

# PENRITH CITY COUNCIL

## MAJOR ASSESSMENT REPORT

<b>Application number:</b>	DA20/0798
<b>Proposed development:</b>	Construction of a 6 Storey Mixed Use Development comprising of 2 Commercial Type Tenancies at the Ground Floor with Five Levels of Residential Apartments Above containing 18 Units Located Above Two Levels of Basement Car Parking & Consolidation of 3 Lots
<b>Property address:</b>	118 Station Street, PENRITH NSW 2750 120 Station Street, PENRITH NSW 2750
<b>Property description:</b>	Lot 5 DP 112466 Lot 6 DP 1003862 Lot 4 DP 112466
<b>Date received:</b>	27 November 2020
<b>Assessing officer</b>	Robert Walker
<b>Zoning:</b>	Zone B4 Mixed Use - LEP 2010
<b>Class of building:</b>	Class 2 , Class 6 , Class 7a
<b>Recommendations:</b>	Approve

## Executive Summary

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Council is in receipt of Development Application No. 20/0798, which seeks Development Consent for the construction of a 6 storey mixed use development, comprising of 2 commercial type tenancies at the ground floor with 5 levels of residential apartments above containing 18 units located above 2 levels of basement car parking and consolidation of 3 lots, at Nos. 118-120 Station Street, Penrith.

Four (4) of the apartments are to be used for affordable housing purposes, pursuant to the provisions of State Environmental Planning Policy (Affordable Rental Housing) 2009 .

The subject site is zoned 'B4 - Mixed Use' pursuant to the Penrith Local Environmental Plan 2010. The proposed development is defined as 'commercial premises' and a 'residential flat building', which are permitted in the zone. It is considered that the proposal meets the objectives of the 'B4 - Mixed Use' zone.

The application was advertised and notified in accordance with the Penrith City Council Community Engagement Strategy, and 2 submissions were received. Conditions have been included within the recommended conditions to respond to the matters raised within the submissions.

The proposal satisfactorily responds to key planning considerations, such as, urban design, built form, residential amenity, servicing and car parking.

The application was presented to Council's Urban Design Review Panel in May 2021 and detailed comments provided to the Applicant. Subsequently a preliminary version of the current Architectural / design plans were provided to the Urban Design Review Panel for further comment. In response to such, the Urban Design Review Panel advised that the amendments provide an overall improved design and have responded comprehensively to all Urban Design Review Panel recommendations made following the meeting in May 2021.

As a land owner is a Penrith City Councillor and as the development is one to which State Environmental Planning Policy No. 65 applies and is 4 or more storeys in height, the application is to be determined by the Penrith Local Planning Panel, in accordance with the Local Planning Panels Direction, issued by the Minister for Planning under Section 9.1 of the Environmental Planning & Assessment Act 1979.

The application has been assessed in accordance with the matters for consideration under Section 4.15 of the Environmental Planning & Assessment Act 1979, and overall it is considered that the proposal is suitable for the site and it is recommended that the application be approved subject to the recommended conditions.

## Site & Surrounds

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The subject site is known as No. 118-120 Station Street, Penrith, and comprises of three allotments, legally described as Lot 6 in DP 1003862 and Lots 4 & 5 in DP 112466. The site is located in the Penrith City Centre, approximately 650m (walking distance) to the south of the Penrith Railway Station, on the corner of Station and Reserve Streets.

The site has an overall area of approximately 934sqm, is relatively flat (between RL27.42m and RL27.8m) and is devoid of any trees or noteworthy vegetation. The land immediately to the south east contains a single storey dual occupancy development, while the land immediately to the north east contains a 7 storey residential apartment building. On the opposite side of Reserve Street to the south is the Nepean Village Shopping Centre including associated open car parking area, while on the opposite side of Station Street to the north west is the Penrith War Memorial Swimming Complex (known as Ripples) including associated open car parking area.

The street block bounded by Station Street, Reserve Street, Woodriff Street to the east and Derby Street to the north, currently contains older low density commercial and residential housing stock, and a large portion of the block is utilised as an unformed overflow car parking area, which is in the ownership of Penrith City Council.

## Proposal

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The Development Application proposes the construction of a six (6) storey mixed use development, comprising of two (2) commercial type tenancies at the ground floor, with five (5) levels of residential apartments above containing 18 apartments, located above two (2) levels of basement car parking, and consolidation of three (3)

lots.

Specific details of the proposed development are as follows:

#### Lower Level Basement

- Containing 18 car parking spaces (16 residential spaces and 2 accessible residential spaces), individual residential storage compartments, bicycle rack, 2 electric vehicle charging stations and a plant room.

#### Lower Level Basement

- Containing 14 car parking spaces (2 commercial spaces, 7 residential spaces, 1 accessible residential space and 4 residential visitor spaces), bicycle racks, individual residential storage compartments and a plant room.

This equates to a total of 32 car parking spaces, comprising of 2 commercial spaces, 23 residential spaces, 3 accessible residential spaces and 4 residential visitor spaces. It is noted that the basement is accessed via a two-way driveway from Reserve Street.

#### Ground Floor / Level

- Two (2) commercial type tenancies, with floor spaces of approximately 93sqm and 72sqm. It is noted that the proposal does not involve the fit out or use of the commercial tenancies and no such details have been provided.
- A foyer (accessed from both Station and Reserve Streets).
- Residential waste / bin room, which is connected to be bin chutes.
- Commercial waste / bin room.
- Bulky waste items room.
- Service room.
- Hydrant booster pump.
- A loading dock area, accessed via a driveway from Reserve Street (for service vehicles and garbage collection), which can accommodate a (9.7m long) heavy rigid rear loading waste vehicle.
- Site landscaping.

#### First, Second and Third Floors

- Each contains 4 residential apartments, 1 x 2 bedroom livable apartment, 1 x 2 bedroom affordable apartment and 2 x 3 bedroom apartments.

#### Fourth Floor

- Contains 3 residential apartments, 1 x 2 bedroom adaptable apartment, 1 x 2 bedroom affordable apartment and 1 x 3 bedroom apartment.

#### Fifth Floor

- Contains 3 residential apartments, 1 x 2 bedroom adaptable apartment, 1 x 2 bedroom apartment and 1 x 3 bedroom apartment.

This equates to a total of 18 residential apartments, 1 x 2 bedroom apartment, 2 x 2 bedroom adaptable apartments, 3 x 2 bedroom livable apartments, 4 x 2 bedroom affordable apartments and 8 x 3 bedroom apartments.

#### Roof Top

- An open communal open space area, within the centre portion surrounded by planter boxes, which is approximately 277sqm in area.

It is noted that the layout includes the provision of a lift, which provides access to all of the aforementioned levels.

## Plans that apply

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- Local Environmental Plan 2010
- Development Control Plan 2014
- State Environmental Planning Policy (Affordable Rental Housing) 2009
- State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004
- State Environmental Planning Policy No 55—Remediation of Land
- State Environmental Planning Policy No 65—Design Quality of Residential Flat Development
- Sydney Regional Environmental Plan No.20 - Hawkesbury Nepean River

## Planning Assessment

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### • Section 4.15 - Evaluation

The proposed development has been assessed in accordance with the matters for consideration under Section 4.15 of the Environmental Planning & Assessment Act 1979, and having regard to such, the following have been identified for consideration.

### Section 4.15(1)(a)(i) The provisions of any environmental planning instrument

#### **State Environmental Planning Policy (Affordable Rental Housing) 2009**

Assessment of the proposal has been undertaken in accordance with the relevant criteria of State Environmental Planning Policy (Affordable Rental Housing) 2009.

As 'residential flat buildings' are permitted on the land (pursuant to the Penrith Local Environmental Plan 2010), that the proposal involves 21% of the gross floor area of the overall development to be used for affordable housing purposes and that the site is located within an accessible area (being approximately 650m walking distance to the Penrith Railway Station), the provisions of Part 2 Division 1 (Clauses 10 to 18) of the Affordable Rental Housing SEPP, apply to the proposed development.

The following key matters are noted in relation to the proposal:

- A 'maximum floor space ratio' of 2:1 applies to the site (pursuant to the Penrith Local Environmental Plan 2010), though given that the proposal involves 21% of the gross floor area of the overall development to be used for affordable housing purposes, the provisions of Clause 13 apply. In accordance with Clause 13, if the existing maximum floor space ratio is 2.5:1 or less and the percentage of the gross floor area of the development that is used for affordable housing is less than 50%, then the percentage of the gross floor area of the development that is used for affordable housing, is added to the existing maximum floor space ratio. Accordingly, a 'maximum floor space ratio' of 2.21:1 applies to the proposed development. The proposal provides a floor space ratio of approximately 2.09:1.
- It is noted that consideration of the site area, landscaped area, the provision of deep soil zones, solar access, parking space numbers, apartment sizes and associated matters, has been undertaken pursuant to other relevant planning provisions which apply to the proposal and it has been found to be suitable.
- The provisions of State Environmental Planning Policy No. 65 are applicable to the proposal. Accordingly, Clause 15 does not apply to the proposal.
- It is considered that the density and scale of the overall proposal is compatible with the character of the local area and accordingly is consistent with the requirements of Clause 16A.
- In accordance with Clause 17, conditions of consent must be imposed in relation to the use of the relevant apartments for affordable housing purposes for at least 10 years and that such will be managed by a registered community housing provider, and that an associated restriction outlining such is registered on the title. An associated condition has been included within the recommended conditions.
- It is noted that the proposal does not involve any subdivision.

## **State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004**

A BASIX Certificate (No. 1132998M\_03) has been provided for the proposal and relevant commitments made on the accompanying Architectural Plans. Moreover, a condition has been included within the recommended conditions requiring the commitments to be fulfilled.

It is therefore considered that the proposal is acceptable in regard to State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004.

## **State Environmental Planning Policy No 55—Remediation of Land**

The application was accompanied by a Detailed Site Investigation, which concluded that the site does not present a risk to human health or the environment, and is suitable for the proposed development

Furthermore, it is noted that consideration of the application by Council's Senior Environmental Health Officer, found the proposal to be satisfactory in this regard, subject to the imposition of associated conditions, which have been included within the recommended conditions. Additionally, it is noted that the site is not located on land declared as an investigation area under the Contaminated Land Management Act 1997.

Accordingly, it is considered that the proposal satisfies the provisions of State Environmental Planning Policy No. 55.

## **State Environmental Planning Policy No 65—Design Quality of Residential Flat Development**

State Environmental Planning Policy No. 65 applies to 'residential flat building' developments, that involve the construction of a new building, which is at least 3 storeys and contains 4 or more dwellings.

Pursuant to Clause 28 (2) (b) of State Environmental Planning Policy No. 65, consideration must be given to the design quality of the development, by evaluating such against a number of 'Design Quality Principles'. The following provides responses to the 'Design Quality Principles'.

### *Principle 1: Context and Neighbourhood Character*

It is considered that the proposal provides an acceptable design response and will positively contribute, to the context and character of the Penrith City Centre South / Mixed Use Precinct. Furthermore, the overall design provides features which respond to the location of the site which shall provide additional activity within the area.

### *Principle 2: Built Form and Scale*

The built form of the development is considered an appropriate response to the attributes of the site. The development provides a high level of internal amenity to the apartments in that natural cross-flow ventilation and solar access are prevalent in the majority of apartments.

The built form has regard to the development potential of neighbouring sites, whereby the property directly to the south would be capable of a similar development.

### *Principle 3: Density*

While the proposal exceeds the 'maximum floor space ratio' of 2:1, pursuant to the Penrith Local Environmental Plan 2010 and relies upon the associated floor space ratio provisions of State Environmental Planning Policy (Affordable Rental Housing) 2009, it satisfies the maximum building height, maximum floorplate, maximum site coverage and street / front building setback provisions, of the Penrith Local Environmental Plan 2010 and the Penrith Development Control Plan 2014, and the overall density is considered to be in keeping with the Penrith City Centre South / Mixed Use Precinct.

### *Principle 4: Sustainability*

The development is considered to have been designed to make use of natural resources particularly in terms of natural ventilation and solar access. The communal open space proposed on the rooftop allows

passive solar access to it and making it an attractive recreation area for the residents.

Furthermore, the proposal utilises a variety of building materials, including materials with low embodied energy and materials of low reflectivity.

#### *Principle 5: Landscape*

Given the context of the site within the Penrith City Centre South / Mixed Use Precinct, the provision of substantial perimeter landscaped areas, coupled with a roof top garden, results in a good level of site landscaping of a scale beyond that provided on other sites in the vicinity.

#### *Principle 6: Amenity*

It is considered that the amenity provided to the majority of apartments is of a high standard, given the apartment sizes and layouts, the level of cross-ventilation, northern aspect and general outlook. Furthermore, the provision of a substantial roof top communal open space area provides an attractive recreation area for residents.

#### *Principle 7: Safety*

The ground floor commercial tenancies are configured to address both Station Street and Reserve Street, and provide active frontages. The entrances to the building are located so there are no hidden corners away from view and the layout provides for the overlooking of the adjacent public spaces. As such, the issue of safety and security is considered to be satisfactorily addressed by the development.

#### *Principle 8: Housing Diversity and Social Interaction*

The proposal provides a mix of apartment types and sizes, including adaptable apartments, which encourages diversity. The overall layout includes several areas of formal and informal meeting spaces thereby providing for social interaction.

#### *Principle 9: Aesthetics*

It is considered that the building consists of a balanced composition of built form, modulations, materials and finishes which will contribute to the desired future character of the area.

It is noted that in accordance with the requirements of Clause 50 of the Environmental Planning and Assessment Regulation 2000, a Design Verification Statement has been prepared by a qualified Architect, Pavlo Doroch (Registration No. 9170), verifying that the design achieves compliance with the 'Design Quality Principles'.

Pursuant to Clause 28 (2) (c) of State Environmental Planning Policy No. 65, consideration is to be given to the 'Apartment Design Guide'. The following details the assessment of the proposal in accordance with the relevant 'design criteria' requirements of the 'Apartment Design Guide'.

#### Objective 3D-1 (1) – Communal and Public Open Space

Communal open space is to have a minimum area equal to 25% of the site.

*Proposal:* A total of 277sqm of communal open space is provided, which equates to 29.7% of the site area.

#### Objective 3D-1 (2) – Communal and Public Open Space

Developments are to achieve a minimum of 50% direct sunlight to the principal usable part of the communal open space for a minimum of 2 hours between 9am and 3pm on 21 June (mid-winter).

*Proposal:* The communal open space area shall receive full direct sunlight between 9am and 3pm on 21 June (mid-winter).

#### Objective 3E-1 (1) – Deep Soil Zones

For sites between 650sqm and 1,500sqm in area, a minimum 7% of site area is to be a deep soil zone, with minimum dimensions of 3m.

*Proposal:* A total of 82sqm of deep soil zone is provided, which equates to 8.8% of the site area.

#### Objective 3F-1 (1) – Visual Privacy

Separation between windows and balconies is to be provided to ensure visual privacy is achieved. For building heights up to 12m (4 storeys) minimum separation distances from buildings (to the side and rear boundaries) of 6m for habitable rooms and balconies, and of 3m for non-habitable rooms, are to be provided. While for building heights up to 25m (5-8 storeys) minimum separation distances from buildings (to the side and rear boundaries) of 9m for habitable rooms and balconies, and of 4.5m for non-habitable rooms, are to be provided.

*Proposal:* The layout, at the First Floor Level, provides a minimum building setback of 8.4m and 1.6m for balcony sections from the north eastern boundary. The layout, at the First Floor Level, provides a minimum building setback of 5.8m and approximately 4.7m for balcony sections from the south eastern boundary.

The layout, at the Second and Third Floor Levels, provides a minimum building setback of 8.4m and 6.4m for balcony sections from the north eastern boundary. The layout, at the Second and Third Floor Levels, provides a minimum building setback of 6m and approximately 4.7m for balcony sections from the south eastern boundary.

The layout, at the Fourth Floor Level, provides a minimum building setback of 9.7m and 9m for balcony sections from the north eastern boundary. The layout, at the Fourth Floor Level, provides a minimum building setback of 8.2m and approximately 7.4m for balcony sections from the south eastern boundary.

The layout, at the Fifth Floor Level, provides a minimum building setback of 9.5m and 9m for balcony sections from the north eastern boundary. The layout, at the Fifth Floor Level, provides a minimum building setback of 8m and approximately 7.4m for balcony sections from the south eastern boundary.

*Non-compliance:* The layout is non-compliant in relation to the First Floor balcony setback from the north eastern boundary and elements in the southern corner of the building at all residential levels from the south eastern boundary.

Given that the non-compliance from the north eastern boundary is limited to over-sized podium type balconies which are surrounded by substantial planter box type landscaping, and that the non-compliance from the south eastern boundary is relatively minor and is limited to the very southern portion of the elevation adjacent to the Reserve Street frontage, it is considered that such is acceptable in this regard.

#### Objective 3J-1 – Bicycle and Car Parking

For development on sites that are within 800m of a railway station or light rail stop in the Sydney Metropolitan Area, the minimum car parking requirement for residents and visitors is set out in the Guide to Traffic Generating Developments, or the car parking requirement prescribed by the relevant council, whichever is less. Note: the car parking needs for a development must be provided off street.

*Proposal:* As the site is located approximately 650m from the entrance to the Penrith Railway Station, consideration must be given to both the residential parking requirements, of the then Roads & Traffic Authority's Guide to Traffic Generating Developments and to the Penrith Development Control Plan 2014. The Roads & Traffic Authority's Guide to Traffic Generating Developments requires the provision of 20 spaces for the residential component (17 spaces for residents and 3 for visitors), while Council's car parking provisions (as detailed within the Penrith Development Control Plan 2014) requires the provision of 30 spaces for the residential component. This therefore equates to a requirement to provide 20 spaces for the residential component.

The layout provides 30 spaces for the residential component.

#### Objective 4A-1 (1) – Solar and Daylight Access

Living rooms and private open spaces of at least 70% of apartments in a building receive a minimum of 2 hours direct sunlight between 9 am and 3 pm at mid-winter in the Sydney Metropolitan Area and in the Newcastle and Wollongong local government areas.

*Proposal:* 83% of apartments (or 15 of the 18 apartments) are to receive a minimum of 2 hours direct sunlight between 9am and 3pm at mid-winter.

#### Objective 4A-1 (3) – Solar and Daylight Access

A maximum of 15% of apartments in a building receive no direct sunlight between 9 am and 3 pm at mid-winter.

*Proposal:* 17% of apartments (or 3 of the 18 apartments) are to receive no direct sunlight between 9am and 3pm at mid-winter.

*Non-compliance:* Given the minor nature of the non-compliance (being 2%) and that the respective apartments will receive direct sunlight prior to 9am at mid-winter, it is considered that the proposal is acceptable in this regard.

#### Objective 4B-3 (1) – Natural Ventilation

At least 60% of apartments are naturally cross ventilated in the first nine storeys of the building. Apartments at ten storeys or greater are deemed to be cross ventilated only if any enclosure of the balconies at these levels allows adequate natural ventilation and cannot be fully enclosed.

*Proposal:* All apartments are naturally cross ventilated.

#### Objective 4B-3 (2) – Natural Ventilation

Overall depth of a cross-over or cross through apartment does not exceed 18m, measured glass line to glass line.

*Proposal:* The maximum depth of the cross-through apartments is approximately 15.2m.

#### Objective 4C-1 – Ceiling Heights

Minimum 2.7m ceiling height for habitable rooms (measured from finished floor level to finished ceiling level) for apartment and mixed use buildings heights.

*Proposal:* Each level has a ceiling height of 2.75m, which is provided to the floor area of all habitable rooms.

#### Objective 4D-1 (1) – Apartment Size and Layout

Apartments are required to have the following minimum internal areas:

- Studio - 35sqm
- 1 bedroom - 50sqm
- 2 bedroom - 70sqm
- 3 bedroom - 90sqm

The minimum internal areas include only one bathroom. Additional bathrooms increase the minimum internal area by 5sqm each.

A fourth bedroom and further additional bedrooms increase the minimum internal area by 12sqm each.

*Proposal:* It is noted that all apartments include a second bathroom (ensuite). All apartments exceed the respective minimum floor area requirements.

#### Objective 4D-1 (2) – Apartment Size and Layout

Every habitable room must have a window in an external wall with a total minimum glass area of not less than 10% of the floor area of the room. Daylight and air may not be borrowed from other rooms.

*Proposal:* Each habitable room includes a window with a total minimum glass area of not less than 10% of the floor area of the respective room.

#### Objective 4D-2 (1) – Apartment Size and Layout

*Proposal:* Not applicable to the proposal as all apartments are open plan layouts.

#### Objective 4D-2 (2) – Apartment Size and Layout

In open plan layouts (where the living, dining and kitchen are combined) the maximum habitable room depth is 8m from a window.

*Proposal:* All open plan layouts units have a maximum combined room depth of 8m.

#### Objective 4D-3 (1) – Apartment Size and Layout

Master bedrooms have a minimum area of 10sqm and other bedrooms 9sqm (excluding wardrobe space).

*Proposal:* All master bedrooms have a room area exceeding 10sqm, while all other bedrooms have a room area exceeding 9sqm.

#### Objective 4-3 (2) – Apartment Size and Layout

Bedrooms have a minimum dimension of 3m (excluding wardrobe space).

*Proposal:* All bedrooms have minimum room dimensions of 3m.

#### Objective 4D-3 (3) – Apartment Size and Layout

Living rooms or combined living / dining rooms have a minimum width of 3.6m for studio and 1 bedroom apartments, and 4m for 2 and 3 bedroom apartments.

*Proposal:* All living rooms have a minimum width of 4.5m.

#### Objective 4D-3 (4) – Apartment Size and Layout

The width of cross-over or cross-through apartments are at least 4m internally to avoid deep narrow apartment layouts.

*Proposal:* All cross-through apartments have a minimum width of 4.5m.

#### Objective 4E-1 (1) – Apartment Size and Layout

All apartments are required to have primary balconies with a minimum area and depth:

- Studio apartments – 4sqm (no minimum depth),
- 1 bedroom apartments – 8sqm and 2m,
- 2 bedroom apartments – 10sqm and 2m, and
- 3+ bedroom apartments – 12sqm and 2.4m.

*Proposal:* All units are serviced by a primary balcony which exceed the respective area and depth requirements.

#### Objective 4F-1 (1) – Common Circulation and Spaces

The maximum number of apartments off a circulation core on a single level is eight.

*Proposal:* The maximum number of apartments provided off a circulation core on a respective level is 4.

#### Objective: 4G-1 – Storage

In addition to storage in kitchens, bathrooms and bedrooms, the following storage is provided:

- Studio apartments – 4cum
- 1 bedroom – apartments 6cum
- 2 bedroom –apartments 8cum
- 3+ bedroom apartments – 10cum

At least 50% of the required storage is to be located within the apartment.

*Proposal:* All units are serviced by storage compartments which exceed the respective volume requirements, with at least 50% of the required storage located within the respective apartment.

## **Sydney Regional Environmental Plan No.20 - Hawkesbury Nepean River**

An assessment has been undertaken of the proposal against the relevant criteria within Sydney Regional Environmental Plan No. 20 - Hawkesbury-Nepean River (No. 2 - 1997) and the proposal is satisfactory in this regard.

## Local Environmental Plan 2010

Provision	Compliance
Clause 1.2 Aims of the plan	Complies
Clause 2.3 Permissibility	Complies - See discussion
Clause 2.3 Zone objectives	Complies
Clause 4.3 Height of buildings	Complies - See discussion
Clause 4.4 Floor Space Ratio	Complies - See discussion
Clause 5.21 Flood planning	Complies - See discussion
Clause 7.1 Earthworks	Complies
Clause 7.4 Sustainable development	Complies
Clause 7.6 Salinity	Complies
Clause 7.7 Servicing	Complies
Clause 7.8 Active street frontages	Complies
Clause 8.2 Sun access	N/A
Clause 8.3 Minimum building street frontage	Complies - See discussion
Clause 8.4 Design excellence	Complies - See discussion
Clause 8.5 Building separation	Complies

### Clause 2.3 Permissibility

The site is zoned 'B4 - Mixed Use' pursuant to the Penrith Local Environmental Plan 2010. The proposed development is defined as 'commercial premises' and a 'residential flat building', which are permitted in the zone.

### Clause 4.3 Height of buildings

A 'maximum building height' of 24m applies to the site. The proposal has an overall maximum building height of approximately 23.75m.

### Clause 4.4 Floor Space Ratio

While a 'maximum floor space ratio' of 2:1 applies to the site (pursuant to the Penrith Local Environmental Plan 2010) and the proposal provides a floor space ratio of approximately 2.09:1, as the proposal involves 21% of the gross floor area of the overall development to be used for 'affordable housing' purposes, pursuant to Clause 13 of State Environmental Planning Policy (Affordable Rental Housing) 2009, a 'maximum floor space ratio' of 2.21:1 applies to the proposed development.

### Clause 5.21 - Flood planning

Parts of the site are identified as flood affected by the 1% Annual Exceedance Probability overland flow flood event. Notwithstanding this, assessment of the proposal by Council's Development Engineer has found that the proposal will provide a negligible change in flood levels / affectation and that such is considered to be acceptable, and a similar negligible change in flood behaviour when having regard to climate change impacts. Additionally, given the low velocity / depth of the floodwater within the adjacent road reserve, such will not lead to any access / egress constraints. Furthermore, it is noted that the proposed habitable floor levels are located above the respective flood level for the site and provide an adequate freeboard.

### Clause 8.3 Minimum building street frontage

The site has street frontages of in excess of 30m to both Station and Reserve Streets, which exceeds the minimum required 30m street frontage requirement, for the 'B4 - Mixed Use' zone, within the 'Penrith City Centre'.

### Clause 8.4 Design excellence

The following comments by the Urban Design Review Panel are noted and comments responding to such made where necessary:

- Appropriate relationships with neighbouring buildings has been demonstrated.

