces during peak pick-up and drop-off times. This is considered to be a satisfactory compromise that can be supported with appropriate conditions. CONDITION FOR PARKING RESTRICTIONS

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

- **Refer to the TIA (Prodanovic)**
- **Speed limit is 50 km/hr which facilitates vehicle movements into and out of the development.**
- **Traffic on Macquarie moves in platoons due to the timing of the lights. The time between platoons is sufficient to enable efficient vehicle movements into and out of the development.**
- **The capacity of the right-most lane to accommodate the additional vehicle movements has been adequately addressed in the TIA (Prodanovic) and Council's development engineer agrees with the findings of the TIA**

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

- **Predominantly used by cars which have negligible impact on efficiency**
- **Private driveway is of sufficient width and geometry to enable efficient use**

(d) ease of accessibility and recognition for users.

- **The location of the access will permit easy use**
- **The access is consistent with surrounding properties and as such ease of recognition is acceptable**

Based on the above assessment the design of the access may be accepted under *Performance Criteria P1:E6.7.2* of the Planning Scheme.

Clause 6.7.3 vehicle passing **ACCEPTABLE SOLUTION**			**Acceptable solution - A1**: - **SATISFIED** 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; **OK** • **The access will serve 45 parking spaces** (ii) is more than 30 m long; **OK** (iii) it meets a road serving more than 6000 vehicles per day; **OK** (b) be 6 m long, 5.5 m wide, and taper to the width of the driveway; **OK** • **The proposed crossover and access driveway is approximately 6m in width which allows for concurrent use by two vehicles** (c) have the first passing area constructed at the kerb; **OK** • **The proposed crossover and access driveway is approximately 6m in width which allows for concurrent use by two vehicles** (d) be at intervals of no more than 30 m along the access. **OK** • **The proposed access driveway is approximately 6m in width for its full length which allows for concurrent use by two vehicles**
Clause 6.7.4 on site turning **ACCEPTABLE SOLUTION**			**Acceptable solution - A1: SATISFIED** 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; • **There are 40 apartments** (b) it meets a road carrying less than 6000 vehicles per day. • **Macquarie Street carries in excess of 6000 vpd** **On-site turning is possible and vehicles will exit the site in a forwards direction**
Clause 6.7.5 layout of parking area **PERFORMANCE CRITERIA**			**Acceptable Solution A1: NOT SATISFIED** The layout of car parking spaces, access aisles, circulation roadways and ramps must be designed and constructed to comply with section 2 “Design of Parking Modules, Circulation Roadways and Ramps” of AS/NZS 2890.1:2004 Parking Facilities Part 1: Off-street car parking and must have sufficient headroom to comply with

clause 5.3 “Headroom” of the same Standard.

Car Parking Space Dimensions (AS2890.1 Fig 2.2 = 2.4x5.4m Class 1A): **OK**

Car Parking Space Design Envelope (AS2890.1 Fig 5.2 300mm clearance on side): **OK**

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): **OK**

Parking Module Gradient (manoeuvring area 5% Acceptable Soln, 10% Performance): **OK**

Driveway Gradient & Width (AS2890.1 Section 2.6 = 25% and 3m): **NO**

- **Clause 2.5.2 of AS2890.1 requires a 600mm wide separator between lanes for the curved bend on the entrance ramp.**
- **Due to geometric constraints the consultant has proposed a 300mm width separator.**
- **A 300mm width separator can be accepted as a performance based alternative.**

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 End Widening (AS2890.1 Fig 2.3 = 1m extra): **OK**

Performance Criteria - P1: SATISFIED
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.

- **Clause 2.5.2 of AS2890.1 requires a 600mm wide separator between lanes for the curved bend on the entrance ramp.**
- **Due to geometric constraints the consultant has proposed a 300mm width separator.**
- **The 300mm width separator is considered satisfactory for the relatively low traffic volumes using the access driveway.**
- **User safety and convenience are not compromised.**

Clause 6.7.6 surface treatment **ACCEPTABLE SOLUTION**			**Acceptable Solution - A1:** - **SATISFIED** Parking spaces and vehicle circulation roadways must be in accordance with all of the following; (a) paved or treated with a durable all-weather pavement where within 75m of a property boundary or a sealed roadway; (b) drained to an approved stormwater system, unless the road from which access is provided to the property is unsealed. **Driveway and parking area will be concrete and adequate drainage is proposed.**
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 **ACCEPTABLE SOLUTION**			**Acceptable Solution A1:** - **SATISFIED** 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; **OK** (b) be located within 30 m of the main entrance to the building. **OK** **Submitted documentation indicates adequate motorcycle parking provisions on-site.**
Clause 6.7.10 bicycle parking **NOT APPLICABLE**			**No bicycle parking is required by E6.7.10 for residential apartments**
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 **ACCEPTABLE SOLUTION**			**Acceptable Solution A1:** - **SATISFIED** 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; **OK** • **A loading zone exists on the opposite side of Macquarie Street that is within 50m of the site** (b) the use is not primarily dependent on outward delivery of goods from the site. **OK** • **The commercial tenancies will be vacant and therefore the use is unknown at this stage** • **The childcare is not dependent on outward bound goods**
Clause 6.7.14 access to a road **ACCEPTABLE SOLUTION**			**Acceptable Solution A1: SATISFIED** Access to a road must be in accordance with the requirements of the road authority.
Clause 6.7.15 access to Niree Lane **NOT APPLICABLE**			**No development proposed within Niree Lane.**