- The 'canyon-like' interface with No. 114-116 Station Street, has been softened by podium-top landscaping, together with redesign of the northern elevation.
- An appropriate scale transition to the single storey eastern neighbour at No. 19 Reserve Street, has been achieved by the combined effects of clustered canopy landscaping which can be accommodated along the eastern boundary by a wider landscaped verge along the eastern side of the driveway (by redesign of the truck turning area), improved articulation of the building presents a three-to-four storey 'podium' and a pronounced 'supplementary' setback for upper storeys, and redesign of the eastern elevation provides a screened 'podium backdrop' which eliminates the previous bulky and over scaled appearance.
- Ground floor areas have been reconfigured to maximise visible activity along both street frontages.
- The frontage to Station Street has been redesigned as primarily an undercroft terrace which includes a ramp for disabled access from the street footpath at the north western corner.
- Commercial exposure of business areas (as well as more flexible tenancy layouts for commercial suites) has been improved by relocation of toilet facilities to the rear of tenancies.
- The residential lobby facing Station Street has been widened.
- Stair access to the residential entrance facing Reserve Street has been widened.
- Building forms and facades display more refined architectural compositions.
- In general, positive qualities of the 'streamlined' west facing facade have been applied to all elevations, and result in an architecturally unified building.
- At ground floor level, superior integration with upper storeys has been achieved by curved walls that enclose retail spaces and lobby entrances.
- Redesign has accentuated articulation of the building as a podium which contains a ground floor undercroft, and recessed penthouse levels.
- Podium and penthouse walls together with balcony balustrades have been realigned and redesigned to complement the 'signature' western elevation.
- In terms of scale and bulk, a visually recessive character for upper storeys has been achieved by the combined effects of 'supplementary' setbacks and facade finishes.
- At roof level, cores and services have been capped by a floating roof with a sinuous eave that complements lower storey forms.
- However, in order to optimise design quality, the proposed application of corrugated mini-orb cladding to upper storeys is questionable and flat panels with standing ribs could be more compatible with the overall range of proposed materials.

Response: The associated building elements have been altered to a 330mm wide flat cladding panel, addressing such.

- Communal open spaces have been redesigned in a manner which would promote safety and social interaction.
- Redesign of the rooftop space comprises a variety of 'outdoor rooms' which would allow concurrent occupancy by unrelated individuals and groups.
- Shelter and shade for redesigned rooftop areas are achieved by overhanging roofs and canopy landscaping in planters.
- Reconfigured residential floorplates accommodate superior quality apartments.
- More refined layouts avoid irregular configurations that were features of previous versions.
- Effective solar access would be achieved by at least 75% of proposed apartments.
- Natural cross ventilation would be available for 100% of apartments.
- Sun shading of northern and western elevations would be provided by a combination of overhangs and screens.
- Sustainability measures would be satisfied by the combined effects of design amendments to deep soil, apartment layouts, facades, and the roof top open space.

Given the above, along with the following key considerations, including in relation to satisfying associated provisions of Part E11 of the Penrith Development Control Plan 2014 for the City South / Mixed Use Precinct, it is considered that the proposal exhibits design excellence:

- Street setback and building alignments are contextually appropriate.
- Maximum applicable floorplate requirements are met.
- Maximum site coverage requirements are met.
- Contextually appropriate site landscaping is provided.
- The provision of active street frontages.
- The built form and material selection is appropriate.

- Accessibility requirements are met.
- The provision of all car parking is at basement levels.
- Suitable servicing is provided.
- Flexible layouts, which provide for future adaptable uses, are provided.
- Building sustainability principles are met.
- The provision of a layout and desired land uses that are specific for the area is achieved.

## **Section 4.15(1)(a)(ii) The provisions of any draft environmental planning instrument**

### **Draft State Environmental Planning Policy (Housing) 2021**

Draft State Environmental Planning Policy (Housing) 2021, proposes to facilitate the delivery of more diverse and affordable housing types within NSW, and consolidate five (5) existing housing related State Environmental Planning Policies, including State Environmental Planning Policy (Affordable Rental Housing) 2009.

An assessment has been undertaken and it is considered that the proposal is not inconsistent with any provisions of such.

Furthermore, it is noted that while this Policy has now commenced (on 26 November 2021), pursuant to 'savings and transitional provisions' outlined within Schedule 7, the former provisions continue to apply to a Development Application made, but not yet determined, on or before the commencement date. The subject application was made on 27 November 2020.

### **Draft State Environmental Planning Policy (Environment)**

Draft State Environmental Planning Policy (Environment), proposes to simplify the planning rules, in relation to a number of water catchments, waterways, urban bushland, and the Willandra Lakes World Heritage Property, and consolidate the following State Environmental Planning Policies:

- State Environmental Planning Policy No. 19 – Bushland in Urban Areas
- State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011
- State Environmental Planning Policy No. 50 – Canal Estate Development
- Greater Metropolitan Regional Environmental Plan No. 2 – Georges River Catchment
- Sydney Regional Environmental Plan No. 20 – Hawkesbury-Nepean River (No. 2 1997)
- Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005
- Willandra Lakes Regional Environmental Plan No. 1 – World Heritage Property

It is considered that the proposal is not inconsistent with the Explanation of Intended Effect for the Draft State Environmental Planning Policy (Environment).

### **Draft Remediation of Land State Environmental Planning Policy**

Draft Remediation of Land State Environmental Planning Policy, proposes to replace State Environmental Planning Policy No. 55 – Remediation of Land, by:

- Providing a state-wide planning framework for the remediation of land,
- Maintaining the objectives and reinforce those aspects of the existing framework that have worked well,
- Requiring planning authorities to consider the potential for land to be contaminated when determining development applications and rezoning land,
- Clearly listing the remediation works that require development consent, and
- Introducing certification and operational requirements for remediation works that can be undertaken without development consent.

It is considered that the proposal is not inconsistent with the Explanation of Intended Effect for the Draft Remediation of Land State Environmental Planning Policy.

## Section 4.15(1)(a)(iii) The provisions of any development control plan

### Development Control Plan 2014

Provision	Compliance
DCP Principles	Complies
C1 Site Planning and Design Principles	Complies
C2 Vegetation Management	Complies
C3 Water Management	Complies
C4 Land Management	Complies
C5 Waste Management	Complies
C6 Landscape Design	Complies
C7 Culture and Heritage	N/A
C8 Public Domain	Complies
C9 Advertising and Signage	N/A
C10 Transport, Access and Parking	Does not comply - see Appendix - Development Control Plan Compliance
C11 Subdivision	N/A
C12 Noise and Vibration	Complies
C13 Infrastructure and Services	Complies
D2.5 Residential Flat Buildings	Complies
E11 Penrith	Does not comply - see Appendix - Development Control Plan Compliance

## Section 4.15(1)(a)(iiia) The provisions of any planning agreement

There are no planning agreements which apply to the site or the proposed development.

## Section 4.15(1)(a)(iv) The provisions of the regulations

### Prescribed Conditions

The relevant prescribed conditions of the Regulations, such as the requirement for compliance with the Building Code of Australia, are recommended to be imposed as conditions of consent where applicable.

### Advertising and Notification

The application was advertised and notified, in accordance with the requirements of the Regulations and the Penrith City Council Community Engagement Strategy.

### Clause 50 - Design Verification

A Design Verification Statement prepared by a Registered Architect, Pavlo Doroch (Registration No. 9170), verifying that the design achieves compliance with the 'Design Quality Principles' of Schedule 1 of State Environmental Planning Policy No. 65, has accompanied the application.

### Clause 92 - Additional Matters

Consideration has been given to the *Development Assessment Guideline: An Adaptive Response to Flood Risk Management for Residential Development in the Penrith City Centre*, including in relation to Stage 1 of the Adaptive Management Framework. In this regard, it is noted that the proposal does not provide for an exceedance of the additional 4,050 dwellings permitted within the Penrith City Centre, as facilitated through Stage 1 of the framework.

### Clause 97 - Fulfillment of BASIX Commitments

A condition has been included within the recommended draft conditions requiring the fulfillment of the commitments made within the associated BASIX certificate.

## Section 4.15(1)(b) The likely impacts of the development

It is considered that the proposal does not provide any adverse environmental, social or economic impacts, as evident in the matters outlined in other sections of this report.

## Section 4.15(1)(c) The suitability of the site for the development

Assessment of the proposal has found the site to be suitable for the proposed development.

## Section 4.15(1)(d) Any Submissions

### Community Consultation

The application was advertised in a local newspaper, notified to adjacent property owners and residents, and publicly exhibited from 21 December 2020 until 1 February 2021, in accordance with the Penrith City Council Community Engagement Strategy. Two (2) submissions were received in response to this process, which raised the following matters.

- Concern that the proposal could impact upon the structural stability of adjacent buildings.

Response: Conditions have been included within the recommended conditions in relation to satisfying the relevant requirements of the associated Australian Standards and Building Code of Australia, to protect and support adjacent buildings from possible damage, to underpin adjacent buildings / structures where necessary, and the provision of Dilapidation Reports for the buildings at No. 114-116 Station Street, No. 234 Derby Street and No. 19 Reserve Street.

- Concern in relation to the certification of building works and responsibility of impacts upon adjacent buildings / properties.

Response: All associated building works will need to be supervised and certified by a suitably accredited Building Certifier (accredited by the Building Professionals Board). Conditions have been included within the recommended conditions in relation to the protection and physical support of adjacent buildings, and the provision of Dilapidation Reports for the buildings at No. 114-116 Station Street, No. 234 Derby Street and No. 19 Reserve Street.

### Referrals

The application was referred to the following stakeholders and their comments have formed part of the assessment:

Referral Body	Comments Received
Building Surveyor	No objections - subject to conditions
Development Engineer	No objections - subject to conditions
Environmental - Environmental management	No objections - subject to conditions
Environmental - Waterways	No objections - subject to conditions
Waste Services	No objections - subject to conditions
Traffic Engineer	No objection subject to conditions
Community Safety Officer	No objections - subject to conditions
Urban Design Review Panel	No objections

## Section 4.15(1)(e) The public interest

No issues have arisen during the assessment that would indicate the proposed development is not in the public interest.

## Section 94 - Developer Contributions Plans

The following Section 7.11 contributions are applicable to the proposal:

- Cultural Facilities - \$6,635
- District Open Space Facilities - \$54,548
- Local Open Space - \$19,731
- Penrith City Centre Commercial Floor Space - \$32,074
- Penrith City Centre Multiple Dwellings - \$182,970

Accordingly, respective conditions have been included within the recommended conditions requiring payment of such.

## **Conclusion**

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Having regard to the assessment of the proposal, the proposed development can be summarised as follows:

1. The subject site is zoned 'B4 - Mixed Use' pursuant to the Penrith Local Environmental Plan 2010. The proposed development is defined as 'commercial premises' and a 'residential flat building', which are permitted in the zone.
2. The proposed development is considered to meet the objectives of the 'B4 - Mixed Use' zone.
3. The proposal satisfactorily responds to key planning considerations, such as urban design, built form, residential amenity, servicing and car parking.
4. It is considered that the proposal will not provide for any significant adverse or unreasonable impacts on the neighbourhood.
5. Conditions have been included within the recommended conditions to respond to the matters raised within the submissions.

Based on the assessment of the proposal, notwithstanding the submissions received, the proposed development is considered to be acceptable, and accordingly it is recommended that the application be approved, subject to the recommended conditions.

## **Recommendation**

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1. That Development Application No. 20/0798, be approved subject to the following recommended conditions.
2. That all submitters be notified of the determination.

## General

### 1 [A001 - Approved plans table](#)

The development must be implemented substantially in accordance with the following approved plans and documents referenced in this consent, the application form, and any supporting information received with the application, except as varied by any conditions within this consent.

- Site Plan, Drawing No. 0401, Revision 04, prepared by Architecture Design Studio, dated 28 September 2021
- Lower Basement Floor Plan, Drawing No. 1101, Revision 05, prepared by Architecture Design Studio, dated 18 November 2021
- Upper Basement Floor Plan, Drawing No. 1102, Revision 05, prepared by Architecture Design Studio, dated 18 November 2021
- Ground Floor Plan, Drawing No. 1201, Revision 05, prepared by Architecture Design Studio, dated 18 November 2021
- First Floor Plan, Drawing No. 1301, Revision 04, prepared by Architecture Design Studio, dated 28 September 2021
- Second Floor Plan, Drawing No. 1302, Revision 04, prepared by Architecture Design Studio, dated 28 September 2021
- Third Floor Plan, Drawing No. 1303, Revision 04, prepared by Architecture Design Studio, dated 28 September 2021
- Fourth Floor Plan, Drawing No. 1304, Revision 04, prepared by Architecture Design Studio, dated 28 September 2021
- Fifth Floor Plan, Drawing No. 1305, Revision 04, prepared by Architecture Design Studio, dated 28 September
- Sixth Floor Plan, Drawing No. 1306, Revision 04, prepared by Architecture Design Studio, dated 28 September 2021
- Roof Plan, Drawing No. 1401, Revision 04, prepared by Architecture Design Studio, dated 28 September 2021
- North & South Elevations, Drawing No. 1501, Revision 04, prepared by Architecture Design Studio, dated 28 September 2021
- East & West Elevations, Drawing No. 1502, Revision 04, prepared by Architecture Design Studio, dated 28 September 2021
- Sections 01 & 02, Drawing No. 1601, Revision 04, prepared by Architecture Design Studio, dated 28 September 2021
- Section 03, Drawing No. 1602, Revision 05, prepared by Architecture Design Studio, dated 28 September 2021
- General Arrangement Section, Drawing No. 1603, Revision 02, prepared by Architecture Design Studio, dated 28 September 2021
- Accessible Unit Configuration, Drawing No. 3001, Revision 04, prepared by Architecture Design Studio, dated 28 September 2021
- Landscape Plan, Drawing No. 20-4238-L01, Revision 'C', prepared by Zenith Landscape Designs, dated 21 September 2021
- Landscape Plan, Drawing No. 20-4238-L02, Revision 'C', prepared by Zenith Landscape Designs, dated 16 September 2021
- Landscape Plan, Drawing No. 20-4238-L03, Revision 'C', prepared by Zenith Landscape Designs, dated 16 September 2021
- Stormwater Concept Plans, Project No. 200763, prepared by ACE Civil Stormwater Services

### 2 [A002 - LOT CONSOLIDATION](#)

**Prior to the issue of any Construction Certificate**, Lot 5 DP 112466, Lot 6 DP 1003862 & Lot 4 DP 112466, are to be consolidated.

Evidence of lot consolidation and plan registration with NSW Land Registry Services is to be provided to the Certifying Authority and Penrith City Council.

3 [A003 - Affordable Rental Housing restriction on title](#)

**Prior to the issue of any Occupation Certificate**, the Principal Certifying Authority is to be provided with copy of the registered Title noting:

- a restriction is registered against the title of the property, in accordance with Section 88E of the Conveyancing Act 1919, requiring that Apartment Nos. 01-01, 02-01, 03-01 & 04-01, must be used for the purposes of 'affordable housing' (as defined by State Environmental Planning Policy (Affordable Rental Housing) 2009, and
- that the respective apartments must be managed by a 'registered community housing provider' (as defined by the Housing Act 2001), for a minimum period of 10 years from the date of the issue of any **Occupation Certificate**. The name of the authority having the power to release, vary or modify the restriction referred to is to be Penrith City Council.
- Prior to the occupation of the respective apartments, details of the 'Registered Community Housing Provider' managing the affordable housing are to be provided to Penrith City Council.

**Advisory notes:**

(i) Under State Environmental Planning Policy (Affordable Rental Housing) 2009 a 'Registered Community Housing Provider' is defined as an entity that provides community housing.

(ii) State Environmental Planning Policy (Affordable Rental Housing) 2009 defines affordable housing as follows:

*Affordable housing means housing for very low income households, low income households or moderate income households, being such households as are prescribed by the regulations or as are provided for in an environmental planning instrument.*

(iii) Evidence that the respective apartments are being utilised for the purposes of affordable housing, in accordance with the above requirements, must be retained by the respective owner(s) and made available for Council inspection upon request.

4 [A008 - Works to BCA requirements \(Always apply to building works\)](#)

The work must be carried out in accordance with the requirements of the Building Code of Australia. If the work relates to a residential building and is valued in excess of \$20,000, then a contract of insurance for the residential development shall be in force in accordance with Part 6 of the Home Building Act 1989.

5 [A017 - Obtain Construction Certificate before commencement of works](#)

A **Construction Certificate** shall be obtained prior to commencement of any building works.

6 [A017 - OCCUPATION CERTIFICATE \(ALWAYS APPLY\)](#)

**The development shall not be used or occupied until an Occupation Certificate has been issued.**

7 [A041 Special \(Sydney Water Tap in\)](#)

A building plan approval must be obtained from Sydney Water Tap in to ensure that the approved development will not impact Sydney Water infrastructure.

A copy of the building plan approval receipt from Sydney Water Tap in must be obtained prior to works commencing.

Please refer to the web site [www.sydneywater.com.au](http://www.sydneywater.com.au) (plumbing, building & developing - Sydney Water Tap in), or telephone 13 20 92.

8 [A047 - Mail Box Requirements for New Residential Flat Buildings](#)

**Prior to the issue of a Construction Certificate**, compliance with AS 4253-2019 is to be demonstrated including address of Appendix A – Positioning and Numbering of Mailboxes.

9 [A048 - Design and Building Practitioners - Particulars for Regulated Designs Order 2021](#)

**Prior to the issue of a Construction Certificate**, evidence of compliance with the Design and Building Practitioners - Particulars for Regulated Designs Order 2021 is to be provided to the satisfaction of the Certifying Authority, for any excavation, shoring and anchoring works that traverse a property boundary. This includes evidence of a registered easement over a neighbouring property granting the right to install such works as required.

10 **A050 Special (Shoring & Dilapidation Report)**

For the purposes of Section 4.17(11) of the Act, it is a prescribed condition of this development consent that if the development involves an excavation that extends below the level of the base of the footings of a building, structure or work (including any structure or work within a road or rail corridor) on adjoining land, the person having the benefit of this development consent must, at the person's own expense:

- (a) protect and support the building, structure or work from possible damage from the excavation, and
- (b) where necessary, underpin the building, structure or work to prevent any such damage.

Further to the above and prior to the commencement of any excavation works, a dilapidation report is to be prepared and submitted to Council. The report is to record and detail the existing state of surrounding assets and structures, including those located on adjacent private property, at Nos. 114-116 Station Street, No. 234 Derby Street and No. 19 Reserve Street.

11 **A055 Special (adaptable apartments)**

Apartment Nos. 04-02 & 04-03 are to be constructed as adaptable apartments to meet the requirements for persons with a disability and in accordance with the stamped approved plans. The adaptable apartments shall each be allocated an accessible car parking space compliant with AS 2890.6, in accordance with the approved plans.

**The Construction Certificate application must be accompanied by certification from a suitably qualified and experienced professional**, confirming that the adaptable dwellings are capable of being modified, when required by the occupant, to comply with the Australian Housing Standard (AS 4299 2009).

A Compliance Certificate in relation to the above, shall be provided prior to the issue of an Occupation Certificate.

12 **A057 Special (BLANK)**

Apartment Nos. 01-03, 02-03 & 03-03 are to be constructed as livable apartments, to incorporate the Livable Housing Guideline's silver level universal design features.

The Construction Certificate application must be accompanied by certification from a suitably qualified and experienced professional, confirming that the livable apartments incorporate the Livable Housing Guideline's silver level universal design features.

A Compliance Certificate in relation to the above, shall be provided prior to the issue of an Occupation Certificate.

### 13 **A080 Special CPTED Requirements**

The following community safety and crime prevention through environmental design (CPTED) requirements are required to be implemented:

#### **(a) Lighting**

- All outdoor/public spaces throughout the development must be lit to the minimum Australian Standard of AS 1158. Lighting must be consistent in order to reduce the contrast between shadows and illuminated areas and must be designed in accordance with AS 4282 - Control of the obtrusive effects of outdoor lighting.

#### **(b) Basement Car Parking**

- A security system must be installed on any pedestrian and vehicle entry/exit points to the car park, including the lift and stairwell, to minimise opportunities for unauthorised access. A permeable roller shutter is recommended at the access/egress to the basement car park.
- Access to the loading dock (off Reserve Street) must also be restricted (i.e permeable roller shutter) to minimise unauthorised access.
- All areas of the car park must be well-lit, with consistent lighting to prevent shadowing or glare.
- Car park surfaces including walls and ceilings are to be light coloured with details included with the **Construction Certificate** application.

#### **(c) Building Security & Access Control**

- Intercom, code or card locks or similar must be installed for all entries to the building.
- Australian Standard 220 door and window locks must be installed in all dwellings and commercial premises.
- CCTV is to be provided to cover communal public space areas, including rear loading dock. Cameras must be of sufficient standard to be useful for police in the event of criminal investigations. Lighting must be provided to support cameras at night (alternatively infra-red cameras are recommended). Signage must be displayed to indicate that CCTV cameras are in use.
- Letterboxes must be positioned to be opened from within private open space only.
- Storage cages in the basement car park must be sturdy and vandal resistant.

#### **(d) Graffiti/Vandalism**

- Graffiti resistant coatings must be used to external surfaces where possible, including signage, furniture, retaining walls etc.
- Procedures must be in place to ensure the prompt removal and/or repair of graffiti or vandalism to the buildings, fencing, and common areas. This includes reporting incidents to police and/or relevant authorities.

#### **(e) Landscaping**

- All vegetation must be regularly pruned to ensure that sight lines are maintained.

### 14 **A082 - LIGHTING LOCATIONS**

Illumination is to be arranged in accordance with the requirements of Australian Standard 4282 - Control of the obtrusive effects of outdoor lighting, so as not to impact upon the amenity of the occupants of adjoining and nearby residential premises.

### 15 **A085 Special (cladding)**

The external walls of the building including attachments must comply with the relevant requirements of the National Construction Code (NCC). Prior to the issue of a Construction Certificate and Occupation Certificate, the Certifying Authority / Principal Certifying Authority must:

(a) Be satisfied that suitable evidence is provided to demonstrate that the products and systems proposed for use or used in the construction of external walls including finishes and cladding such as synthetic or aluminium composite panels comply with the relevant requirements of the NCC; and

(b) Ensure that the documentation relied upon in the approval processes include an appropriate level of detail to demonstrate compliance with the NCC as proposed and as built.

### 16 **A086 Special (balcony hose and tap)**

Prior to the issue of an Occupation Certificate, a hose and tap is to be provided on all balconies.

17 [A090 Special \(air conditioning / plant / utilities\)](#)

Any air conditioning units installed on individual apartment balconies are to be set back from the outer edge of the balcony and are not to be mounted on the wall above the balustrade level. All roof mounted plant, ducting or services infrastructure shall be setback so as to be screened from view. No approval is granted for the installation of ducting, conduit, stormwater drainage, plant machinery or services infrastructure on the external facades of the building.

18 [A094 Special \(Use of Commercial occupancies Not Approved\)](#)

Separate approval is required for the use of the Ground Floor commercial type occupancies, prior to the use / occupation of such.

19 [A097 Special \(commercial type occupancies\)](#)

The use of the commercial tenancies is to be limited to between 8:30am and 6pm, Mondays to Saturdays. The use of the commercial tenancies is to be conducted so as to avoid unreasonable noise and cause no interference to adjoining or nearby residences.

20 [A196 - Goods in buildings](#)

No garbage waste, dumped goods or bulky waste such as disused or broken furnishings are to be stored at the site (unless temporarily placed within the approved bulky waste collection area). All car parking spaces are to be used for vehicle parking at all times, and are not to be used for the storage of goods or unregistered / disused vehicles or the like.

## Heritage/Archaeological relics

21 [C003 - Uncovering relics](#)

If any archaeological relics are uncovered during the course of the works, no further work shall be undertaken until further directed by Penrith City Council or the NSW Heritage Office.

The applicant is advised that depending on the possible significance of the relics, an archaeological assessment and an excavation permit under the Heritage Act 1977 may be required before any further work can be recommenced in that area of the site.

## Environmental Matters

22 [D001 - Implement approved sediment& erosion control measures](#)

Erosion and sediment control measures shall be installed prior to the commencement of works on site. The erosion and sediment control measures are to be installed and maintained in accordance with the Department of Housing's "Managing Urban Stormwater: Soils and Construction" 2004.

The erosion and sediment control measures are to be maintained throughout the construction phase of the development until construction of the development, including all landscaping and hardstand areas, are completed.

These measures shall ensure that mud and soil from vehicular movements to and from the site does not occur during the construction of the development.

23 **D006 - No filling without prior approval (Use always, except for bulk earthworks/ major fill operations)**

No fill material shall be imported to the site until such time as a Validation Certificate (with a copy of any report forming the basis for the validation) for the fill material has been submitted to, considered and approved by Council.

The Validation Certificate shall:

- state the legal property description of the fill material source site,
- be prepared by an appropriately qualified person with consideration of all relevant guidelines (e.g. EPA, ANZECC, NH&MRC), standards, planning instruments and legislation,
- clearly indicate the legal property description of the fill material source site,
- provide details of the volume of fill material to be used in the filling operations,
- provide a classification of the fill material to be imported to the site in accordance with the Environment Protection Authority's "Environmental Guidelines: Assessment, Classification & Management of Non-Liquid Wastes" 1997, and
- (based on the fill classification) determine whether the fill material is suitable for its intended purpose and land use and whether the fill material will or will not pose an unacceptable risk to human health or the environment.

{Note: An appropriately qualified person is defined as "a person who, in the opinion of Council, has a demonstrated experience, or access to experience in hydrology, environmental chemistry, soil science, eco-toxicology, sampling and analytical procedures, risk evaluation and remediation technologies. In addition, the person will be required to have appropriate professional indemnity and public risk insurance."}.

If the Principal Certifying Authority or Penrith City Council is not satisfied that suitable fill materials have been used on the site, further site investigations or remediation works may be requested. In these circumstances the works shall be carried out prior to any further approved works.

24 **D009 - Covering of waste storage area**

All construction waste materials stored on-site are to be contained within a designated area such as a waste bay or bin to ensure that no waste materials are allowed to enter the stormwater system or neighbouring properties. The designated waste storage areas shall be fully enclosed when the site is unattended.

25 **D010 – Appropriate disposal of excavated or other waste**

All excavated material and other construction wastes generated as a result of construction of the development are to be disposed of at a lawful waste management facility. Where the disposal location or waste materials have not been identified in a waste management plan, details shall be provided to the Certifying Authority as part of the waste management documentation accompanying the Construction Certificate application.

All receipts and supporting documentation must be retained in order to verify lawful disposal of materials and are to be made available to Penrith City Council on request.

## 26 D013 - Approved noise level 1

Noise levels from the premises shall not exceed the relevant noise criteria detailed in the Acoustic Report prepared by Acoustic Noise & Vibration Solutions P/L and dated 20 November 2020 (Ref: 20202-234 Rev. 2). The recommendations provided in the Acoustic Report shall be implemented and incorporated into the design, construction and operation of the development. This includes (but is not limited to):

- operation hours of loading docks are restricted to 7am-10pm daily. Operation of the loading docks is not permitted outside of these hours;
- the loading dock is to be roofed in accordance with the recommendations provided in Section 8.0 of the approved Acoustic Report;
- 2.1 metre high fencing is to be constructed around the loading dock area at the western boundary (refer to Figure 6 of the Acoustic Report);
- compactors are to be enclosed and used only during the day.

Further acoustic assessment (by a suitably qualified acoustic consultant) of the loading dock areas and all mechanical plant and equipment is to occur in the final design stage and prior to the issue of any Construction Certificate. In this regard, further details on the loading dock and the type and location of all mechanical plant and equipment associated with the development is to be provided to Penrith City Council for approval. Suitable data and information (prepared by a suitably qualified acoustic consultant) on the noise impacts associated with the loading dock and plant and equipment is to be supplied to demonstrate compliance with the noise criteria established in the Acoustic Report prepared by Acoustic Noise & Vibration Solutions P/L and dated 20 November 2020 (Ref: 20202-234 Rev. 2).

Prior to the issue of an Occupation Certificate, a certificate is to be obtained from a suitably qualified acoustic consultant certifying that the building, including fencing and all associated mechanical plant and equipment, has been constructed to meet the noise criteria in accordance with the approved acoustic report. This certificate is to be submitted to the Principal Certifying Authority prior to the issue of an Occupation Certificate.

The provisions of the Protection of the Environment Operations Act 1997 apply to the development, in terms of regulating offensive noise.

## 27 D020 Special (vehicle wash bay)

All vehicle washing and steam cleaning shall be conducted in a wash bay approved, installed and connected to the sewer in accordance with Sydney Water's requirements.

Details of the vehicle wash bay including the Section 73 Certificate issued by Sydney Water for the discharge of trade waste from the site shall be submitted to the Principal Certifying Authority before the wash bay can be installed.

## 28 D Special BLANK

Only clean unpolluted water is to be discharged into Penrith City Council's stormwater drainage system.

## 29 D Special BLANK

Should any "unexpected finds" occur during site excavation works, including but not limited to, the identification/finding of contaminated soils, buried building materials, asbestos, odour and / or staining, works are to cease immediately and Penrith City Council is to be notified. Any such "unexpected finds" shall be addressed by an appropriately qualified environmental person/consultant.

All remediation works within the Penrith Local Government Area are Category 1 works under State Environmental Planning Policy No. 55 - Remediation of Land. Should any contamination be found during development works and should remediation works be required, development consent is to be sought from Penrith City Council before the remediation works commence.

{Note: For the purpose of this condition an appropriately qualified person is defined as "a person who, in the opinion of Council, has a demonstrated experience, or access to experience in hydrology, environmental chemistry, soil science, eco-toxicology, sampling and analytical procedures, risk evaluation and remediation technologies. In addition, the person will be required to have appropriate professional indemnity and public risk insurance."}

### 30 D Special BLANK

The following waste management requirements must be complied with and details of compliance demonstrated to Council prior to the issue of a Construction Certificate:

- All on-site waste collection infrastructure, doors and access points (waste collection room and bulky goods collection room) are to be locked/accessed through Council's Abloy Key System. System specifications are outlined in Section 3.5.5 of the 'Residential Flat Building Waste Management Guideline' document.
- All on-site waste collection infrastructure (waste collection room, bulky goods and commercial waste) is to provide wash facilities through the use of a centralised mixing valve and hose cock. Respective drainage and water proofing to be installed to support the use of hose facilities.
- The chute inlets on each residential level are to be located within cupboards (maximum depth of 150mm) and incorporate dual self-closing sealed doors, ventilation, waterproofing and permit accessible resident access.
- All on-site waste collection infrastructure (waste collection room, bulky goods and commercial waste) is to provide automatic lighting and mechanical ventilation, incorporate 180-degree outwards opening doors and provide unobstructed internal height clearances of 2.7m free from external services and utilities.
- The commercial waste collection room to be enclosed, walled and locked in accordance with Section 3.4.1 of the 'Industrial, Commercial and Mixed-Use Waste Management Guideline' document.
- A 2m wide unobstructed access pathway is required from the on-site collection infrastructure (waste collection and bulky goods collection rooms) to the rear of Council's standard waste collection vehicle.
- The linear track system is to be shifted 100mm to the south-west to permit a 1.8m wide unobstructed loading zone for the use of the linear track system.
- A boom gate or similar restricted access system is to be installed adjacent to the basement ramp to inhibit unauthorised vehicles parking on the loading bay. The device to be accessible through Council's Abloy key system and systems operations are to be outlined within an amended Waste Management Plan submitted to Council's Waste and Resource Recovery Department.
- Updated swept path models illustrating unobstructed access for Council's waste collection vehicle are to be provided with minimum unobstructed clearances demonstrated in accordance with Section 2.2.3 of the 'Residential Flat Building Waste Management Guideline' document.

### 31 D Special BLANK

Prior to the issue of an Occupation Certificate, the following is to be submitted to and approved by Penrith City Council:

- The developer is to enter into a formal agreement with Penrith City Council for the utilisation of Council's Waste Collection Service. This is to include Council being provided with indemnity against claims for loss and damage. By entering into an agreement with Council for waste collection, the development will be required to operate in full compliance with Penrith City Councils Waste Collection and Processing Contracts for Standard Waste Collection. The provision of Council's waste collection service will not commence until formalisation of the agreement.
- Councils Waste and Resource Recovery Department is to conduct a site inspection of the on-site infrastructure with Council's collection contractors. The inspection is to review the on-site waste collection infrastructure for the provision of a safe and efficient waste collection service in accordance with the stamped plans and Council's policy provisions.
- The assigned strata manager for the development and direct contact details are to be provided to Council's Waste and Resource Recovery Department.

## BCA Issues

### 32 E001 - BCA compliance

All aspects of the building design shall comply with the applicable performance requirements of the Building Code of Australia so as to achieve and maintain acceptable standards of structural sufficiency, safety (including fire safety), health and amenity for the on-going benefit of the community. Compliance with the performance requirements can only be achieved by:

(a) complying with the deemed to satisfy provisions, or

(b) formulating an alternative solution which:

- complies with the performance requirements, or
- is shown to be at least equivalent to the deemed to satisfy provision, or

(c) a combination of (a) and (b).

## Utility Services

### 33 G002 - Section 73 (not for

A Section 73 Compliance Certificate under the Sydney Water Act 1994 shall be obtained from Sydney Water. The application must be made through an authorised Water Servicing Coordinator. Please refer to “Your Business” section of Sydney Water’s website at [www.sydneywater.com.au](http://www.sydneywater.com.au) then the “e-developer” icon, or telephone 13 20 92.

The Section 73 Compliance Certificate must be submitted to the Principal Certifying Authority prior to the issue of an Occupation Certificate.

### 34 G004 - Integral Energy

Prior to the issue of a Construction Certificate, a written clearance is to be obtained from Endeavour Energy stating that electrical services have been made available to the development or that arrangements have been entered into for the provision of services to the development.

In the event that a pad mounted substation is necessary to service the development, Penrith City Council shall be consulted over the proposed location of the substation before the Construction Certificate for the development is issued as the location of the substation may impact on other services and building, driveway or landscape design already approved by Council.

### 35 G004A Special (electricity underground)

The provision of all electricity related infrastructure for the development is to be placed underground.

### 36 G006 -

**Prior to the issue of a Construction Certificate**, the Principal Certifying Authority shall be satisfied that telecommunications infrastructure may be installed to service the premises which complies with the following:

- The requirements of the Telecommunications Act 1997;
- For a fibre ready facility, the NBN Co’s standard specifications current at the time of installation; and
- For a line that is to connect a lot to telecommunications infrastructure external to the premises, the line shall be located underground.

Unless otherwise stipulated by telecommunications legislation at the time of construction, the development must be provided with all necessary pits and pipes, and conduits to accommodate the future connection of optic fibre technology telecommunications.

**Prior to the issue of an Occupation Certificate**, written certification from all relevant service providers that the telecommunications infrastructure is installed in accordance with the requirements above and the applicable legislation at the time of construction, must be submitted to the Principal Certifying Authority.

## Construction

37 **H001 - Stamped plans and erection of site notice**

Stamped plans, specifications, a copy of the development consent, the Construction Certificate and any other Certificates to be relied upon shall be available on site at all times during construction.

The following details are to be displayed in a maximum of 2 signs to be erected on the site:

- the name of the Principal Certifying Authority, their address and telephone number,
- the name of the person in charge of the work site and telephone number at which that person may be contacted during work hours,
- that unauthorised entry to the work site is prohibited,
- the designated waste storage area must be covered when the site is unattended, and
- all sediment and erosion control measures shall be fully maintained until completion of the construction phase.

Signage but no more than 2 signs stating the above details are to be erected:

- at the commencement of, and for the full length of the, construction works on site, and
- in a prominent position on the work site and in a manner that can be easily read by pedestrian traffic.

All construction signage is to be removed when the Occupation Certificate has been issued for the development.

38 **H002 - All forms of construction**

Prior to the commencement of construction works:

(a) Toilet facilities at or in the vicinity of the work site shall be provided at the rate of one toilet for every 20 persons or part of 20 persons employed at the site. Each toilet provided must be:

- a standard flushing toilet connected to a public sewer, or
- if that is not practicable, an accredited sewage management facility approved by Council, or
- alternatively, any other sewage management facility approved by Council.

(b) All excavations and backfilling associated with the erection or demolition of a building must be executed safely and in accordance with the appropriate professional standards. All excavations associated with the erection or demolition of a building must be properly guarded and protected to prevent them from being dangerous to life or property.

(c) If the work involved in the erection or demolition of a building is likely to cause pedestrian or vehicular traffic in a public place to be obstructed or rendered inconvenient, or involves the enclosure of a public place, a hoarding or fence must be erected between the work site and the public place:

- if necessary, an awning is to be erected, sufficient to prevent any substance from, or in connection with, the work falling into the public place,
- the work site must be kept lit between sunset and sunrise if it is likely to be hazardous to persons in the public place, and
- any such hoarding, fence or awning is to be removed when the work has been completed.

39 **H022 - Survey**

The building shall be set out by a registered surveyor. A Survey Certificate shall be undertaken and submitted to the Principal Certifying Authority immediately prior to the positioning of wall panels / bricks or block work.

Additionally, a Survey Certificate of the location of the building upon completion shall be undertaken and submitted to the Principal Certifying Authority, prior to the issue of any Occupation Certificate. The Survey Certificate is to show the boundaries of the allotment and the distances of the building from the boundaries, and is to certify that the building has been positioned in accordance with the approved plans.

#### 40 [H041 - Hours of work \(other devt\)](#)

Construction works that are carried out in accordance with an approved consent that involve the use of heavy vehicles, heavy machinery and other equipment likely to cause offence to adjoining properties shall be restricted to the following hours in accordance with the NSW Environment Protection Authority Noise Control Guidelines:

- Mondays to Fridays, 7am to 6pm
- Saturdays, 7am to 1pm if inaudible on neighbouring residential premises, otherwise 8am to 1pm
- No work is permitted on Sundays and Public Holidays.

Other construction works carried out inside a building/tenancy and that do not involve the use of equipment that emits noise are not restricted to the construction hours stated above.

The provisions of the Protection of the Environment Operations Act 1997 in regulating offensive noise also apply to all construction works.

#### 41 [H043 Special \(Dust\)](#)

Dust suppression techniques are to be employed during demolition and construction activities to reduce any potential nuisances to surrounding properties.

#### 42 [H060 Special \(BASIX commitments\)](#)

In accordance with Clause 97A (2) of the Environmental Planning & Assessment Regulation 2000, all commitments listed in the BASIX Certificate supporting the application (No. 1132998M\_03, dated 22 September 2021), are to be fulfilled.

## Engineering

#### 43 [K101 - Works at No Cost to Council](#)

All roadworks, stormwater drainage works, signage, line marking, associated civil works and dedications required to effect the consented development shall be undertaken by the applicant at no cost to Penrith City Council.

#### 44 [K201 - Infrastructure Bond](#)

An Infrastructure Restoration Bond is to be lodged with Penrith City Council for development involving works around Penrith City Council's Public Infrastructure Assets. The bond is to be lodged with Penrith City Council prior to commencement of any works on site or prior to the issue of any Construction Certificate, whichever occurs first. The bond and applicable fees are in accordance with Council's adopted Fees and Charges.

An application form together with an information sheet and conditions are available on Council's website.

Contact Penrith City Council's Asset Management Department on 4732 7777 or visit Penrith City Council's website for more information.

#### 45 [K202 - S138 Roads Act - Minor Works in the Public Road](#)

Prior to the issue of any Construction Certificate, a Section 138 Roads Act application, including payment of application and inspection fees together with any applicable bonds, shall be lodged with and approved by Penrith City Council (being the Roads Authority for any works required in a public road). These works may include but are not limited to the following:

- a) Vehicular crossings (including kerb reinstatement of redundant vehicular crossings)
- b) Concrete footpath along the Reserve Street frontage of the development site
- c) Road opening for utilities and stormwater (including stormwater connection to Penrith City Council roads and other Penrith City Council owned drainage)
- d) Road occupancy or road closures (including temporary construction work zones and tower crane operation)
- e) The placement of hoardings, structures, containers, waste skips, signs, etc in the road reserve
- f) Temporary construction access
- g) Temporary ground anchors (for basement construction)
- h) The removal of redundant driveways and kerb crossovers, and the required reinstatement of kerb along the frontage of the site.

All works shall be carried out in accordance with the Roads Act approval, the development consent, including the stamped approved plans, and Penrith City Council's specifications, guidelines and best engineering practice.

Contact Penrith City Council's Asset Management Department on 4732 7777 or visit Penrith City Council's website for more information.

#### Note:

- Where Penrith City Council is the Certifier for the development, the Roads Act approval for the above works may be issued concurrently with the Construction Certificate.
- All works associated with the Roads Act approval must be completed prior to the issue of any Occupation Certificate.
- On completion of any awning over the road reserve, a certificate from a practising structural engineer certifying the structural adequacy of the awning is to be submitted to Council before Council will inspect the works and issue its final approval under the Roads Act.

#### 46 [K203 - S138 Roads Act - Roadworks Requiring Approval of Civil Drawings](#)

Prior to the issue of any Construction Certificate, the Certifier shall ensure that a separate Section 138 Roads Act application, including payment of application and inspection fees, has been lodged with and approved by Penrith City Council (being the Roads Authority under the Roads Act) for provision of public domain works along the Station Street frontage in accordance with Penrith City Council's Penrith CBD Public Domain Technical Manual.

Engineering plans are to be prepared in accordance with the development consent, Penrith City Council's Design Guidelines for Engineering Works for Subdivisions and Developments, Engineering Construction Specification for Civil Works, Austroads Guidelines, and best engineering practice.

Contact Penrith City Council's Development Engineering Department on 4732 7777 to obtain a formal fee proposal prior to lodgement and visit Penrith City Council's website for more information.

#### Note:

- Where Penrith City Council is the Certifier for the development, the Roads Act approval for the above works may be issued concurrently with the Construction Certificate.
- All works associated with the Roads Act approval must be completed prior to the issue of any Occupation Certificate.

47 **K209 - Stormwater Concept Plan**

The stormwater management system shall be consistent with plans lodged for development approval, prepared by Civil and Stormwater Engineering Services Pty Ltd, project number 200763, revision D, dated 10/09/2021.

Prior to the issue of any Construction Certificate, the Certifier shall ensure that the stormwater management system has been designed in accordance with Penrith City Council's Stormwater Drainage Specification for Building Developments and Water Sensitive Urban Design (WSUD) Policy.

Engineering plans and supporting calculations for the stormwater management system are to be prepared by a suitably qualified person and shall accompany the application for a Construction Certificate.

48 **K211 - Stormwater Discharge - Basement Car Parks**

Prior to the issue of any Construction Certificate, the Certifier shall ensure that the stormwater drainage system for the basement car park has been designed in accordance with the requirements for pumped systems in AS 3500.3 Plumbing and Drainage – Stormwater Drainage.

49 **K213 - Flooding - Flood Report Recommendations**

Prior to the issue of any Construction Certificate, the Certifier shall ensure that the development is compatible with the recommendations of the Flood Report prepared by Alpha Engineering & Development, reference number A20163, revision E, dated 18/11/2021. This flood report shall also include a Flood Evacuation Management Plan for all events up to and including the PMF event. If Council is not the Certifier for the development then the revised flood report shall be submitted to Council prior to the issue of any Construction Certificate for review.

50 **K214 - Flooding - Floor Levels**

Prior to the issue of any Construction Certificate, the Certifier shall ensure that all habitable floor levels are in accordance with the stamped approved plans with a minimum floor level of RL 28.2m AHD (adopted flood level + 0.5m freeboard).

51 **K217 - Flooding - Flood Compatible Materials**

Prior to the issue of any Construction Certificate, the Certifier shall ensure that any structures below RL 28.2m AHD (adopted flood level + 0.5m freeboard) have been detailed with flood compatible building components in accordance with the publication 'Reducing the Vulnerability of Buildings to Flood Damage' produced by the Hawkesbury-Nepean Floodplain Management Steering Committee.

52 **K218 - Flooding - Structural Adequacy**

Prior to the issue of any Construction Certificate, the Certifier shall ensure that the structures can withstand the forces of floodwater, including debris and buoyancy, up to the 1% Annual Exceedance Probability event in accordance with the requirements of the Building Code of Australia (BCA).

53 **K219 - Flooding - Flood Proofing**

Prior to the issue of any Construction Certificate, the Certifier shall ensure that all electrical services associated with the approved building works are adequately flood proofed in accordance with Penrith City Council's Development Control Plan provisions relating to flood liable land. Flood sensitive equipment (including electric motors and switches) shall also be located above the adopted flood level of RL 27.7m AHD.

54 **K222 - Access, Car Parking and Manoeuvring - General**

Prior to the issue of any Construction Certificate, the Certifier shall ensure that vehicular access, circulation, manoeuvring, pedestrian and parking areas associated with the subject development are in accordance with Penrith City Council's Development Control Plan, AS 2890.1, AS 2890.2 and AS 2890.6.

55 [K224 - Construction Traffic Management Plan](#)

Prior to the commencement of any works on-site (including demolition works) or prior to the issue of any Construction Certificate, whichever occurs first, a Construction Traffic Management Plan (CTMP) shall be submitted to Penrith City Council's Asset Management Department for endorsement. The CTMP shall be prepared by a suitably qualified consultant with appropriate training and certification from Transport for NSW. The CTMP shall include details of any required road closures, work zones, loading zones and the like. Approval of the CTMP may require approval of the Local Traffic Committee. Please contact Council's Asset Management Department on 4732 7777 and refer to Council's website for a copy of the Temporary Road Reserve Occupancy Application Form.

56 [K225 - Performance Bond](#)

Prior to the issue of a Roads Act Approval, a Performance Bond is to be lodged with Penrith City Council for provision of public domain works along the Station Street frontage in accordance with Penrith City Council's Penrith CBD Public Domain Technical Manual.

The value of the bond shall be determined in accordance with Penrith City Council's adopted Fees and Charges.

Note:

- Contact Penrith City Council's Development Engineering Department on 4732 7777 for further information relating to bond requirements.

57 [K226 - Basement Geotechnical Testing](#)

Prior to the issue of any Construction Certificate, a geotechnical investigation report and strategy shall be submitted to the Certifier to ensure the stability of any adjoining Council owned infrastructure and surrounding developments. The technical direction GTD 2012/001 prepared by Transport for NSW can be used as a guide for preparing the geotechnical investigation report and strategy.

58 [K228 - Dilapidation Report](#)

The developer shall undertake a dilapidation report for all surrounding buildings and Council owned infrastructure that confirms that no damage occurs due to the excavations associated with the development. If Council is not the Certifier for the development, then the dilapidation report shall be submitted to Council prior to the issue of any Construction Certificate, and then updated and submitted prior to the issue of any Occupation Certificate, confirming no damage has occurred.

59 [K301 - Sediment & Erosion Control](#)

Prior to commencement of works sediment and erosion control measures shall be installed in accordance with the approved Construction Certificate and to ensure compliance with the Protection of the Environment Operations Act 1997.

The erosion and sediment control measures shall remain in place and be maintained until all disturbed areas have been rehabilitated and stabilised.

60 [K401 - Flooding - Surveyor Verification of Floor Levels](#)

A certificate by a registered surveyor verifying that all habitable floor levels are at or above RL 28.2m AHD (adopted flood level + 0.5m freeboard) shall be submitted upon completion of the building to that level. No further construction of the building is to be carried out until approval to proceed is issued by the Certifier.

61 [K405 - Turf to Verge](#)

Upon completion of all works in the road reserve, all verge areas fronting and within the development are to be turfed. The turf shall extend from the back of kerb to the property boundary, with the exception of concrete footpaths, service lids or other infrastructure which is not to be turfed over. Turf laid up to concrete footpaths, service lids or other infrastructure shall finish flush with the edge.

62 [K406 - Underground Services](#)

All existing (aerial) and proposed services for the development, including those across the frontage of the development are to be located or relocated underground in accordance with the relevant authority's regulations and standards.

63 **K501 - Penrith City Council Clearance - Roads Act / Local Government Act**

Prior to the issue of any Occupation Certificate, the Principal Certifier shall ensure that all works associated with all Section 138 Roads Act approvals have been inspected and signed off by Penrith City Council.

64 **K502 - Works as executed – General and Compliance Documentation**

Prior to the issue of an Occupation Certificate, works-as-executed drawings, final operation and maintenance management plans and any other compliance documentation shall be submitted to the Principal Certifying Authority in accordance with Penrith City Council's Engineering Construction Specification for Civil Works, WSUD Technical Guidelines and Stormwater Drainage Specification for Building Developments.

An original set of works-as-executed drawings and copies of the final operation and maintenance management plans and compliance documentation shall also be submitted to Penrith City Council with notification of the issue of the Occupation Certificate where Council is not the Principal Certifying Authority.

65 **K503 - Stormwater Compliance**

Prior to the issue of an Occupation Certificate, the Principal Certifying Authority shall ensure that the stormwater management system (including water sensitive urban design measures):

- Has been satisfactorily completed in accordance with the approved Construction Certificate and the requirements of this consent.
- Satisfies the design intent with regard to any construction variations to the approved design.
- That any remedial works required to be undertaken have been satisfactorily completed.

Details of the approved and constructed system/s shall be provided as part of the works-as-executed drawings.

66 **K504 - Restriction as to User and Positive Covenant**

Prior to the issue of an Occupation Certificate, a restriction as to user and positive covenant relating to the stormwater management systems (including water sensitive urban design measures) shall be registered on the title of the property. The restriction as to user and positive covenant shall be in Penrith City Council's standard wording as detailed in Penrith City Council's Stormwater Drainage Specification for Building Developments - Appendix F.

67 **K508 - Splay Corner**

Prior to the issue of any Occupation Certificate, a 4m x 4m splay corner at the intersection of Station and Reserve Streets, is to be dedicated as public road to Penrith City Council on a plan of subdivision registered with Land Registry Services (LRS). The dedication of public road and subsequent registration shall be at no cost to Penrith City Council.

68 **K515 - Maintenance Bond**

Prior to the issue of any Occupation Certificate, a Maintenance Bond is to be lodged with Penrith City Council for provision of public domain works along the Station Street frontage, in accordance with Penrith City Council's Penrith CBD Public Domain Technical Manual.

The value of the bond shall be determined in accordance with Penrith City Council's adopted Fees and Charges.

Note:

- Contact Penrith City Council's Development Engineering Department on 4732 7777 for further information relating to bond requirements.

69 **K601 - Stormwater Management System Operation and Maintenance**

The stormwater management system shall continue to be operated and maintained in perpetuity for the life of the development in accordance with the final operation and maintenance management plan.

Regular inspection records are required to be maintained and made available to Penrith City Council on request. All necessary improvements are required to be made immediately upon awareness of any deficiencies in the stormwater management systems.

70 **K Special (BLANK)**

Prior to the issue of any Occupation Certificate, all areas designated on the plans for waste truck on-site manoeuvring and turning, are to be separated and made non-accessible at all times by residents, visitors, pedestrians and members of the public. This must be accompanied by both internal and external signage stating that the area is solely for waste collection vehicles and that "No Pedestrian Access" is permitted. Details of such are to be approved by Council prior to implementation and installed at no cost to Council.

71 **K Special (BLANK)**

Prior to the issue of any Occupation Certificate, pedestrian safety in the proposed on-site waste truck manoeuvring area is to be supported by the inclusion of:

- A flashing light system which lights up as a vehicle is exiting the loading dock to warn oncoming pedestrians.
- Dynamic warning signage for pedestrians passing the driveway stating; "caution vehicle exiting", which would light up as a vehicle exits the loading dock.

This is to be approved by Council prior to implementation and installed at no cost to Council.

72 **K Special (BLANK)**

The proposed waste vehicle manoeuvring area requires hardstand area in its entirety. All proposed waste truck on-site manoeuvring / turning areas, are to be constructed as a hardstand, sealed concrete surface.

73 **K Special (BLANK)**

All car parking and manoeuvring must be in accordance with AS 2890.1-2004, AS 2890.6-2009 and Council's requirements.

74 **K Special (BLANK)**

All car spaces are to be sealed, line marked and dedicated for the parking of vehicles only and not to be used for storage of materials, products, waste materials, etc.

75 **K Special (BLANK)**

Subleasing of car parking spaces is not permitted by this consent.

76 **K Special (BLANK)**

The required sight lines around the driveway entrances are not to be compromised by landscaping, fencing or signage.