URBAN DESIGN ADVISORY PANEL

MINUTES

PLN-20-104 – 202- 206 MACQUARIE STREET – NEW BUILDING FOR 40 MULTIPLE DWELLINGS, EDUCATIONAL AND OCCASIONAL CARE (CHILDCARE CENTRE), AND GENERAL RETAIL AND HIRE, BUSINESS AND PROFESSIONAL SERVICES AND FOOD SERVICES

Description:

The application proposes the redevelopment of the currently vacant site to facilitate a new mixed-use building for 40 residential apartments, a first floor childcare centre and two ground floor commercial tenancies. Two basement levels provide parking for 45 cars and two motorcycles. Bicycle parking is also incorporated.

The proposed building consists of nine floors above ground level and an overall maximum height of 30 metres above natural ground level reducing to 20 metres, 15 metres from the front property boundary. External materials are contemporary, including brick and concrete, fibre cement sheeting, large areas of glazing, painted metal and power coated aluminium. Landscape details have been incorporated into the building's design, including trees adjacent to the ground level vehicle access and planters around a level 6 rooftop common deck and also the first floor childcare centre.

The total gross floor area of the proposed building is 9,786m².

Comment:

The Panel was disappointed that the Application was not accompanied by a Design Statement, nor were shadow diagrams submitted illustrating overshadowing impacts on the adjacent school grounds and properties.

The Proponent is not currently the owner of the site.

The Panel noted that the application had apparently been designed in a manner calculated to meet Acceptable Solutions pertaining to the relevant provisions within the *City of Hobart Planning Scheme 2015* (Planning Scheme).

As a consequence the Panel recognises that, in accordance with its Terms of Reference, there would appear to be very little opportunity for it to provide '*advice limited to compliance with relevant urban design provisions of the Council's Planning Scheme'.*

This is troubling to the Panel given that it is profoundly concerned about the nature of this proposal, its potential impact on the amenity of the adjacent school and in the opinion of the Panel, its scant regard for the adjacent heritage buildings (including curtilage) and the overall streetscape/townscape qualities of the area.

The Panel agreed that the Proposal is completely inappropriate for this site even though it may be argued successfully that it complies with the current provisions of the Planning Scheme, notwithstanding that a number of the Zone Purpose Statements, Desired future Character Statements and Objectives, and Development Standards have not been met.

There are excellent examples in Hobart where developers have moderated their expectations, developed below the full extent possible under the Acceptable Solutions within the Planning Scheme and as a consequence contributed positively to the urban fabric of Hobart.

It is within this context and the Panel's Terms of Reference requiring it to promote good design and a high quality urban environment, that these comments are directed to the Proponent and the Council.

The urban analysis of the surrounding area, included with the documentation submitted by the Proponent, failed in the opinion of the Panel to give a true reflection of the actual urban context for the development site. The urban character of the 'school block' is in fact defined predominantly by low scale buildings, heritage listed properties, places of historic interest and value, and landscaped open spaces with mature trees. Office buildings and apartment buildings nearby are modest in scale.

It is largely an educational precinct with considerable heritage value, cultural worth and amenity.

The Proposal's height and overshadowing will result in an intrusive and dominant building with a negative contribution to the Macquarie Street streetscape and broader townscape. Impacts on the surrounding townscape when experienced from upper Macquarie Street, Barrack Street, Davey Street, the Anglesea Barracks Precinct and adjacent park, including views to Mt Wellington will be severe.

The Panel raises in addition a number of incidental points:

- The proposed awning on the Macquarie Street frontage is not a consistent characteristic of the streetscape and is not supported.
- There is a need for a comprehensive landscape plan with particular reference to the external 'natural' sunny spaces being provided for children to experience in

the child care centre and the proposed planting adjacent to the ground floor vehicular entry. The protection of mature trees and vegetation on adjacent properties during construction will also need specific consideration.

- Concerns were raised with the design of some of the apartments with regards to the adequacy of natural ventilation and daylight.
- The lack of setback from side and rear boundaries was also noted. This would not comply with the acceptable solutions contained within the recently approved Planning Scheme Amendment PSA 19-1 Residential and Visitor Accommodation Amenity that comes into effect 19 November 2020.

Finally the Panel feels obliged to draw to the attention of the Council the fact that had the proposed Amendment to the Hobart Interim Planning Scheme, prepared by the Council June 2018, following the work undertaken by Architect Leigh Woolley on Building Heights, been progressed to a positive conclusion, this Proposal could have had a more relevant and appropriate level of consideration. Even if the maximum height limits proposed by that amendment had been completely removed or deferred, the Acceptable Solution building heights proposed in the amendment were far more appropriate for this site and the performance criteria for additional discretionary height would have required a more rigorous assessment of urban design and heritage values.