77 **K Special (BLANK)**

All vehicles are to enter/exit the site in a forward direction.

## Landscaping

78 **L001 - General**

All landscape works are to be installed by a suitably qualified and experienced landscape professional, in accordance with the stamped approved plans. Landscaping shall thereafter be maintained in accordance with the approved plans, in a healthy state, and in perpetuity. If any of the vegetation comprising that landscaping dies or is removed, it is to be replaced with vegetation of the same species and, to the greatest extent practicable, the same maturity as the vegetation which died or was removed. Any such replacement planting must occur within 6 months of the former vegetation dying or being removed, or within the next relevant seasonal cycle.

79 **L003 - Landscaping Reports requirement**

Upon completion of the landscape works associated with the development and prior to the issue of an Occupation Certificate for the development, an Implementation Report must be submitted to the Principal Certifying Authority attesting to the satisfactory completion of the landscaping works for the development. The report is to be prepared by a suitably qualified and experienced landscape professional. An Occupation Certificate should not be issued until such time as a satisfactory Implementation Report has been received. If Penrith City Council is not the Principal Certifying Authority, a copy of the satisfactory Implementation Report is to be submitted to Council together with the Occupation Certificate for the development.

On the first anniversary of the date of the Occupation Certificate issued for the development, a Landscape Maintenance Report is to be submitted to Penrith City Council certifying that the landscape works are still in accordance with the development consent and the plant material is alive and thriving. The report is to be prepared by a suitably qualified and experienced landscape professional.

80 **L006 - Aust Standard**

All landscape works are to meet industry best practice and the following relevant Australian Standards:

- AS 4419 Soils for Landscaping and Garden Use,
- AS 4454 Composts, Soil Conditioners and Mulches, and
- AS 4373 Pruning of Amenity Trees.

81 **L Special (Hose and Tap)**

Prior to the issue of an Occupation Certificate, a hose and tap must be installed in the setback area to Station Street and within the south-eastern setback area.

## Development Contributions

82 **N001a - Section 7.11 contribution (apply separate condition for each Contribution Plan)**

This condition is imposed in accordance with Penrith City Council's Section 7.11 Contributions Plan for Cultural Facilities. Based on the current rates detailed in the accompanying schedule attached to this Notice, **\$6,635 is to be paid to Council prior to a Construction Certificate being issued for this development** (the rates are subject to quarterly reviews). If not paid within the current quarterly period, this contribution will be reviewed at the time of payment in accordance with the adopted Section 7.11 Contributions Plan. The projected rates of this contribution amount are listed in Council's Fees and Charges Schedule.

Council should be contacted prior to payment to ascertain the rate for the current quarterly period. The Section 7.11 invoice accompanying this consent should accompany the contribution payment. The Section 7.11 Contributions Plan for Cultural Facilities may be inspected at Council's Civic Centre, 601 High Street, Penrith.

**Note:** The timing of contributions payable may be otherwise affected in accordance with Planning Circular PS20-003 dated 3 July 2020 and the associated NSW Government Ministerial Direction - Infrastructure Contributions.

83 **N001b - Section 7.11 contribution (apply separate condition for each Contribution Plan)**

This condition is imposed in accordance with Penrith City Council's Section 7.11 Contributions Plan for District Open Space. Based on the current rates detailed in the accompanying schedule attached to this Notice, **\$54,548 is to be paid to Council prior to a Construction Certificate being issued for this development** (the rates are subject to quarterly reviews). If not paid within the current quarterly period, this contribution will be reviewed at the time of payment in accordance with the adopted Section 7.11 Contributions Plan. The projected rates of this contribution amount are listed in Council's Fees and Charges Schedule.

Council should be contacted prior to payment to ascertain the rate for the current quarterly period. The Section 7.11 invoice accompanying this consent should accompany the contribution payment. The Section 7.11 Contributions Plan for District Open Space may be inspected at Council's Civic Centre, 601 High Street, Penrith.

**Note:** The timing of contributions payable may be otherwise affected in accordance with Planning Circular PS20-003 dated 3 July 2020 and the associated NSW Government Ministerial Direction - Infrastructure Contributions.

84 **N001c - Section 7.11 contribution (apply separate condition for each Contribution Plan)**

This condition is imposed in accordance with Penrith City Council's Section 7.11 Contributions Plan for Local Open Space. Based on the current rates detailed in the accompanying schedule attached to this Notice, **\$19,731 is to be paid to Council prior to a Construction Certificate being issued for this development** (the rates are subject to quarterly reviews). If not paid within the current quarterly period, this contribution will be reviewed at the time of payment in accordance with the adopted Section 7.11 Contributions Plan. The projected rates of this contribution amount are listed in Council's Fees and Charges Schedule.

Council should be contacted prior to payment to ascertain the rate for the current quarterly period. The Section 7.11 invoice accompanying this consent should accompany the contribution payment. The Section 7.11 Contributions Plan for Local Open Space may be inspected at Council's Civic Centre, 601 High Street, Penrith.

**Note:** The timing of contributions payable may be otherwise affected in accordance with Planning Circular PS20-003 dated 3 July 2020 and the associated NSW Government Ministerial Direction - Infrastructure Contributions.

85 **N010 Special (Penrith City Centre Civic Improvement Plan for Commercial Office)**

This condition is imposed in accordance with the Penrith City Centre Civic Improvement Plan (Commercial Floor Space). Based on the current rates detailed in the accompanying schedule attached to this Notice, **\$32,074 is to be paid to Council prior to a Construction Certificate being issued for this development** (the rates are subject to quarterly reviews). If not paid within the current quarterly period, this contribution will be reviewed at the time of payment in accordance with the adopted Section 7.11 Contributions Plan. The projected rates of this contribution amount are listed in Council's Fees and Charges Schedule.

Council should be contacted prior to payment to ascertain the rate for the current quarterly period. The Section 7.11 invoice accompanying this consent should accompany the contribution payment. The Penrith City Centre Civic Improvement Plan may be inspected at Council's Civic Centre, 601 High Street, Penrith.

**Note:** The timing of contributions payable may be otherwise affected in accordance with Planning Circular PS20-003 dated 3 July 2020 and the associated NSW Government Ministerial Direction - Infrastructure Contributions.

86 **N011 Special (Penrith City Centre Civic Improvement Plan for Multiple Dwellings)**

This condition is imposed in accordance with the Penrith City Centre Civic Improvement Plan (Multiple Dwellings). Based on the current rates detailed in the accompanying schedule attached to this Notice, **\$182,970 is to be paid to Council prior to a Construction Certificate being issued for this development** (the rates are subject to quarterly reviews). If not paid within the current quarterly period, this contribution will be reviewed at the time of payment in accordance with the adopted Section 7.11 Contributions Plan. The projected rates of this contribution amount are listed in Council's Fees and Charges Schedule.

Council should be contacted prior to payment to ascertain the rate for the current quarterly period. The Section 7.11 invoice accompanying this consent should accompany the contribution payment. The Penrith City Centre Civic Improvement Plan may be inspected at Council's Civic Centre, 601 High Street, Penrith.

**Note:** The timing of contributions payable may be otherwise affected in accordance with Planning Circular PS20-003 dated 3 July 2020 and the associated NSW Government Ministerial Direction - Infrastructure Contributions.

## Certification

87 **Q001 - Notice of Commencement & Appointment of PCA**

Prior to the commencement of any earthworks or construction works on site, the proponent is to:

- (a) employ a Principal Certifier to oversee that the said works carried out on the site are in accordance with the development consent and related Construction Certificate issued for the approved development, and with the relevant provisions of the Environmental Planning and Assessment Act and accompanying Regulation, and
- (b) submit a Notice of Commencement to Penrith City Council.

The Principal Certifier shall submit to Council an "Appointment of Principal Certifier" in accordance with Section 81A of the Environmental Planning and Assessment Act 1979.

Information to accompany the Notice of Commencement

Two (2) days before any earthworks or construction/demolition works are to commence on site (including the clearing site vegetation), the proponent shall submit a "Notice of Commencement" to Council in accordance with Section 81A of the Environmental Planning and Assessment Act 1979.

88 **Q006 - Occupation Certificate (Class 2 - 9)**

An Occupation Certificate is to be obtained from the Principal Certifying Authority on completion of all works and prior to the occupation of the building and commencement of the approved use. The Occupation Certificate shall not be issued if any conditions of this consent, but not the conditions relating to the operation of the development, are outstanding, and/or if the development does not comply with the provisions of the Environmental Planning and Assessment Act and Regulation.

Before the Occupation Certificate can be issued for the development, Fire Safety Certificates issued for the building are to be submitted to Penrith City Council and the New South Wales Fire Brigades.

A copy of the Occupation Certificate and all necessary documentation supporting the issue of that Certificate shall be submitted to Penrith City Council, if Council is not the Principal Certifying Authority.

# Appendix - Development Control Plan Compliance

## Development Control Plan 2014

### Part C - City-wide Controls

#### C10 Transport Access and Parking

The proposal involves the provision of a total of 32 car parking spaces within the 2 basement levels, comprising of 2 commercial spaces, 26 residential spaces and 4 residential visitor spaces, which satisfies the respective minimum space requirements.

In accordance with Table C10.2, for development within the Penrith City Centre, a maximum of 60% of the total number of commercial parking spaces required by a development are to be provided on-site, with the balance of the total required number of car spaces then being subject to a car parking contribution under the Penrith City Centre Civic Improvement Plan.

However, the proposal, which requires 1.65 commercial parking spaces, provides 2 commercial spaces on-site. Given the overall scale and limited floor space of the commercial component, and that such includes 2 separate tenancies, it is considered that the provision of the 2 spaces on-site is a more practical arrangement and is supported in this instance.

### E11 Penrith

The following key matters are noted in relation to the proposal:

- The site is located within the City South / Mixed Use Precinct. The proposal is considered to be consistent with the relevant intended distinct characteristics for the precinct, such as providing a high density residential / mixed use development with basement car parking and active street frontages, outlined within Part 11.1.3.
- The street setbacks to both Station and Reserve Streets are consistent with the building street alignment requirements for the site, being street setbacks of between 2m and 3m, as outlined within Part 11.2.2.
- The overall floorplate is consistent with the maximum floorplate applicable to the zone and the development type, being 750sqm, as outlined within Part 11.2.4.
- Elements of the building depth extend up to approximately 22m and exceed the maximum applicable to the zone and the development type, being of 18m. Notwithstanding this, it is considered given that the site is located on a street corner with street frontages of similar lengths and due to the overall layout of the development, that the proposal is suitable in this regard and from an overall urban design perspective. Accordingly the proposal is considered to be satisfactory in relation to Part 11.2.4.
- The overall layout provides for compliance with associated (side / rear) building setbacks for the residential component, with the exception of a small element towards the southern corner of the site. This non-compliance has been considered and found to be satisfactory, as pursuant to the associated Design Criteria of the Apartment Design Guide, and accordingly the proposal is considered to be satisfactory in relation to Part 11.2.5.
- The overall layout is flexible and provides for future adaptable uses, with a Ground Floor ceiling height of 3.9m, separate service areas, separate and demarcated building access points, provision for security access controls (including within the car parking area and to the service / loading dock area), safe pedestrian access to the site and Ground Floor street frontages which provide for active uses, with perimeter blank walls limited to an area abutting an existing blank wall on an adjoining site. Accordingly the proposal is compliant with the requirements of Part 11.2.6.
- A Maximum Site Coverage of 100% is provided for within the City South / Mixed Use Precinct, in accordance with Part 11.2.7. It is noted that the overall layout provides a site coverage of approximately 80%.
- The overall layout includes landscaping around the perimeter of the site, which is relatively low in maintenance and provides for suitable interfaces with adjoining public and residential uses, and accordingly the proposal is considered to satisfy the relevant requirements of Part 11.2.8.
- The proposal includes planting at all above ground floor levels, including the Roof Top Level. The plantings include low maintenance plantings and overall provides for compliance with the relevant requirements of Part 11.2.9.
- The proposal provides for active street frontages at the Ground Floor, and includes entrances to commercial type premises and glazed shop front type elevations, which

provides for compliance with the relevant requirements of Part 11.3.2.

- It is considered that the overall design, including built form, layout and materials, has given careful consideration to existing adjoining developments, through setbacks, landscaping, building articulation, material variations and the configuration of the rooftop area, and accordingly the proposal satisfies the relevant requirements of Part 11.3.6.
- The application was accompanied by an Access Report, confirming that the layout provides a continuous accessible path of travel from the pedestrian footpath to all common areas (and therefore each apartment), which provides for compliance with the requirements of Part 11.4.1.
- All car parking is provided within the basement levels, which provides for compliance with the requirements of Part 11.4.2.
- The layout provides servicing or the provision for possible required servicing, in accordance with relevant requirements of Part 11.4.3.
- It is considered that the building facades will not provide glare that causes discomfort or threatens safety of pedestrians or drivers, and overall materials are of low reflectivity. Accordingly, it is considered that the proposal is consistent with the requirements of Part 11.5.1.
- The overall layout is flexible and provides for future adaptable uses, as well as being consistent with safety and crime prevention principles. Accordingly, it is considered that the proposal satisfies the relevant requirements of Part 11.5.2.
- The proposal includes the use of a variety of materials with low embodied energy properties and is considered to satisfy the relevant requirements of Part 11.5.3.
- The layout provides a mix of 2 and 3 bedroom apartments, along with an adaptable apartment, livable apartments and affordable apartments. However, the layout does not include any 1 bedroom apartments and is therefore inconsistent with the requirements of Part 11.6.1, whereby between 10% and 25% of all apartments should be either bed-sitter (studio) type or 1 bedroom apartments. Notwithstanding this, given the overall scale of the development and the overall variety of apartment types provided, it is considered that the proposal is satisfactory in this regard.
- The site is located within 'Area A' of the City South / Mixed Use Precinct. The overall layout includes 2 ground floor commercial type tenancies and 5 levels of residential apartments above, which is consistent with the desired land uses that are specific for the area. Moreover, the proposal provides active frontages to both Station and Reserve Streets, compliant street / front building setbacks, and a building treatment to the street corner which is distinctive. Accordingly, it is considered that the proposal satisfies the relevant requirements of Part 11.7.1.3.

# 118-120 STATION STREET, PENRITH PROPOSED MIXED USE DEVELOPMENT

## STORMWATER CONCEPT PLANS



LOCALITY PLAN  
N.T.S

### DRAWING INDEX

Drawing No.	DESCRIPTION
000	COVER SHEET PLAN
101	STORMWATER CONCEPT PLAN BASEMENT LEVEL 2 SHEET 1 OF 2
102	STORMWATER CONCEPT PLAN BASEMENT LEVEL 2 SHEET 2 OF 2
103	STORMWATER CONCEPT PLAN BASEMENT LEVEL 1
104	STORMWATER CONCEPT PLAN
105	WSUD CATCHMENT PLAN, MUSIC MODEL, RESULTS & NODE WATER BALANCE
106	RWT & WSUD DETAILS
107	MISCELLANEOUS DETAILS SHEET

NOT FOR CONSTRUCTION

Issue	Description	Date	Designed	Engineer	Checked
C	COUNCIL COMMENTS	18/03/2021	AGN	JSF	
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abn: 90 616 216 196

Client  
**Mr. David Reeve**  
Council  
**Penrith Council**

Scale

Certification By:

*Anthony Hasham*  
Anthony Hasham

**ACE**  
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Project

**118-120 STATION STREET, PENRITH  
PROPOSED MIXED USE DEVELOPMENT  
STORMWATER CONCEPT PLANS  
DEVELOPMENT APPLICATION**

Drawing Title

**COVER SHEET PLAN**

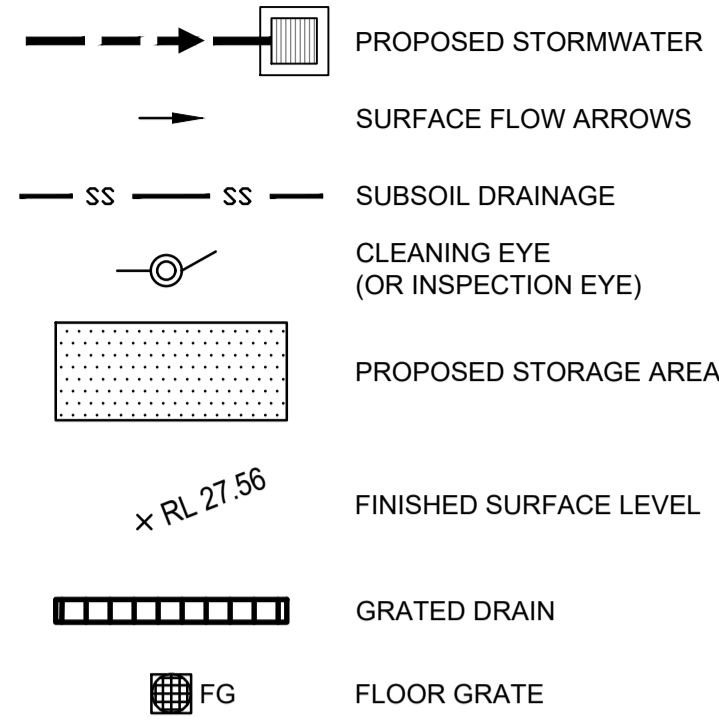
Scale  
N.T.S.

Project No.  
200763

Dwg. No.  
000

Issue  
C

**LEGEND**



**STANDARD PUMP OUT DESIGN NOTES**

- 1 - THE PUMP SHALL BE DESIGN TO BE OPERATED IN THE FOLLOWING MANNER:  
 1 - THE PUMP SHALL BE PROGRAMMED TO WORK ALTERNATELY TO ALLOW BOTH PUMPS TO HAVE AN EQUAL OPERATION LOAD AND PUMP LIFE.  
 2 - A FLOAT SHALL BE PROVIDED TO ENSURE OF THE MINIMUM REQUIRED WATER LEVEL IS MAINTAINED WITHIN THE SUMP AREA OF THE BELOW GROUND TANK. IN THIS REGARD THIS FLOAT WILL FUNCTION AS AN OFF SWITCH FOR THE PUMPS AT THE MINIMUM WATER LEVEL. THE SAME FLOAT SHALL BE SET TO TURN ONE OF THE PUMPS ON UPON THE WATER LEVEL IN THE TANK RISING TO APPROXIMATELY 300mm ABOVE THE MINIMUM WATER LEVEL. THE PUMP SHALL OPERATE UNTIL THE TANK IS DRAINED TO THE MINIMUM WATER LEVEL.  
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 4 - AN ALARM SYSTEM SHALL BE PROVIDE WITH A FLASHING STROBE LIGHT AND A PUMP FAILURE WARNING SIGN WHICH ARE TO BE LOCATED AT THE DRIVEWAY ENTRANCE TO THE BASEMENT LEVEL THE ALARM SYSTEM SHALL BE PROVIDED WITH A BATTERY BACK-UP IN CASE OF POWER FAILURE.  
 5 - A CONFINED SPACE DANGER SIGN SHALL BE PROVIDED AT ALL ACCESS POINT TO THE PUMP-OUT STORAGE TANK IN ACCORDANCE WITH THE UPPER PARRAMATA RIVER CATCHMENT TRUST OSD HANDBOOK.



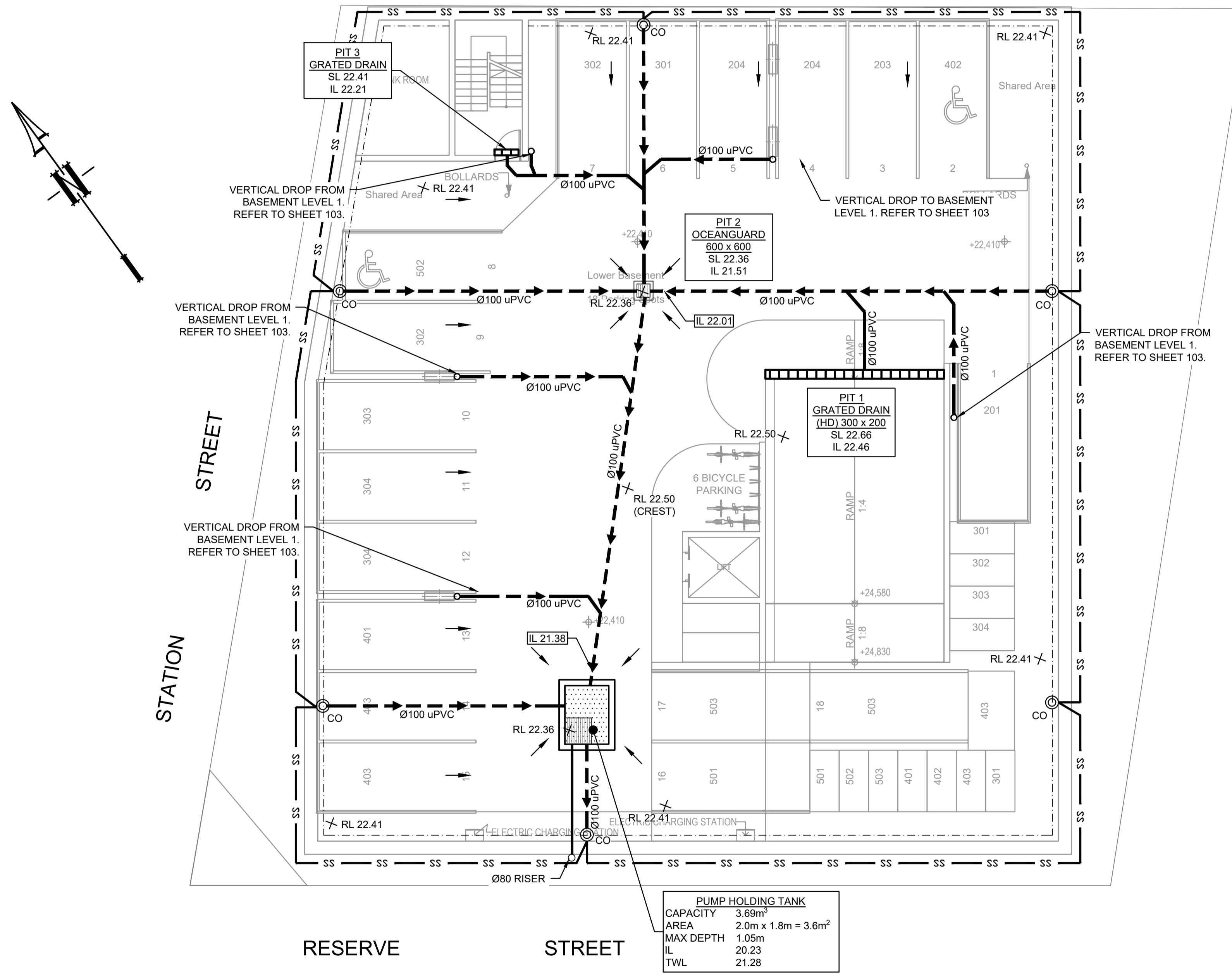
**BASEMENT PUMP OUT FAILURE WARNING SIGN**

SIGN SHALL BE PLACED IN A CLEAR AND VISIBLE LOCATION WHERE VEHICLES ENTER THE BASEMENT  
 COLOURS:  
 "WARNING" = RED  
 BORDER AND OTHER LETTERING = BLACK



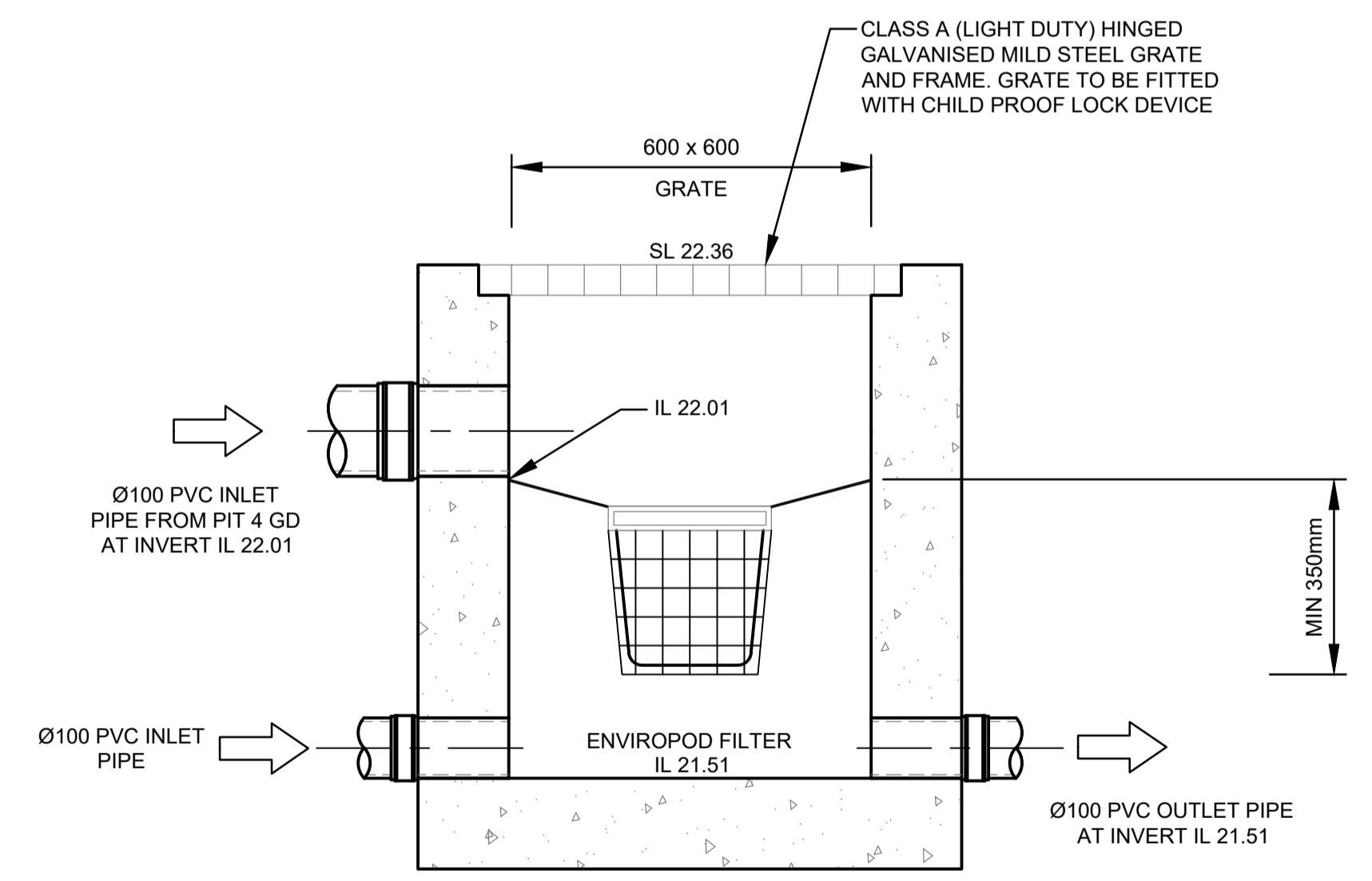
**CONFINED SPACE DANGER SIGN**

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  - B) MINIMUM DIMENSIONS OF THE SIGN - 300mm x 450mm (LARGE ENTRIES, SUCH AS DOORS) - 250mm x 180mm (SMALL ENTRIES SUCH AS GRATES & MANHOLES)
  - C) THE SIGN SHALL BE MANUFACTURED FROM COLOUR BONDED ALUMINUM OR POLYPROPYLENE
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 BORDER AND OTHER LETTERING = BLACK



**BASEMENT LEVEL 2 PLAN**  
SCALE 1:100

PUMP HOLDING TANK			
CAPACITY	3.69m <sup>3</sup>		
AREA	2.0m x 1.8m = 3.6m <sup>2</sup>		
MAX DEPTH	1.05m		
IL	20.23		
TWL	21.28		



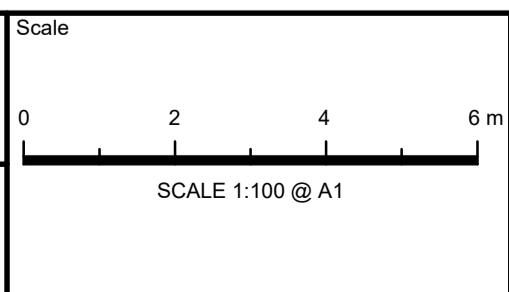
**PIT 2 OCEANGUARD CONFIGURATION SECTION**  
SCALE 1:10

NOT FOR CONSTRUCTION

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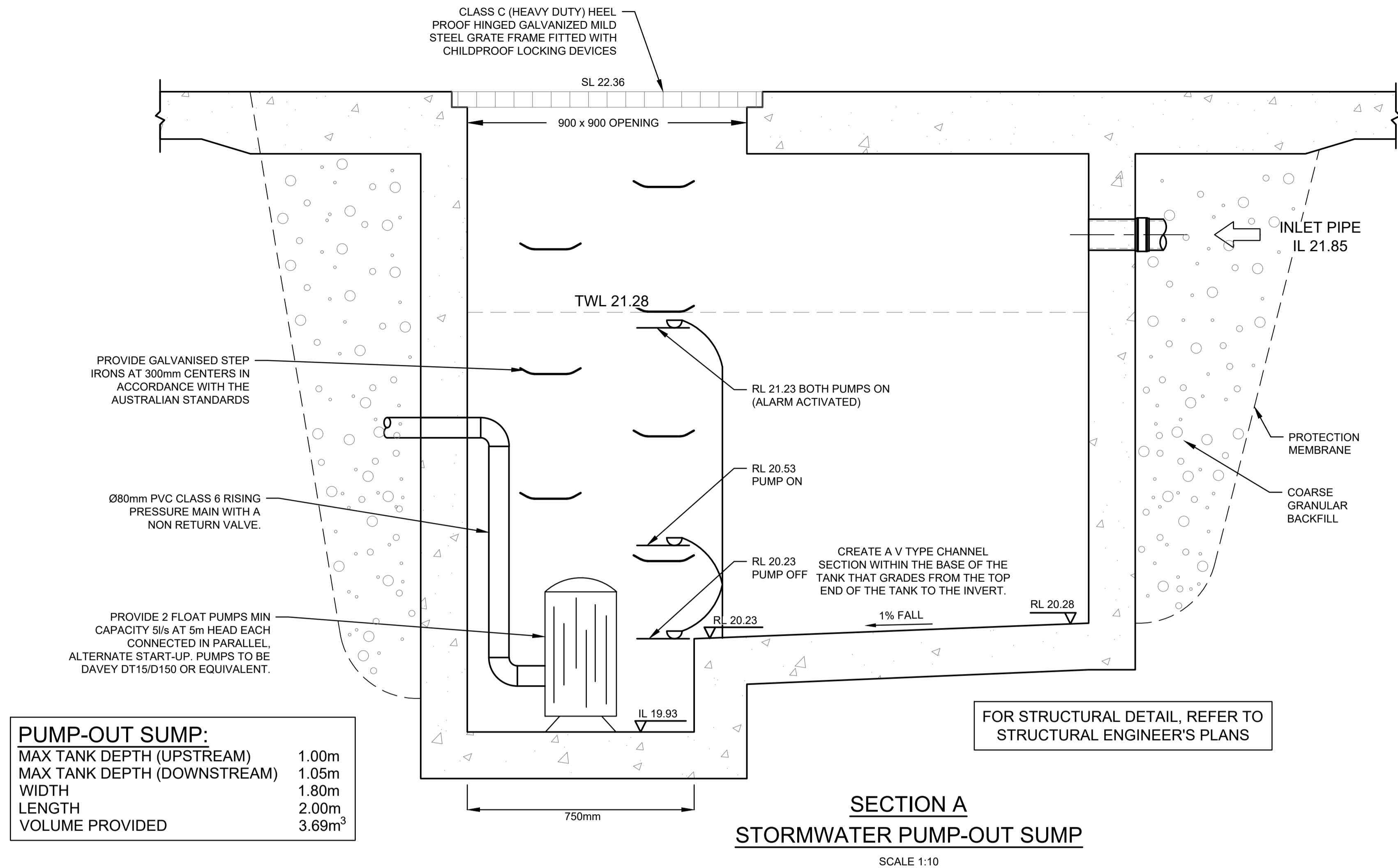


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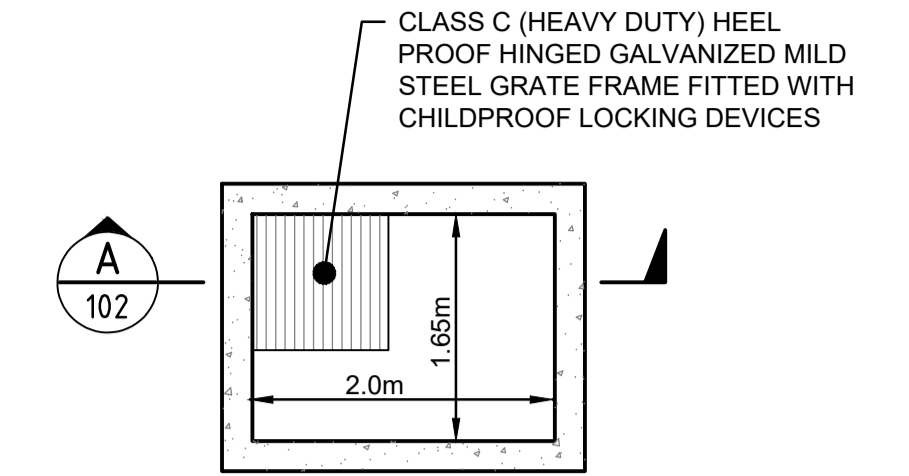
Project  
**118-120 STATION STREET, PENRITH PROPOSED MIXED USE DEVELOPMENT STORMWATER CONCEPT PLANS DEVELOPMENT APPLICATION**

Drawing Title	<b>STORMWATER CONCEPT PLAN BASEMENT LEVEL 2 SHEET 1 OF 2</b>		
Scale	A1	Project No.	200763
Dwg. No.	101	Issue	D



**PUMP-OUT SUMP:**

MAX TANK DEPTH (UPSTREAM)	1.00m
MAX TANK DEPTH (DOWNSTREAM)	1.05m
WIDTH	1.80m
LENGTH	2.00m
VOLUME PROVIDED	3.69m <sup>3</sup>



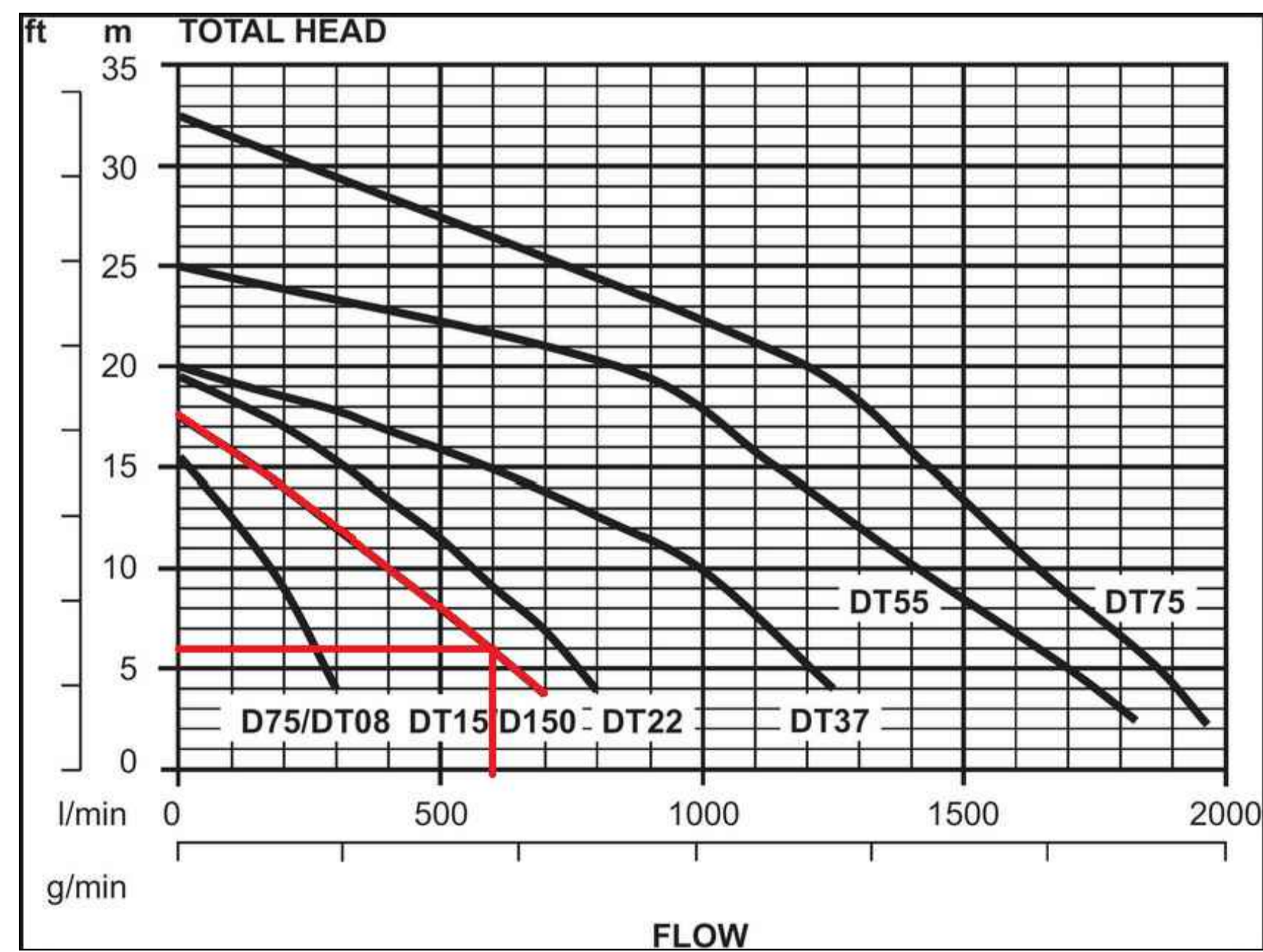
**NOTE:**

- FOR ALL THE STRUCTURAL DETAILS, REFER TO STRUCTURAL ENGINEER'S PLAN.
- ALL THE AG LINES BEHIND BASEMENT WALLS TO BE CONNECTED TO PUMP-OUT SUMP.

**PUMP-OUT SUMP DETAIL  
PLAN VIEW**  
SCALE 1:50

**PUMP STORAGE VOLUME CALCULATION**

- $I_{100, 2hrs} = 44.4 \text{ mm/hour}$
- PUMP STORAGE CATCHMENT AREA:  $A = 31.89 \text{ m}^2 = 0.00318 \text{ ha}$
- $Q = C \times I \times A / 360$  WHERE  $C = 1.0$  (REFER TO AS3500.3.5.4.6 (a))  
 $= 1.0 \times 44.4 \times 0.00318 / 360$   
 $= 0.000393 \text{ m}^3/\text{s}$   
 $= 0.393 \text{ L/s}$
- THEREFORE, THE PUMP HOLDING TANK VOLUME IS:  
 $V = 0.393 \times 2.0 \times 3600$   
 $= 2.83 \text{ m}^3$
- TOTAL REQUIRED VOLUME IS  $2.83 \text{ m}^3$



**PUMP CALCULATIONS**

Project Address: 118 - 120 Station Street, Penrith

$HL = (3.35 \times 10e6 \times Q / (d^2.63 \times C))^{1.852}$   
 $HL(\text{m}/100\text{m}), Q(\text{L}/\text{s}), d(\text{mm})$

$h1 = kv^2/2g$   
 $k(\text{cum}), v(\text{m}/\text{s}), g=9.8(\text{m})$

**H(total head) = Hf + h1 + Elevation Head (static head)**

Elevation Head(m) = 10      Pipe Length(m) = 10

Hazen - Williams C = 145      Hazen-Williams Constant

125-140 Commercial steel pipe
135-140 Bitumen Lined Cast iron pipe
140-145 Copper Tube
145-150 PVC

$d(\text{mm}) = 80$

Bend Losses,  $K_b = 3.06$   
 Valve Losses,  $K_v = 2.13$   
 Entry/Exit Losses,  $K_e = 5.00$   
 Cum Losses,  $K = 10.19$

Start Flow = 0  
 Increment = 1

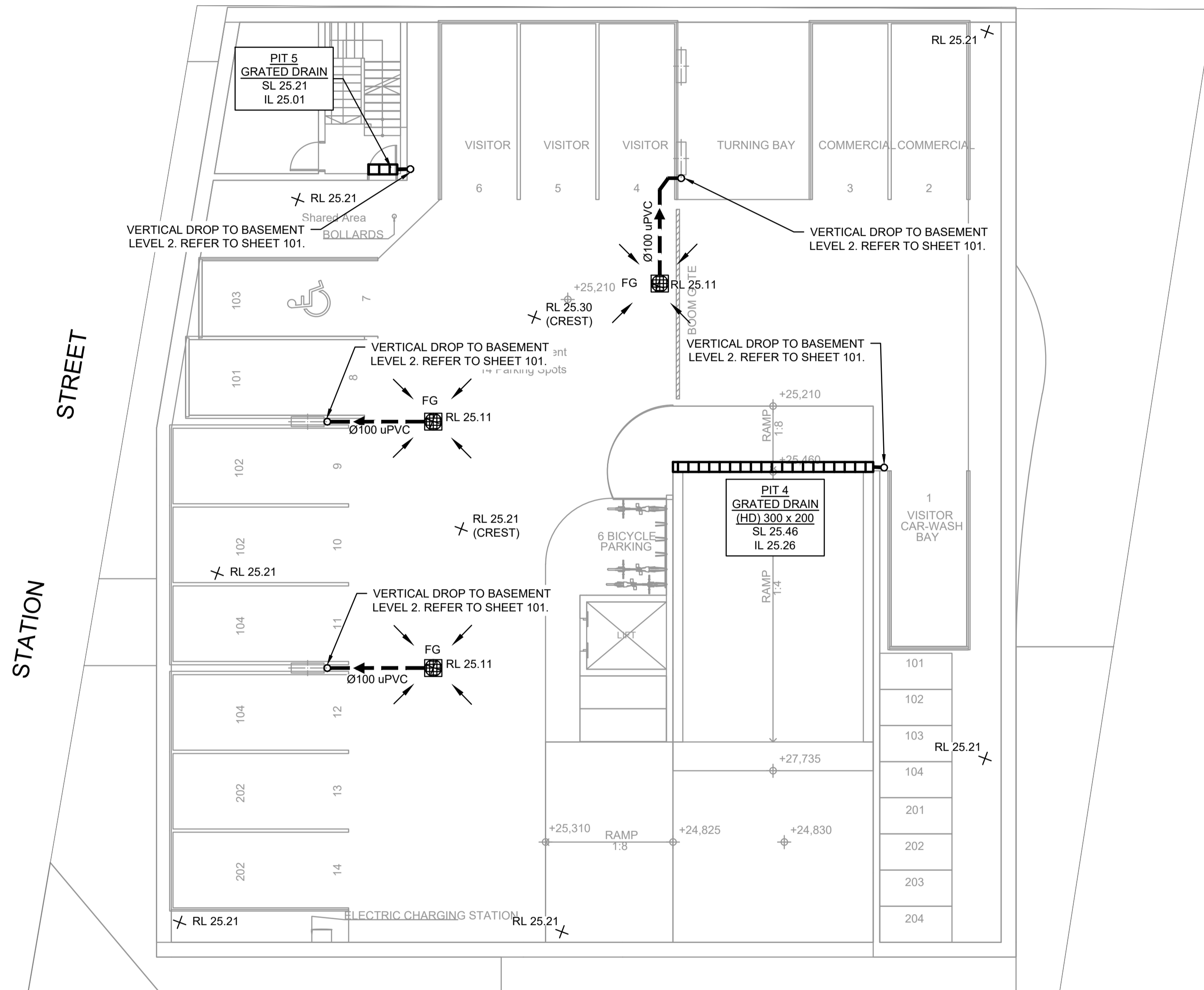
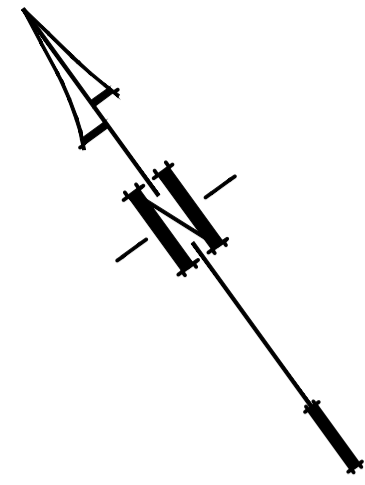
Q(L/s)	0	1	2	3	4	5	6	7	8	9	10	
HL(m/100m)	0.00	0.06	0.23	0.50	0.85	1.28	1.79	2.38	3.05	3.80	4.61	
Hf(m)	HL x pipe Length/100	0.00	0.01	0.02	0.05	0.08	0.13	0.18	0.24	0.31	0.38	0.46
v(m/s)	$Q(\text{L}/\text{s}) / \text{area of pipe crossing section}$	0.00	0.20	0.40	0.60	0.80	0.99	1.19	1.39	1.59	1.79	1.99
h1(m)	$k(\text{cum}) \times v(\text{m}/\text{s})^2 / 2 \times g$	0.00	0.02	0.08	0.19	0.33	0.51	0.74	1.01	1.32	1.67	2.06
H(m)	= Hf + H1 + Elevation Head	10.00	10.03	10.11	10.23	10.41	10.64	10.92	11.25	11.62	12.05	12.52

**UNDERGROUND PUMP - OUT SUMP STAGED STORAGE CALCULATIONS**

DEPTH (mm)	AREA (m <sup>2</sup> )	CUMULATIVE VOLUME (m <sup>3</sup> )
0	3.6	0
100	3.6	0.27
200	3.6	0.63
300	3.6	0.99
400	3.6	1.35
500	3.6	1.71
600	3.6	2.07
700	3.6	2.43
800	3.6	2.79
900	3.6	3.15
1000	3.6	3.51
1050	3.6	3.69

NOT FOR CONSTRUCTION

<table border="1"> <tr><td>D</td><td>ISSUE FOR DEVELOPMENT APPLICATION</td><td>10/09/2021</td><td>DBF</td><td>OC</td><td>OC</td></tr> <tr><td>C</td><td>COUNCIL COMMENTS</td><td>18/03/2021</td><td>AGN</td><td>JSF</td><td></td></tr> <tr><td>B</td><td>ARCHITECTURAL AMENDMENTS</td><td>20/11/2020</td><td>EZH</td><td>JSF</td><td></td></tr> <tr><td>A</td><td>ISSUE FOR DEVELOPMENT APPLICATION</td><td>11/09/2020</td><td>EZH</td><td>JSF</td><td></td></tr> </table>	D	ISSUE FOR DEVELOPMENT APPLICATION	10/09/2021	DBF	OC	OC	C	COUNCIL COMMENTS	18/03/2021	AGN	JSF		B	ARCHITECTURAL AMENDMENTS	20/11/2020	EZH	JSF		A	ISSUE FOR DEVELOPMENT APPLICATION	11/09/2020	EZH	JSF		Architect <b>ARCHITECTURE DESIGN STUDIO (NSW) PTY LTD</b> 11 Egerton Street, Silverwater, NSW 2128 P: 02 9648 6663 / F: 02 9648 6664 info@ad-s.com.au / www.ad-s.com.au abn: 90 616 216 196	Client <b>Mr. David Reeve</b> Council <b>Penrith Council</b>	Scale 0 200 400 600mm SCALE 1:10 @ A1 0 1 2 3 m SCALE 1:50 @ A1	Certification By:  <b>Anthony Hasham</b> ENGINEERING THE FUTURE	<b>ACE CIVIL STORMWATER SERVICES PTY LTD</b> ABN: 27 644 422 506 SHOP 2-141 CONCORD RD, NORTH STRATHFIELD, NSW 2137 P:(02) 9763 1500 E:info@aceeng.com.au	Project <b>118-120 STATION STREET, PENRITH PROPOSED MIXED USE DEVELOPMENT STORMWATER CONCEPT PLANS DEVELOPMENT APPLICATION</b>	Drawing Title <b>STORMWATER CONCEPT PLAN BASEMENT LEVEL 2 SHEET 2 OF 2</b> Scale As Shown Project No. 200763 Dwg. No. 102 Issue C
D	ISSUE FOR DEVELOPMENT APPLICATION	10/09/2021	DBF	OC	OC																										
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RESERVE STREET

**BASEMENT LEVEL 1 PLAN**

SCALE 1:100

**LEGEND**

- PROPOSED STORMWATER
- SURFACE FLOW ARROWS
- SUBSOIL DRAINAGE
- CLEANING EYE (OR INSPECTION EYE)
- PROPOSED STORAGE AREA
- FINISHED SURFACE LEVEL
- GRATED DRAIN
- FLOOR GRATE

**STANDARD PUMP OUT DESIGN NOTES**

- 1 - THE PUMP OUT SYSTEM SHALL BE DESIGN TO BE OPERATED IN THE FOLLOWING MANNER:
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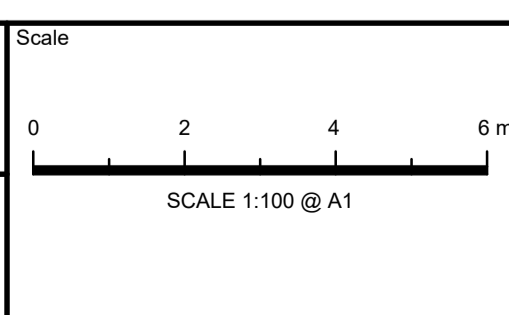
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Project  
**118-120 STATION STREET, PENRITH PROPOSED MIXED USE DEVELOPMENT STORMWATER CONCEPT PLANS DEVELOPMENT APPLICATION**

Drawing Title		Scale	A1	Project No.	Dwg. No.	Issue
<b>STORMWATER CONCEPT PLAN BASEMENT LEVEL 1</b>		1:100		200763	103	D

**GENERAL NOTES**

1. ALL THE CLEANING EYES (OR INSPECTION EYES) FOR THE UNDERGROUND PIPES HAVE TO BE TAKEN UP TO THE FINISHED GROUND LEVEL FOR EASY IDENTIFICATION AND MAINTENANCE PURPOSES
2. ALL LEVELS SHALL RELATE TO THE ESTABLISHED BENCH MARK.
3. THE BUILDER SHALL ENSURE THAT THE STORMWATER ENGINEERS DRAWINGS CORRESPOND TO THE ARCHITECTURAL, STRUCTURAL AND LANDSCAPING DRAWINGS. IF THERE EXISTS ANY DISCREPANCIES BETWEEN THE DRAWINGS, THE BUILDER SHALL REPORT THE DISCREPANCIES TO THE ENGINEER PRIOR TO COMMENCEMENT OF ANY WORKS
4. ALL MULCHING TO BE USED WITHIN THE AREA DESIGNATED AS ON-SITE DETENTION STORAGE SHALL BE OF A NON-FLOTABLE MATERIAL SUCH AS DECORATIVE RIVER GRAVEL. PINE BARK MULCHING SHALL NOT BE USED WITHIN THE DETENTION STORAGE AREA.
5. ALL RETAINING WALLS SHALL BE CONSTRUCTED COMPLETELY WITHIN THE PROPERTY BOUNDARY LIMITS TO DETAILS PREPARED BY THE STRUCTURAL ENGINEER. WALLS FORMING THE ON-SITE DETENTION SYSTEM SHALL BE OF MASONRY/BRICK CONSTRUCTION AND WATER TIGHT.
6. ALL SUB-SOIL DRAINAGE SHALL BE A MINIMUM OF 65MM DIA AND SHALL BE PROVIDED WITH A FILTER SOCK. THE SUBSOIL DRAINAGE SHALL BE INSTALLED IN ACCORDANCE WITH DETAILS TO BE PROVIDED BY THE LANDSCAPE ARCHITECT.
7. PRIOR TO COMMENCING ANY WORKS, THE BUILDER SHALL ENSURE THAT THE INVERT LEVELS OF WHERE THE SITE STORMWATER SYSTEM CONNECTS INTO THE COUNCILS KERB/DRAINAGE SYSTEM MATCHED THE DESIGN LEVELS. ANY DISCREPANCIES SHALL BE REPORTED TO THE DESIGN ENGINEER IMMEDIATELY.
8. ALL LINES ARE TO BE Ø90 uPVC 1.0% GRADE UNLESS NOTED OTHERWISE. CHARGED LINES TO BE SEWERGRADE & SEALED.
9. EXISTING SERVICES LOCATIONS SHOWN INDICATIVE ONLY.
10. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE & LEVEL ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF ANY EARTHWORKS.
11. ALL PIPES TO HAVE MIN 150mm COVER IF LOCATED WITHIN PROPERTY.
12. ALL PITS IN DRIVEWAYS TO BE 450x450 CONCRETE AND ALL PITS IN LANDSCAPED AREAS TO BE 450x450PLASTIC.
13. PITS LESS THAN 450 DEEP MAY BE BRICK, PRECAST OR CONCRETE.
14. ALL BALCONIES AND ROOFS TO BE DRAINED AND TO HAVE SAFETY OVERFLOWS IN ACCORDANCE WITH RELEVANT AUSTRALIAN STANDARDS.
15. ALL EXTERNAL SLABS TO BE WATERPROOFED.
16. ALL GRATES TO HAVE CHILD PROOF LOCKS.
17. ALL DRAINAGE WORKS TO AVOID TREE ROOTS.
18. ALL DP'S TO HAVE LEAF GUARDS.
19. ALL EXISTING LEVELS TO BE CONFIRMED BY BUILDER PRIOR TO CONSTRUCTION.
20. ALL WORK WITHIN COUNCIL RESERVE TO BE INSPECTED BY COUNCIL PRIOR TO CONSTRUCTION.
21. COUNCIL'S ISSUED FOOTWAY DESIGN LEVELS TO BE INCORPORATED INTO THE FINISHED LEVELS ONCE ISSUED BY COUNCIL.
22. ALL WORK SHALL BE IN ACCORDANCE WITH B.C.A. AND A.S.3500.3.
23. REFER TO LANDSCAPE ARCHITECT'S DRAWINGS FOR LANDSCAPING.
24. ALL WALLS FORMING THE DETENTION BASINS SHALL BE CONSTRUCTED WHOLLY WITHIN THE PROPERTY BOUNDARIES OF THE SITE BEING DEVELOPED.
25. OSD WARNING SIGN AND SAFETY FENCING SHALL BE PROVIDED TO ABOVE GROUND OSD STORAGE AREA IN ACCORDANCE WITH COUNCIL'S REQUIREMENTS.
26. ENSURE THAT NON FLOTABLE MULCH IS USED IN DETENTION BASINS, ie, USE DECORATIVE ROCK MULCH OR EQUIVALENT.
27. THE OSD BASIN / TANK IS TO BE BUILT TO THE CORRECT LEVELS & SIZE AS PER THIS DESIGN. ANY VARIATIONS ARE TO BE DONE UNDER CONSULTATION FROM OUR OFFICE ONLY. ANY AMENDMENTS WITHOUT OUR APPROVAL WOULD RESULT IN ADDITIONAL FEES FOR REDESIGN AT OC STAGE OR IF A SOLUTION CANNOT BE FOUND, RECONSTRUCTION IS REQUIRED UNDER THE CONTRACTOR'S EXPENSES
28. ALL PIPES IN BALCONIES TO BE Ø65 uPVC IN CONCRETE SLAB. CONTRACTOR TO PROVIDE A BREAK / OPEN VOID IN RAIL / BALLUSTRADE FOR STORMWATER EMERGENCY OVERFLOW. ALL ENCLOSED AREAS / PLANTER BOXES TO BE FITTED WITH FLOOR WASTES & DRAINED TO OSD. DOWNPIPES TO BE CHECKED BY ARCHITECT & PLUMBER PRIOR TO CONSTRUCTION.

**LEGEND**

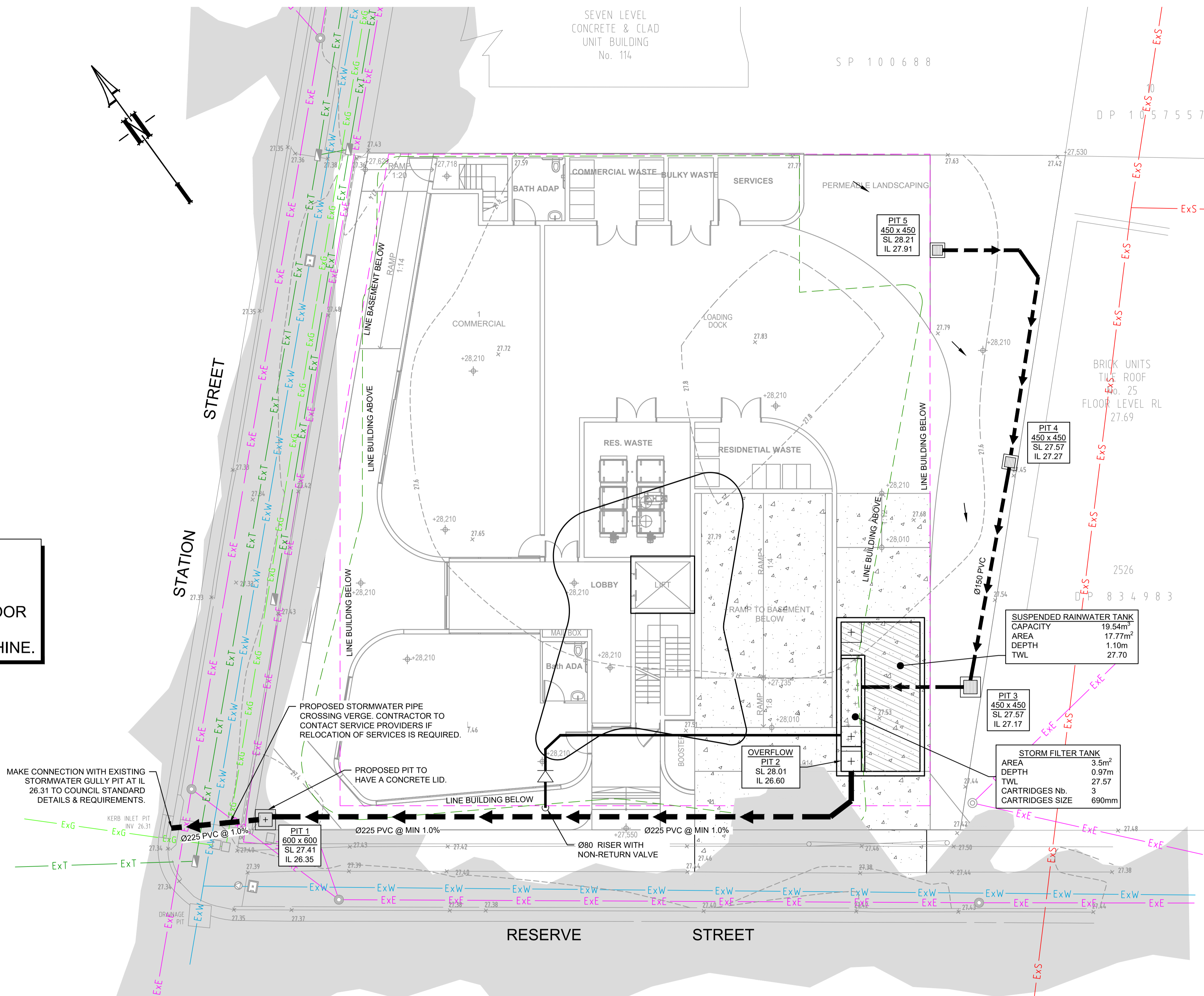
- PROPOSED STORMWATER BYPASSING OSD
- PROPOSED STORMWATER DRAINING TO RWT
- PROPOSED STORMWATER DRAINING TO OSD
- ExS - EXISTING SEWER MAIN (FROM RECORDS)
- ExW - EXISTING WATER (FROM RECORDS)
- ExE - EXISTING POWER (FROM RECORDS)
- ExG - EXISTING GAS (FROM RECORDS)
- ExT - EXISTING TELSTRA (FROM RECORDS)
- SURFACE FLOW ARROWS
- DESIGN SURFACE LEVEL
- EXISTING SURFACE LEVEL
- PROPOSED RAINWATER TANK STORAGE
- PROPOSED WSUD AREA
- Ø65 RISER WITH NON-RETURN VALVE

**RWT NOTE:**  
RAINWATER RE-USE AS SPECIFIED BY BASIX CERTIFICATE TO OUTDOOR TAPS AND/OR TOILETS AND/OR WASHING MACHINE.

**PIPES NOTE:**  
Ø65 PVC @ MIN 1.0%  
Ø90 PVC @ MIN 1.0%  
Ø100 PVC @ MIN 1.0%  
Ø150 PVC @ MIN 1.0%  
Ø225 PVC @ MIN 0.5%  
Ø300 PVC @ MIN 0.4%  
UNLESS NOTED OTHERWISE

**ROOF NOTE:**  
IT IS CONTRACTOR'S RESPONSIBILITY TO ENSURE MINIMUM 30 TO 40MM OF PONDING IS ACHIEVED OVER THE RAINWATER OUTLETS BY GRADING CATCHMENTS' SURFACES AT MINIMUM 0.5% FALL FOR PAVED SURFACES AND MINIMUM 1% FALL FOR OTHER SURFACES.

**ROOF NOTE:**  
ALL ROOF DRAINAGE SYSTEM TO BE CONNECTED TO WSUD, & IS SUBJECT TO DETAILED DESIGN STAGE. ALL DOWNPIPES TO BE Ø100mm DIAMETER TO CATER FOR THE 1 in 100yr ARI & ALL GUTTERS TO BE CONSTRUCTED ACCORDINGLY.



**GROUND FLOOR PLAN**  
SCALE 1:100

NOT FOR CONSTRUCTION

<table border="1"> <tr> <th>Issue</th> <th>Description</th> <th>Date</th> <th>Designed</th> <th>Engineer</th> <th>Checked</th> </tr> <tr> <td>D</td> <td>ISSUE FOR DEVELOPMENT APPLICATION</td> <td>10/09/2021</td> <td>DBF</td> <td>OC</td> <td></td> </tr> <tr> <td>C</td> <td>COUNCIL COMMENTS</td> <td>18/03/2021</td> <td>AGN</td> <td>JSF</td> <td></td> </tr> <tr> <td>B</td> <td>ARCHITECTURAL AMENDMENTS</td> <td>20/11/2020</td> <td>EHZ</td> <td>JSF</td> <td></td> </tr> <tr> <td>A</td> <td>ISSUE FOR DEVELOPMENT APPLICATION</td> <td>11/09/2020</td> <td>EHZ</td> <td>JSF</td> <td></td> </tr> </table>	Issue	Description	Date	Designed	Engineer	Checked	D	ISSUE FOR DEVELOPMENT APPLICATION	10/09/2021	DBF	OC		C	COUNCIL COMMENTS	18/03/2021	AGN	JSF		B	ARCHITECTURAL AMENDMENTS	20/11/2020	EHZ	JSF		A	ISSUE FOR DEVELOPMENT APPLICATION	11/09/2020	EHZ	JSF		<p>Architect <b>ARCHITECTURE DESIGN STUDIO (NSW) PTY LTD</b> 11 Egerton Street, Silverwater, NSW 2128 P: 02 9648 6663 / F: 02 9648 6664 info@ad-s.com.au / www.ad-s.com.au abn: 90 616 216 196</p>	<p>Client <b>Mr. David Reeve</b></p> <p>Council <b>Penrith Council</b></p>	<p>Scale 0 2 4 6 m SCALE 1:100 @ A1</p>	<p>Certification By: <i>Anthony Hasham</i> <b>Anthony Hasham</b></p>	<p><b>ACE CIVIL STORMWATER SERVICES PTY LTD</b> ABN: 27 644 422 506 SHOP 2-141 CONCORD RD, NORTH STRATHFIELD, NSW 2137 P:(02) 9763 1500 E:info@aceeng.com.au</p>	<p>Project <b>118-120 STATION STREET, PENRITH PROPOSED MIXED USE DEVELOPMENT STORMWATER CONCEPT PLANS DEVELOPMENT APPLICATION</b></p>	<p>Drawing Title <b>STORMWATER CONCEPT PLAN</b></p> <p>Scale: A1 1:100 Project No: 200763 Dwg. No: 104 Issue: D</p>
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	Flow (ML/yr)	TSS (kg/yr)	TP (kg/yr)	TH (kg/yr)	GP (kg/yr)
Flow In	0.14	3.55	0.02	0.30	3.81
ET Loss	0.00	0.00	0.00	0.00	0.00
Infiltration Loss	0.00	0.00	0.00	0.00	0.00
Low Flow Bypass Out	0.00	0.00	0.00	0.00	0.00
High Flow Bypass Out	0.00	0.00	0.00	0.00	0.00
Pipe Out	0.04	0.58	0.01	0.07	0.00
Weir Out	0.00	0.00	0.00	0.00	0.00
Transfer Function Out	0.00	0.00	0.00	0.00	0.00
Reuse Supplied	0.10	1.16	0.01	0.14	0.00
Reuse Requested	0.12	0.00	0.00	0.00	0.00
% Reuse Demand Met	80.72	0.00	0.00	0.00	0.00
% Load Reduction	69.97	83.72	73.62	75.84	100.00

**NODE WATER BALANCE FOR RAINWATER TANK**  
N.T.S.

**RWT RE-USE CALCULATIONS:**

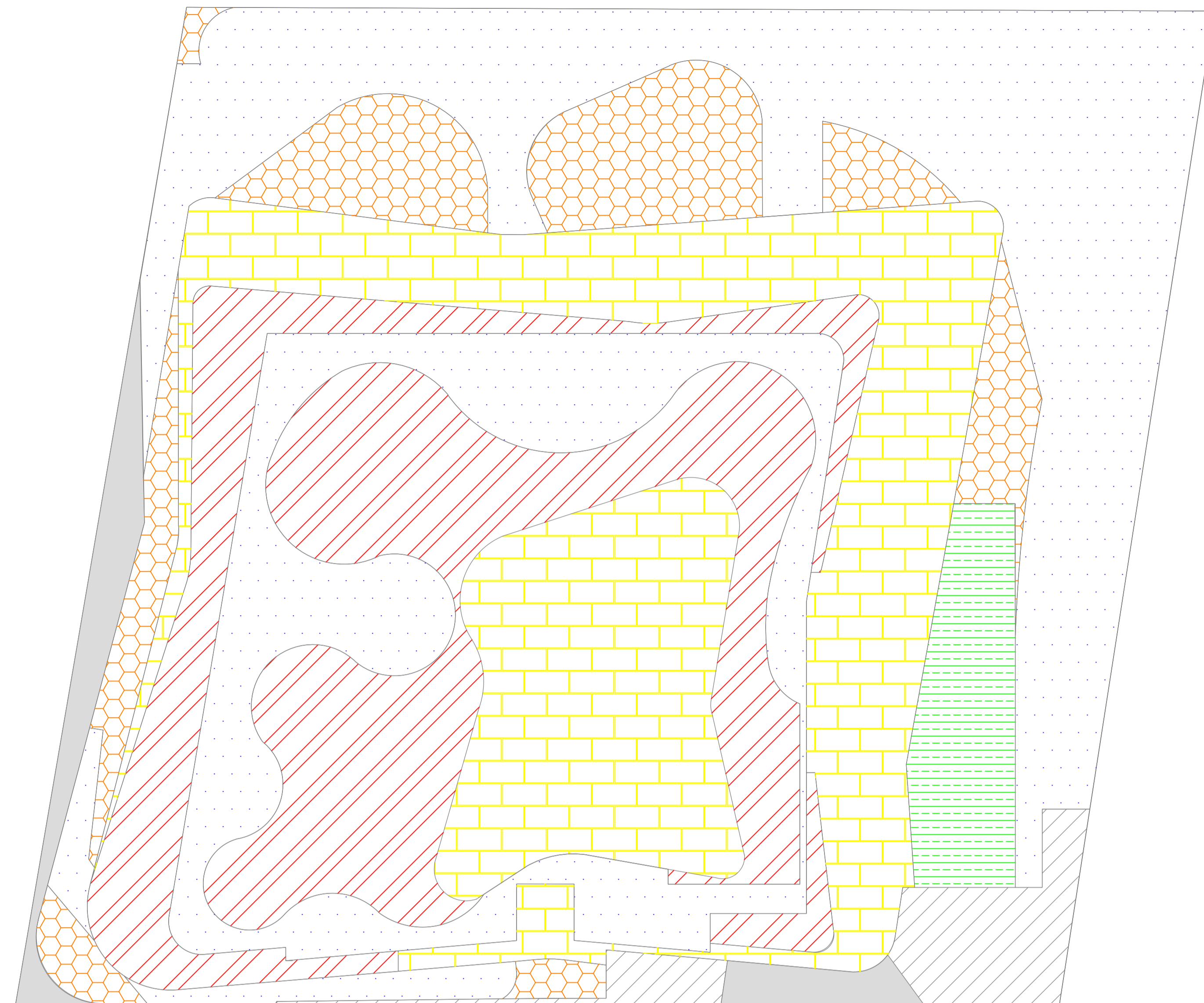
AREA TO BE IRRIGATED = 114.73m<sup>2</sup>  
 YEARLY RE-USE DEMAND = 0.4 KL/Yr/m<sup>2</sup> x 114.73 m<sup>2</sup>  
 = 46 KL/Yr

DAILY RE-USE DEMAND:  
 RAINWATER RE-USE FOR TOILET FLUSHING OF 2 ON-SITE TOILETS =  
 2x0.1 KL/Day/Toilet = 0.2KL/Day

**CATCHMENT LEGEND**

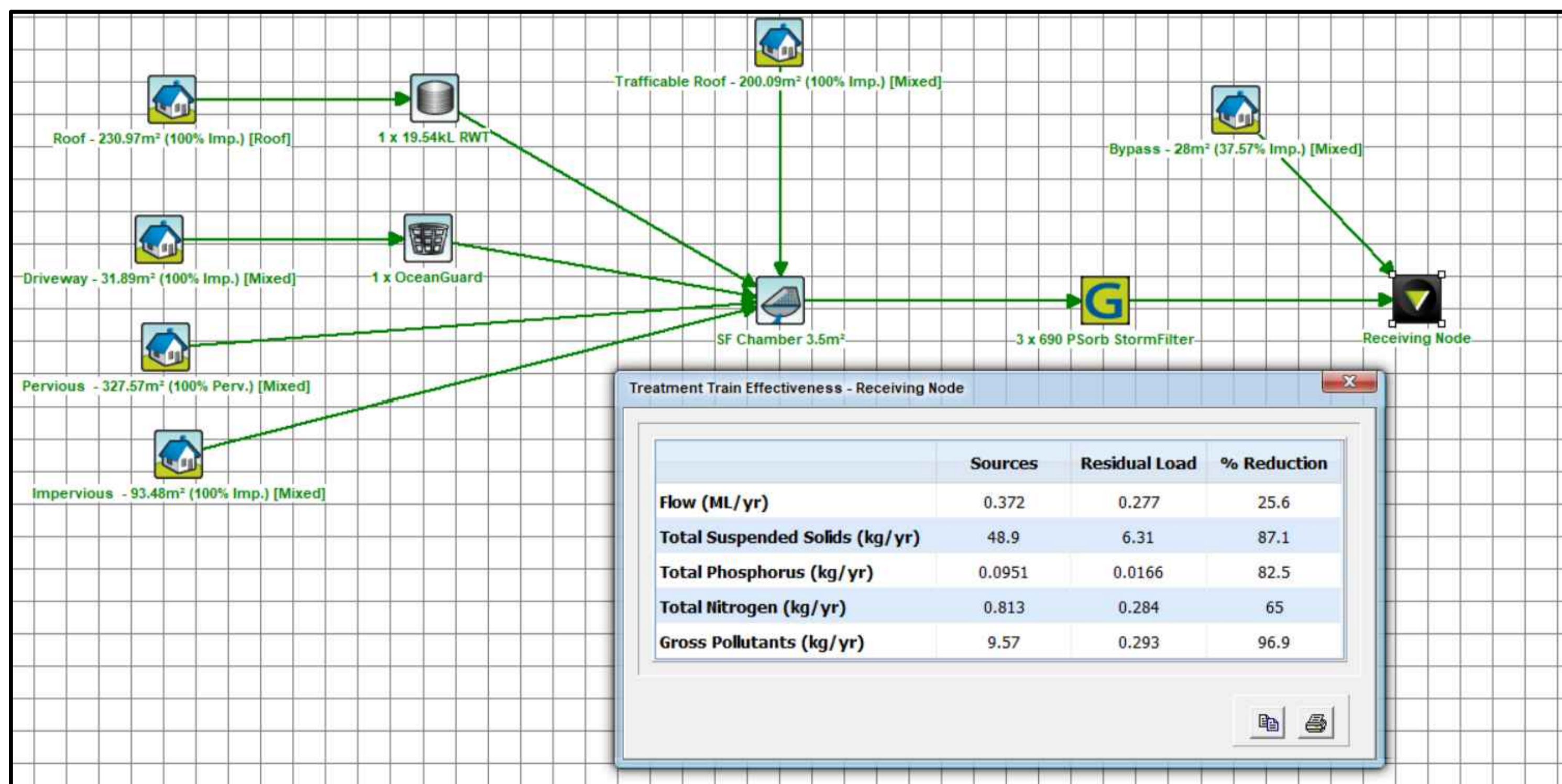
- NON-TRAFFICABLE ROOF TO RWT THEN TO WSUD =230.97m<sup>2</sup>
- TRAFFICABLE ROOF TO WSUD = 200.09m<sup>2</sup>
- DRIVEWAY TO OCEANGUARD THEN TO WSUD = 31.89m<sup>2</sup>
- PERVIOUS AREA TO WSUD = 327.57m<sup>2</sup>
- IMPERVIOUS AREA TO WSUD = 93.48m<sup>2</sup>
- AREA BYPASSING = 28m<sup>2</sup> (30.57% IMPERVIOUS)
- 100yr ARI FLOODING NOT INCLUDED IN WSUD CALCULATION

TOTAL AREA INCLUDED IN CALCULATIONS = 912.0m<sup>2</sup>  
 TOTAL AREA DRAINING TO WSUD = 884.0m<sup>2</sup>  
 TOTAL SITE AREA = 935.3m<sup>2</sup>



**WSUD CATCHMENT PLAN**  
SCALE 1:100

**ROOF NOTE:**  
 ALL ROOF DRAINAGE SYSTEM TO BE CONNECTED TO WSUD, & IS SUBJECT TO DETAILED DESIGN STAGE. ALL DOWNPIPES TO BE Ø100mm DIAMETER TO CATER FOR THE 1 in 100yr ARI & ALL GUTTERS TO BE CONSTRUCTED ACCORDINGLY.

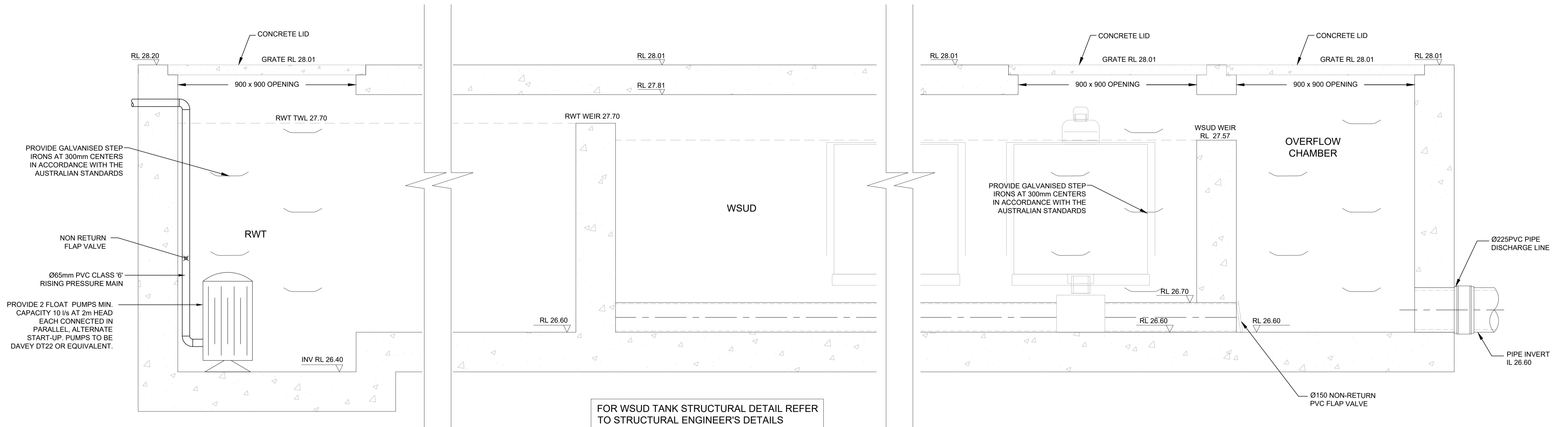


	Sources	Residual Load	% Reduction
Flow (ML/yr)	0.372	0.277	25.6
Total Suspended Solids (kg/yr)	48.9	6.31	87.1
Total Phosphorus (kg/yr)	0.0951	0.0166	82.5
Total Nitrogen (kg/yr)	0.813	0.284	65
Gross Pollutants (kg/yr)	9.57	0.293	96.9

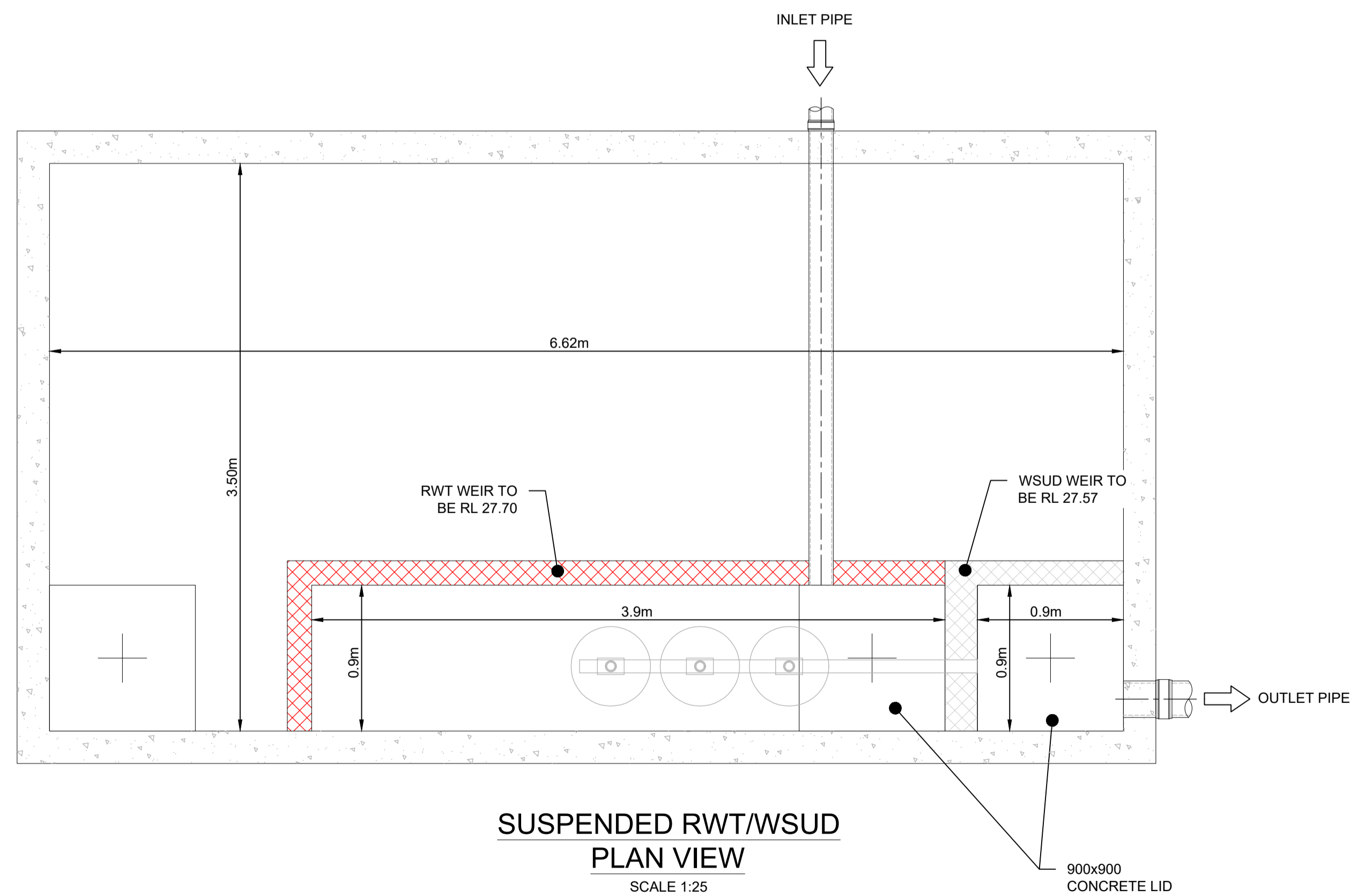
**MUSIC RESULTS**  
N.T.S.

NOT FOR CONSTRUCTION

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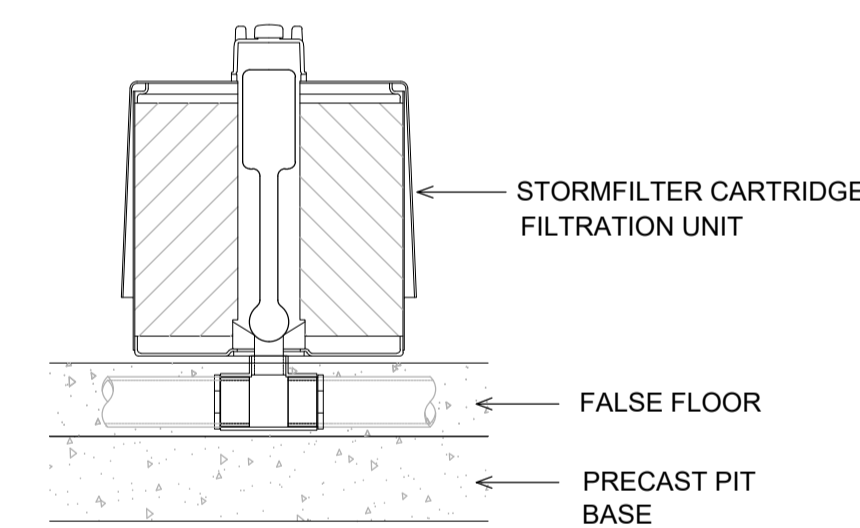
**SUSPENDED RWT/WSUD DETAIL**  
N.T.S.



**GENERAL NOTES**

1. INLET AND OUTLET PIPING SHALL BE SPECIFIED BY SITE CIVIL ENGINEER (SEE PLANS) AND PROVIDED BY CONTRACTOR. STORMFILTER IS PROVIDED WITH OPENINGS AT INLET AND OUTLET LOCATIONS.
2. IF THE PEAK FLOW RATE, AS DETERMINED BY THE SITE CIVIL ENGINEER, EXCEEDS THE PEAK HYDRAULIC CAPACITY OF THE PRODUCT, AN UPSTREAM BYPASS STRUCTURE IS REQUIRED. PLEASE CONTACT STORMWATER360 FOR OPTIONS.
3. THE FILTER CARTRIDGE(S) ARE SIPHON-ACTUATED AND SELF-CLEANING. THE STANDARD DETAIL DRAWING SHOWS THE MAXIMUM NUMBER OF CARTRIDGES. THE ACTUAL NUMBER SHALL BE SPECIFIED BY THE SITE CIVIL ENGINEER ON SITE PLANS OR IN DATA TABLE BELOW. PRECAST STRUCTURE TO BE CONSTRUCTED IN ACCORDANCE WITH AS3600.
4. FOR SHALLOW, LOW DROP OR SPECIAL DESIGN CONSTRAINTS, CONTACT STORMWATER360 FOR DESIGN OPTIONS.
5. ALL WATER QUALITY PRODUCTS REQUIRE PERIODIC MAINTENANCE AS OUTLINED IN THE O&M GUIDELINES. PROVIDE MINIMUM CLEARANCE FOR MAINTENANCE ACCESS.
6. STRUCTURE AND ACCESS COVERS DESIGNED TO MEET AUSTRROADS T44 LOAD RATING WITH 0.2m FILL MAXIMUM.
7. THE STRUCTURE THICKNESSES SHOWN ARE FOR REPRESENTATIONAL PURPOSES AND VARY REGIONALLY.
8. ANY BACKFILL DEPTH, SUB-BASE, AND OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY SITE CIVIL ENGINEER.
9. STORMFILTER BY STORMWATER360:  
SYDNEY (AU) PHONE: (02) 9525 5833.  
BRISBANE (AU) PHONE: (07) 3272 1872.

**SYSTEM HYDRAULIC DROP CARTRIDGE FLOW RATE**



**STORMFILTER DESIGN TABLE**

- STORMFILTER TREATMENT CAPACITY VARIES BY NUMBER OF FILTER CARTRIDGES INSTALLED AND BY REGION SPECIFIC INTERNAL FLOW CONTROLS. CONVEYANCE CAPACITY IS RATED AT 80L/S.
- ALL PARTS PROVIDED AND INTERNAL ASSEMBLY BY STORMWATER360 AUSTRALIA UNLESS OTHERWISE NOTED.

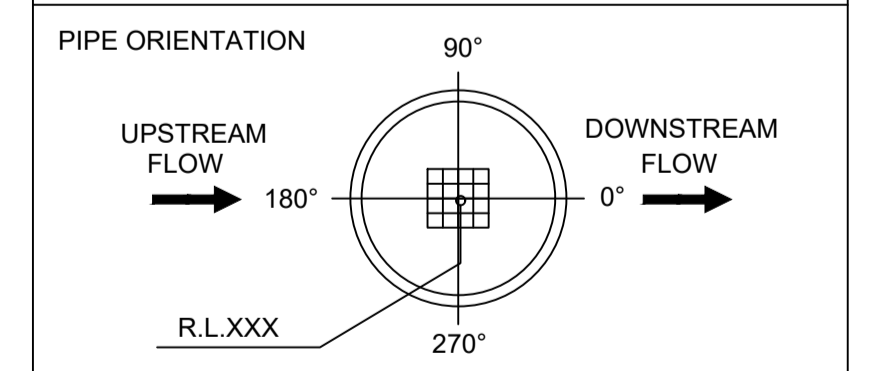
CARTRIDGE HEIGHT	690		460		310	
SYSTEM HYDRAULIC DROP (H - REQ'D. MIN.)	930	700	700	550	550	550
TREATMENT BY MEDIA SURFACE AREA L/S/m <sup>2</sup>	1.4	0.7	1.4	0.7	1.4	0.7
CARTRIDGE FLOW RATE (L/s)	1.42	0.71	0.95	0.47	0.63	0.32

**SITE SPECIFIC DATA REQUIREMENTS**

STRUCTURE ID	1
WATER QUALITY FLOW RATE (L/S)	-
PEAK FLOW RATE (L/S)	-
RETURN PERIOD OF PEAK FLOW (yrs)	XXX
# OF CARTRIDGES REQUIRED (8-22)	4
CARTRIDGE HEIGHT (310, 460 or 690mm)	690
MEDIA TYPE (PERLITE, PERLITE/ZEOLITE OR ZPG)	ZPG

PRECAST VAULT WEIGHT	- kg
PRECAST LID WEIGHT	- kg

PIPE DATA:	I.L.	MATERIAL	DIAMETER
INLET PIPE #1		PVC	
INLET PIPE #2		N/A	
OUTLET PIPE		PVC	



LADDER	YES/NO
ANTI-FLOTATION BALLAST	N/A

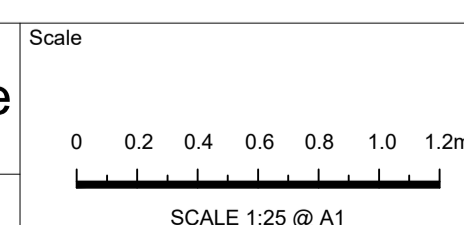
**STORMFILTER TABLE**  
N.T.S.

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Client  
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Council  
**Penrith Council**



Certification By:  
*Anthony Hasham*  
**Anthony Hasham**



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NORTH STRATHFIELD, NSW 2137  
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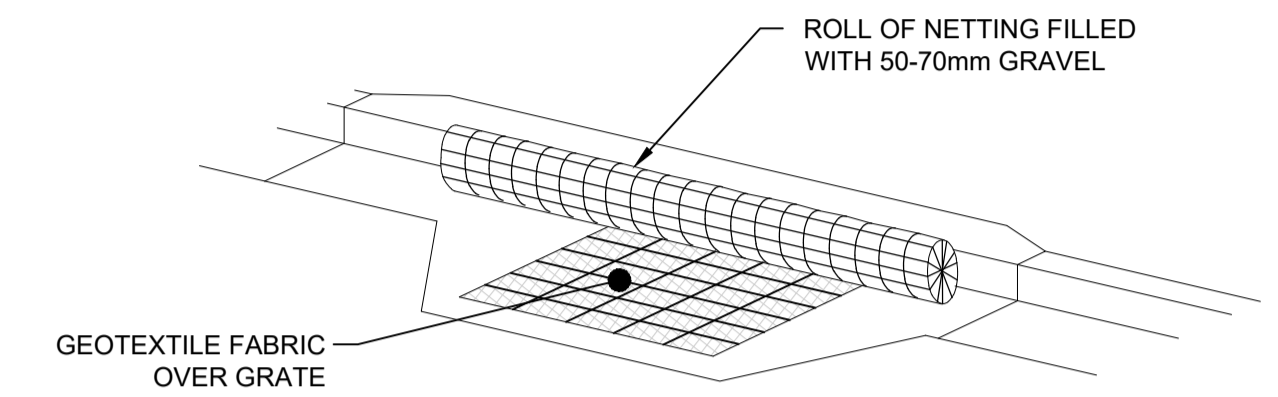
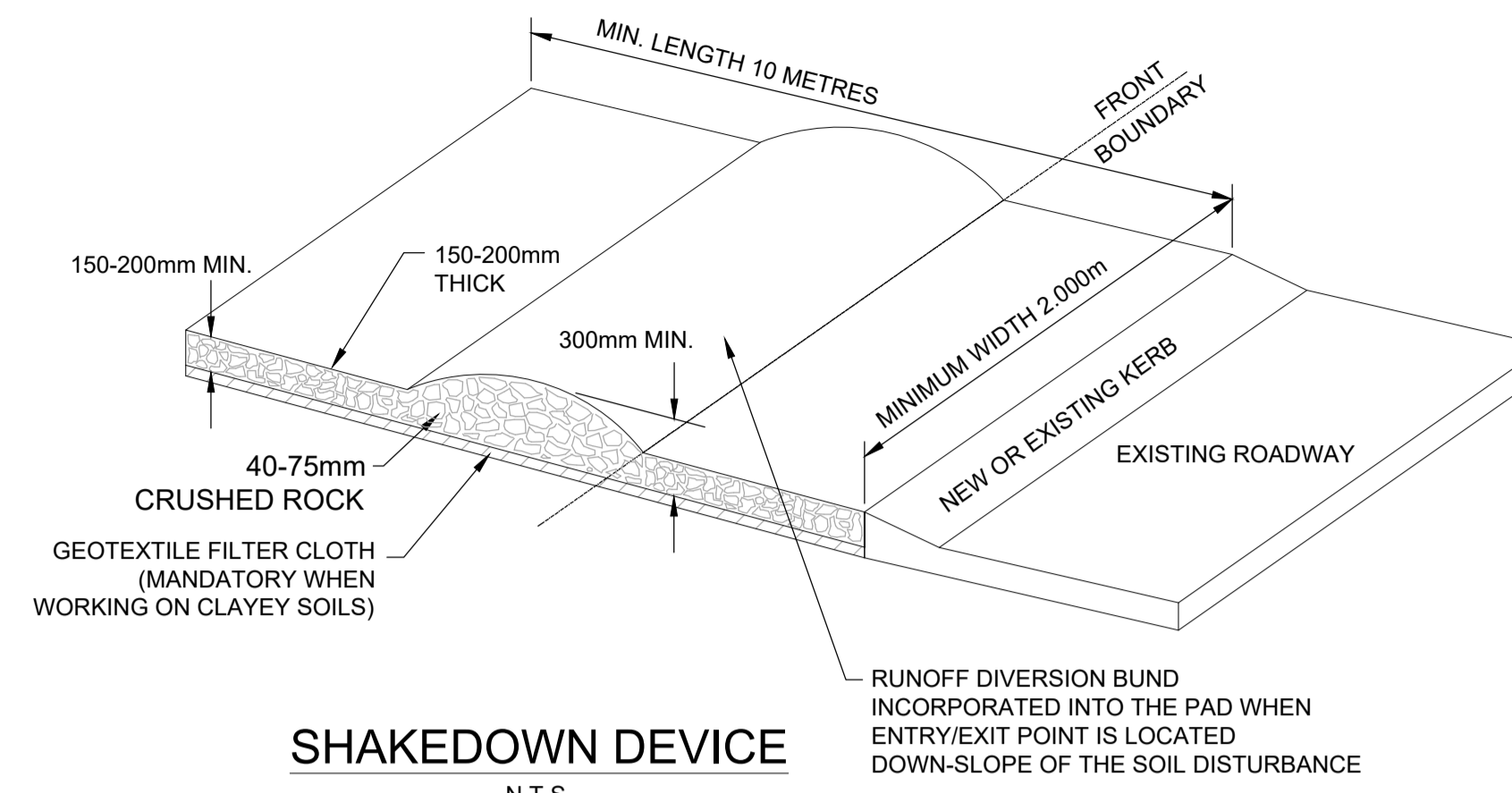
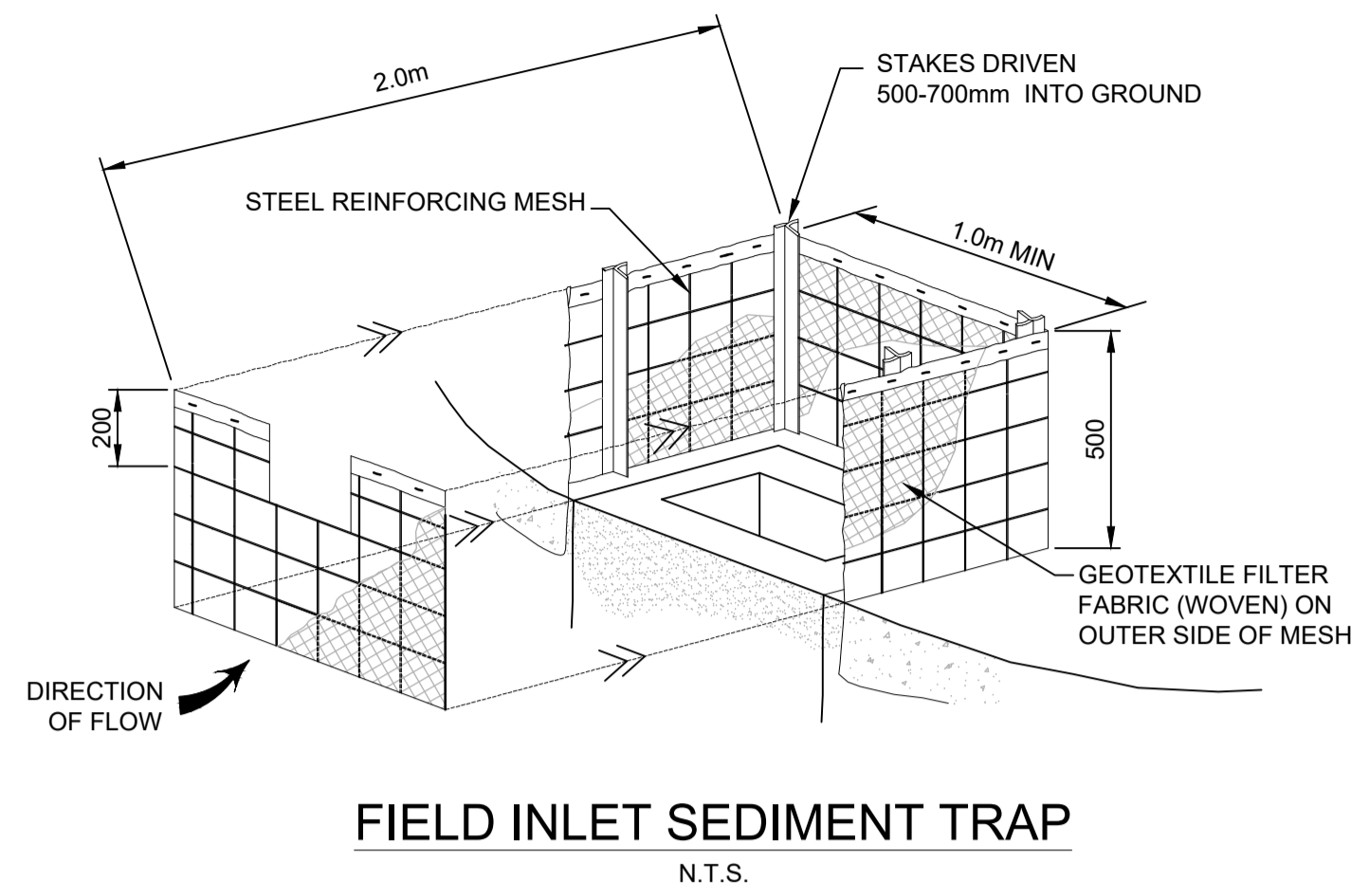
Project  
**118-120 STATION STREET, PENRITH PROPOSED MIXED USE DEVELOPMENT STORMWATER CONCEPT PLANS DEVELOPMENT APPLICATION**

Drawing Title  
**RWT & WSUD DETAILS**

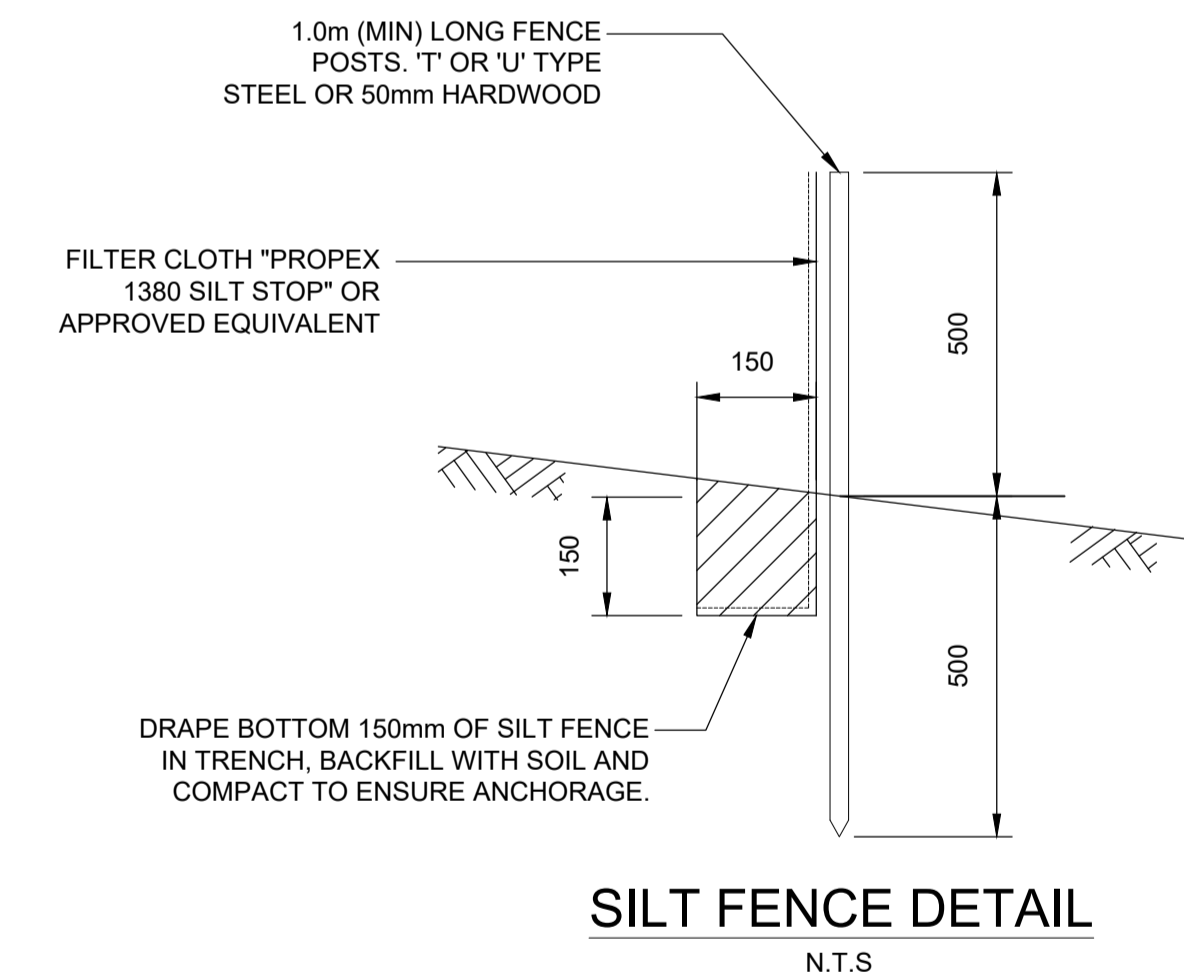
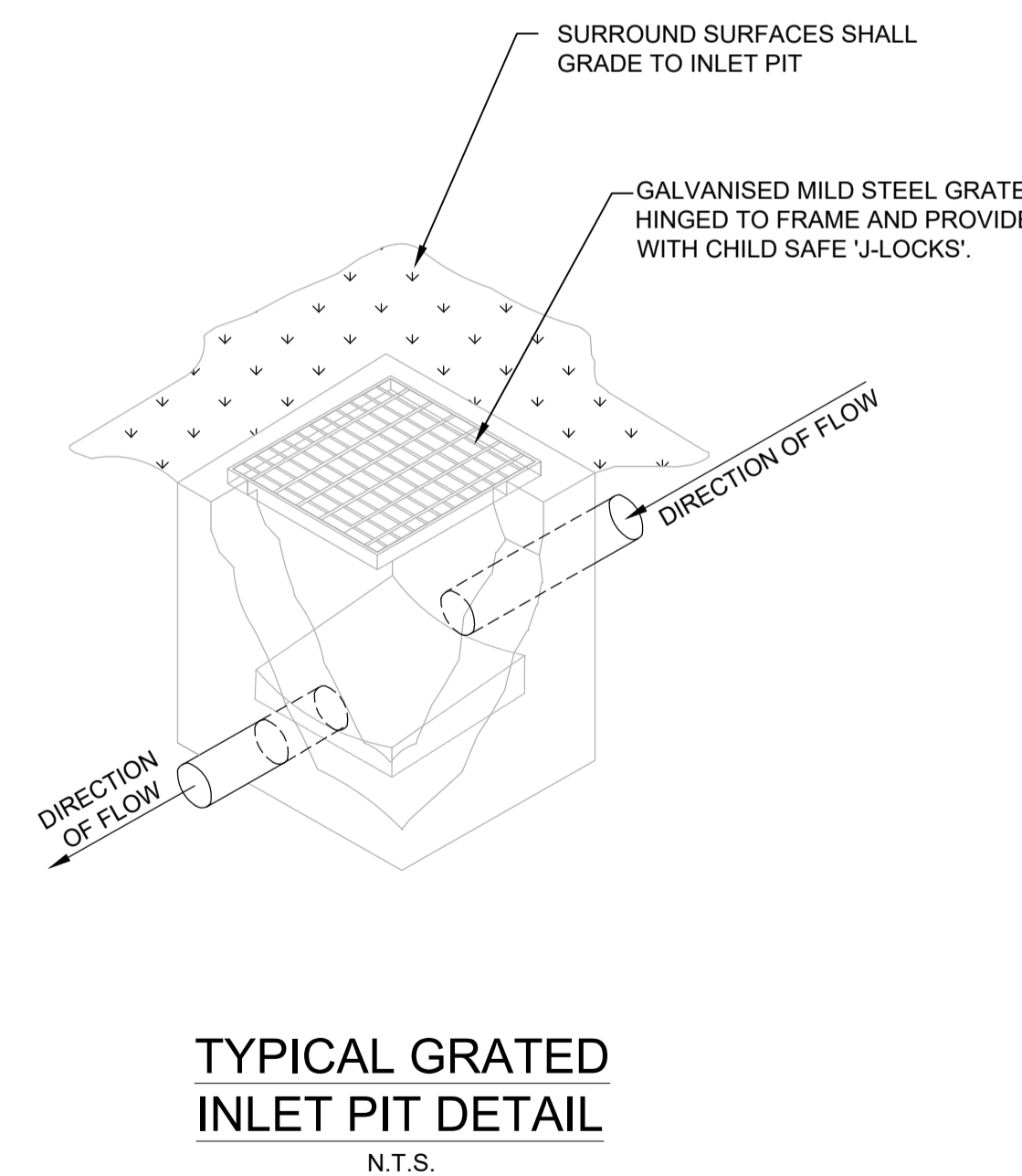
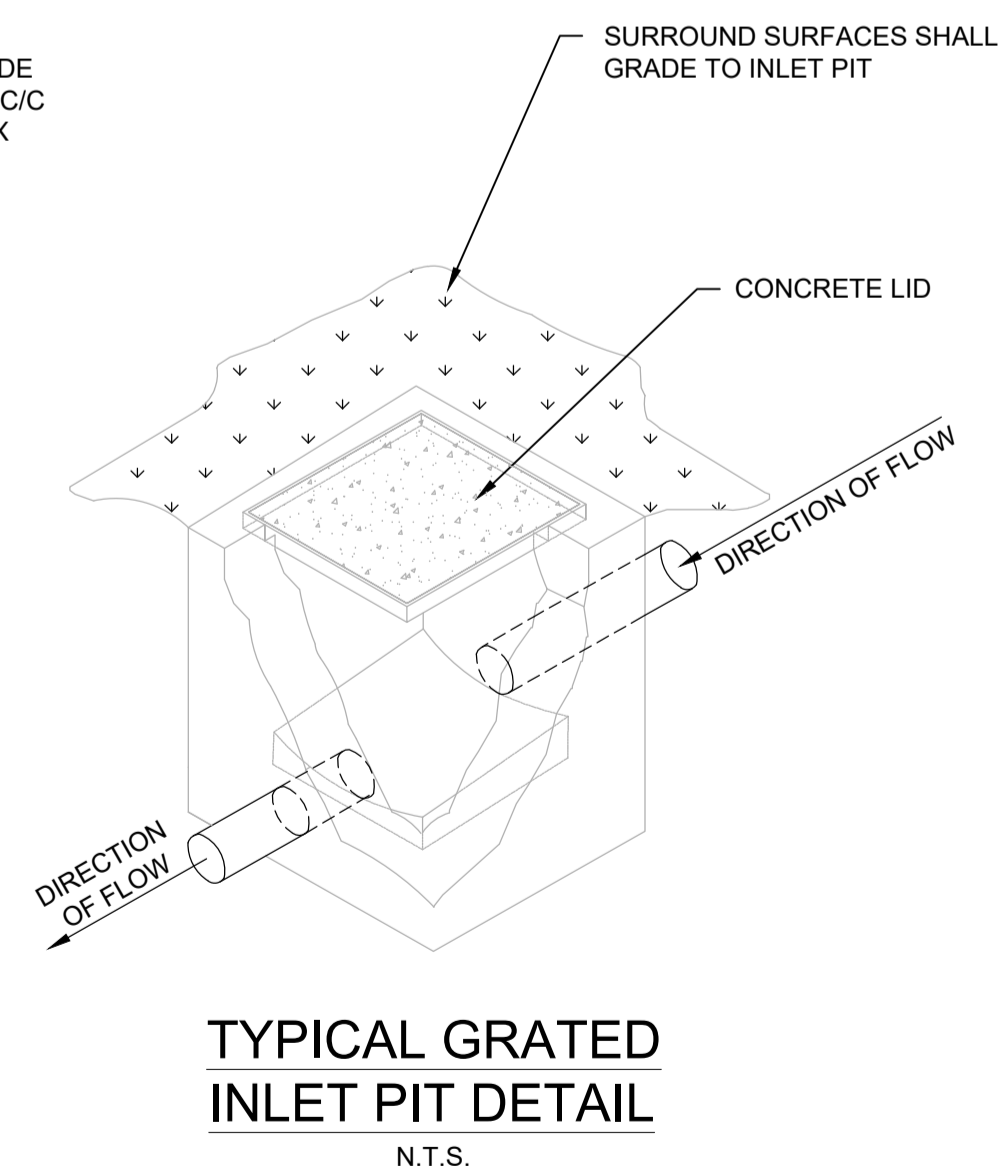
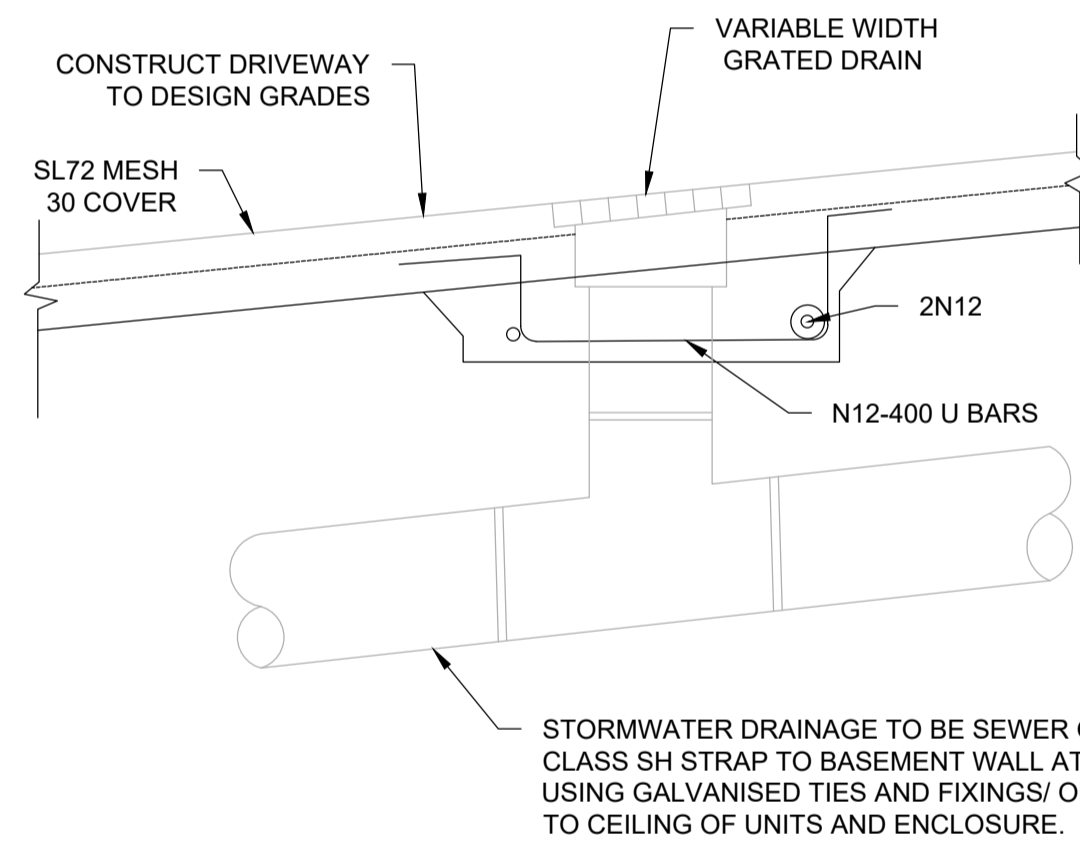
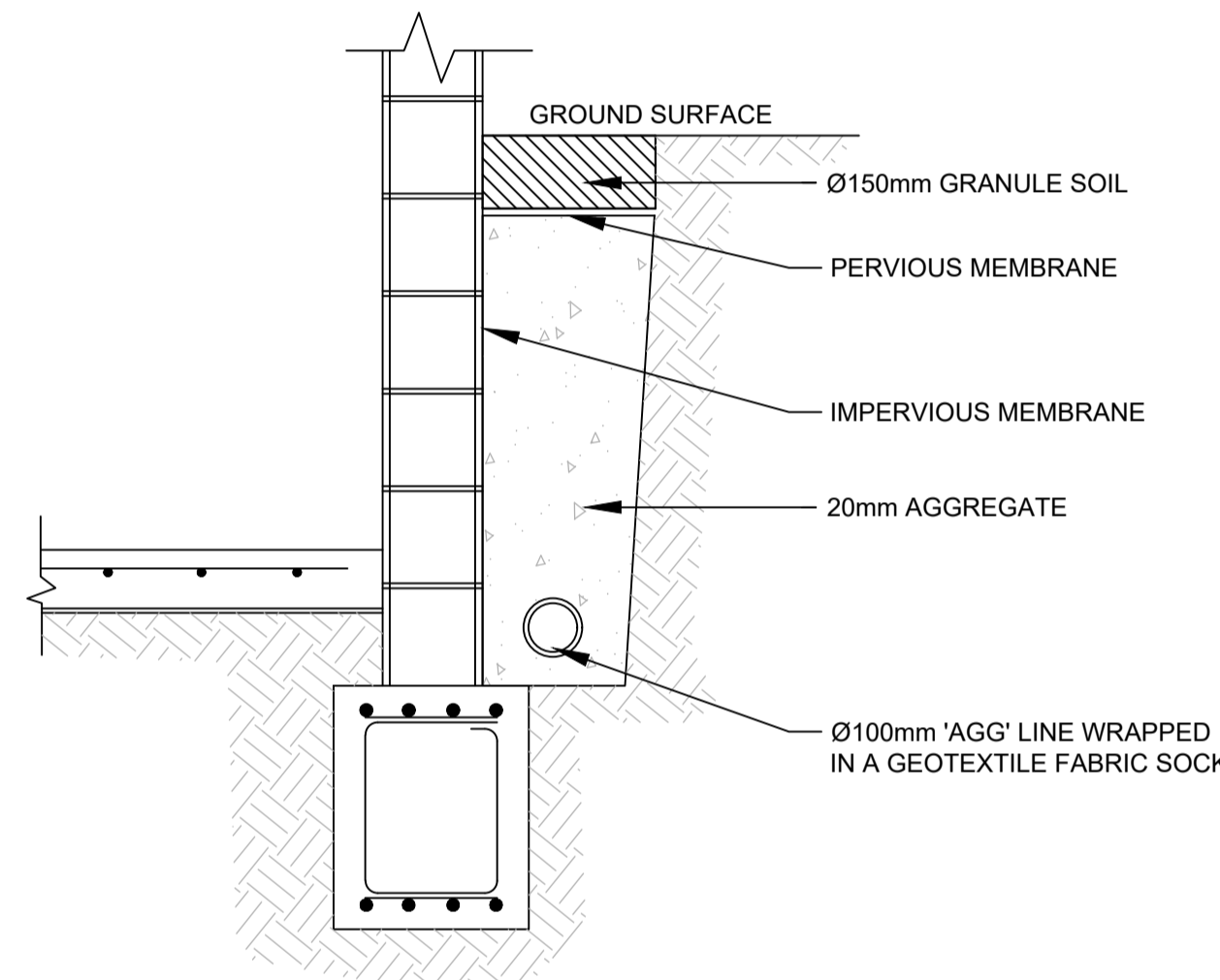
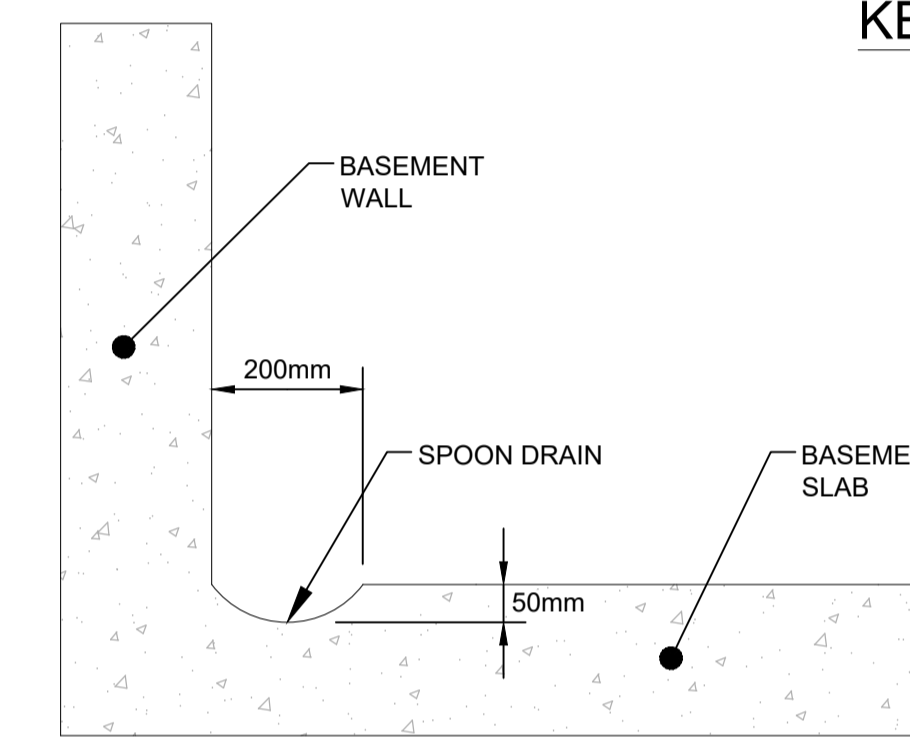
Scale	A1	Project No.	Dwg. No.	Issue
As Shown		200763	106	C

# SEDIMENT & EROSION NOTES

1. IMMEDIATELY FOLLOWING SETTING OUT OF THE WORKS, BUT PRIOR TO COMMENCEMENT OF ANY CLEARING OR EARTHWORKS, THE CONTRACTOR AND SUPERINTENDENT SHALL WALK THE SITE TO NOMINATE THE LOCATIONS AND TYPES OF SEDIMENT AND EROSION CONTROL MEASURES TO BE ADOPTED. THESE MEASURES SHALL BE IMPLEMENTED PRIOR TO ANY CLEARING OR EARTHWORKS AND MAINTAINED UNTIL THE WORKS ARE COMPLETED AND NO LONGER POSE AN EROSION HAZARD, UNLESS OTHERWISE APPROVED BY THE SUPERINTENDENT.
2. IMMEDIATELY FOLLOWING SETTING OUT OF THE WORKS, BUT PRIOR TO COMMENCEMENT OF ANY CLEARING OR EARTHWORKS, THE CONTRACTOR AND SUPERINTENDENT SHALL WALK THE SITE TO IDENTIFY AND MARK TREES WHICH ARE TO BE PRESERVED. NOTWITHSTANDING THE ABOVE, THE CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS TO MINIMISE DISTURBANCE TO EXISTING VEGETATION AND GROUND COVER OUTSIDE THE MINIMUM AREAS REQUIRED TO COMPLETE THE WORKS AND SHALL BE RESPONSIBLE FOR RECTIFICATION, AT ITS OWN COST, OF ANY DISTURBANCE BEYOND THOSE AREAS.
3. PROVIDE GULLY GRATE INLET SEDIMENT TRAPS AT ALL GULLY PITS.
4. PROVIDE SILT FENCING ALONG PROPERTY LINE AS DIRECTED BY SUPERINTENDENT.
5. ADDITIONAL CONTROL DEVICES TO BE PLACED WHERE DIRECTED BY THE PRINCIPLE.
6. ALTERNATIVE DESIGNS TO BE APPROVED BY SUPERINTENDENT PRIOR TO CONSTRUCTION.
7. WASH DOWN/RUMBLE AREA TO BE CONSTRUCTED WITH PROVISIONS RESTRICTING ALL SILT AND TRAFFICKED DEBRIS FROM ENTERING THE STORMWATER SYSTEM.
8. NO WORK OR STOCKPILING OF MATERIALS TO BE PLACED OUTSIDE OF SITE WORK BOUNDARY.
9. APPROPRIATE EROSION AND SEDIMENT CONTROLS TO BE USED TO PROTECT STOCKPILES AND MAINTAINED THROUGH OUT CONSTRUCTION.
10. IT IS THE CONTRACTORS RESPONSIBILITY TO TAKE DUE CARE OF NATURAL VEGETATION. NO CLEARING IS TO BE UNDERTAKEN WITHOUT PRIOR APPROVAL FROM THE SUPERINTENDENT.
11. TO AVOID DISTURBANCE TO EXISTING TREES, EARTHWORKS WILL BE MODIFIED AS DIRECTED ON-SITE BY THE SUPERINTENDENT.
12. THE LOCATION OF EROSION AND SEDIMENTATION CONTROLS WILL BE DETERMINED ON SITE BY THE SUPERINTENDENT.
13. ACCESS TRACKS THROUGH THE SITE WILL BE LIMITED TO THOSE DETERMINED BY THE SUPERINTENDENT AND THE CONTRACTOR PRIOR TO ANY WORK COMMENCING.
14. ALL SETTING OUT IS THE RESPONSIBILITY OF THE CONTRACTOR PRIOR TO WORKS COMMENCING ON SITE. THE SUPERINTENDENT'S SURVEYOR SHALL PEG ALL ALLOTMENT BOUNDARIES, PROVIDE COORDINATE INFORMATION TO THESE PEGS AND PLACE BENCH MARKS. THE CONTRACTOR SHALL SET OUT THE WORKS FROM AND MAINTAIN THESE PEGS.
15. PLANS ARE MINIMUM REQUIREMENTS AND ARE TO BE USED AS A GUIDE ONLY. EXACT MEASURES USED SHALL BE DETERMINED ON SITE IN CONJUNCTION WITH PROGRAM OF CONTRACTORS WORKS etc.



**KERB INLET PROTECTION SAG GULLIES**  
N.T.S.



## SILT FENCE NOTES:

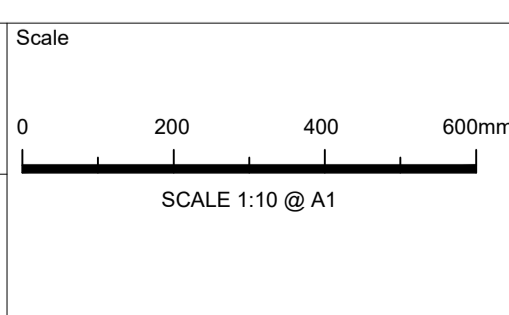
1. FILTER CLOTH TO BE FASTENED SECURELY TO POSTS WITH GALVANISED WIRE TIES, STAPLES OR ATTACHMENT BELTS.
2. POSTS SHOULD NOT BE SPACED MORE THAN 3.0m APART.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY 150mm AND FOLDED.
4. FOR EXTRA STRENGTH TO SILT FENCE, WOVEN WIRE (14mm GAUGE, 150mm MESH SPACING) TO BE FASTENED SECURELY BETWEEN FILTER CLOTH AND POSTS BY WIRE TIES OR STAPLES
5. INSPECTIONS SHALL BE PROVIDED ON A REGULAR BASIS ESPECIALLY AFTER RAINFALL AND EXCESSIVE SILT DEPOSITS REMOVED WHEN 'BULGES' DEVELOP IN SILT FENCE
6. SEDIMENT FENCES SHALL BE CONSTRUCTED WITH SEDIMENT TRAPS AND EMERGENCY SPILLWAYS AT SPACINGS NO GREATER THAN 40m ON FLAT TERRAIN DECREASING TO 20m SPACINGS ON STEEP TERRAIN.

**NOT FOR CONSTRUCTION**

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abn: 90 616 216 196

Client  
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Certification By:  
*Anthony Hasham*  
**Anthony Hasham**

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Project  
**118-120 STATION STREET, PENRITH PROPOSED MIXED USE DEVELOPMENT STORMWATER CONCEPT PLANS DEVELOPMENT APPLICATION**

Drawing Title		Scale	A1	Project No.	Dwg No.	Issue
<b>MISCELLANEOUS DETAILS SHEET</b>		As Shown		200763	107	C

Proposed Six (6) Storey Mixed Use  
Development comprising Two (2)  
Commercial/Retail Tenancies and Eighteen  
(18) Residential Apartments (including five (5)  
affordable rental housing apartments), and  
Basement Parking for Thirty Two (32) Cars,  
under State Environmental Planning Policy  
(Affordable Rental Housing) 2009

# Statement of Environmental Effects

Nos. 118-120 Station Street, Penrith

November 2020



**Construction of a Six (6) Storey Mixed Use Development comprising two (2) Commercial/Retail Tenancies, Eighteen (18) Residential Apartments (including Five (5) affordable rental housing apartments) and Basement Parking for Thirty Two (32) cars, under *State Environmental Planning Policy (Affordable Rental Housing) 2009***

**Nos. 118-120 Station Street, Penrith  
Development Application**

November 2020

**Document History & Status**

Revision	Date Issued	Description	Prepared By
01	26/11/2020	Issued for DA	AR

This document has been prepared by Andrew Robinson Planning Services Pty Ltd solely for use by Jim Aitken + Partners (the client) as part of a development application submission to Penrith City Council. With the exception of its intended use to inform the development assessment process, Andrew Robinson Planning Services accepts no responsibility for its use by other parties.

# TABLE OF CONTENTS

<b>1</b>	<b>Introduction</b>	<b>1</b>
1.1	Type of Development	1
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<b>2</b>	<b>The Subject Site</b>	<b>3</b>
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## 1 Introduction

This report has been prepared by Andrew Robinson Planning Services Pty Ltd on behalf of Jim Aitken + Partners to accompany a development application to Penrith City Council for construction of a six (6) storey mixed use development at No. 118-120 Station Street, Penrith.

The report constitutes a Statement of Environmental Effect and examines the proposed development in terms of its compliance with the heads of consideration under Section 4.15 of the *Environmental Planning and Assessment Act 1979*.

The site is located on the south-western corner of Station Street and Reserve Street in Penrith and is currently vacant.

The proposed mixed use building will realise a built form that will make a significant contribution to the streetscape character and appearance, commensurate with the Mixed Use zoning and anticipated future character of the area.

The proposed six (6) storey mixed use development comprises:

- 2 commercial/retail tenancies
- 18 residential apartments
- 32 parking spaces over two (2) basement levels

The proposed development incorporates an affordable rental housing component and as such, seeks to rely on the relevant provisions of *State Environmental Planning Policy (Affordable Rental Housing) 2009* (ARH SEPP), under which a floor space ratio bonus incentive is available. In this regard, five (5) of the residential apartments are nominated as affordable rental housing, comprising 20.6% of the overall GFA and therefore making available a 0.2:1 FSR bonus incentive, based on the formula set out at Clause 13 of the ARH SEPP.

The proposed development seeks to vary some of the applicable development controls under Penrith Development Control Plan 2014 (refer to the Compliance Table in Section 4 of this Statement).

The planning merits of the proposal are discussed in the body of the Statement and it is considered that despite the non-compliances, the proposed development meets the intent of both the LEP and the DCP and is worthy of Council's support.

This Statement of Environmental Effects should be read in conjunction with the architectural drawings and other associated documentation that accompanies the application, as detailed at 1.3 below.

### 1.1 Type of Development

The proposal constitutes *local development* under Part 4 of the *Environmental Planning and Assessment Act 1979*.

### 1.2 Consent Authority

The proposed development has a capital investment value (CIV) less than \$20 million (refer to the Registered Quantity Surveyors Report submitted with the application). Accordingly, the consent authority is Penrith City Council, through the Penrith Local Planning Panel.

### 1.3 Specialist Studies

This report has been prepared with the assistance of a number of specialist consultants, as follows:

Freeburn Surveying	Survey Plan	<b>Separate Attachment</b>
Architecture Design Studio (NSW) Pty Ltd	Architectural Drawings	<b>Separate Attachment</b>
Architecture Design Studio (NSW) Pty Ltd	SEPP 65 Design Verification Statement & Design Quality Principles Report	<b>Separate Attachment</b>
Motion Traffic Engineers Pty Ltd	Traffic and Parking Assessment	<b>Separate Attachment</b>
Acoustic Noise & Vibration Solutions Pty Ltd	Acoustic Report	<b>Separate Attachment</b>
Eco Certifiers Pty Ltd	BASIX Certificate	<b>Separate Attachment</b>
Architecture Design Studio (NSW) Pty Ltd	Waste Management Plan	<b>Separate Attachment</b>
Zenith Landscape Designs	Landscape Plan	<b>Separate Attachment</b>
Australian Geotechnical	Preliminary Site Investigation	<b>Separate Attachment</b>
Morrow Geotechnics Pty Ltd	Geotechnical Investigation Report	<b>Separate Attachment</b>
Design Right Consulting	Access Report	<b>Separate Attachment</b>
Design Right Consulting	BCA Report	<b>Separate Attachment</b>
Alpha Engineering & Development	Overland Flood Study & Flood Impact Report	<b>Separate Attachment</b>
Australian Consulting Engineers Pty Ltd	Stormwater Concept Plans	<b>Separate Attachment</b>
QPC&C Pty Limited	Registered QS Cost Report	<b>Separate Attachment</b>

### 1.4 Pre-lodgement Consultation

Prior to lodgement, the proposed redevelopment of the site was subject to a Pre-lodgement meeting held on 17 March 2020. Following the meeting, written feedback was provided by Council dated 25 May 2020.

The advice provide by Council indicated that the proposal was not supportable as it did not achieve an acceptable level of compliance with Council's *Local Environmental Plan 2010* and *Development Control Plan 2014*, *State Environmental Planning Policy No. 65 – Design Quality of Residential Apartment Development* and *State Environmental Planning Policy (Affordable Rental Housing) 2009*.

It was also noted that the site was constrained with respect to the ability to achieve an acceptable on-site waste collection arrangement.

The scheme to which consent is now sought has been redesigned to address a number of the issues raised in the Pre-lodgement advice. In particular, the feedback with respect to LEP design excellence requirements, SEPP 65/ADG compliance, local overland flow flood affectation and on-site waste collection arrangements have all been taken into consideration in the proposed development.

## 2 The Subject Site

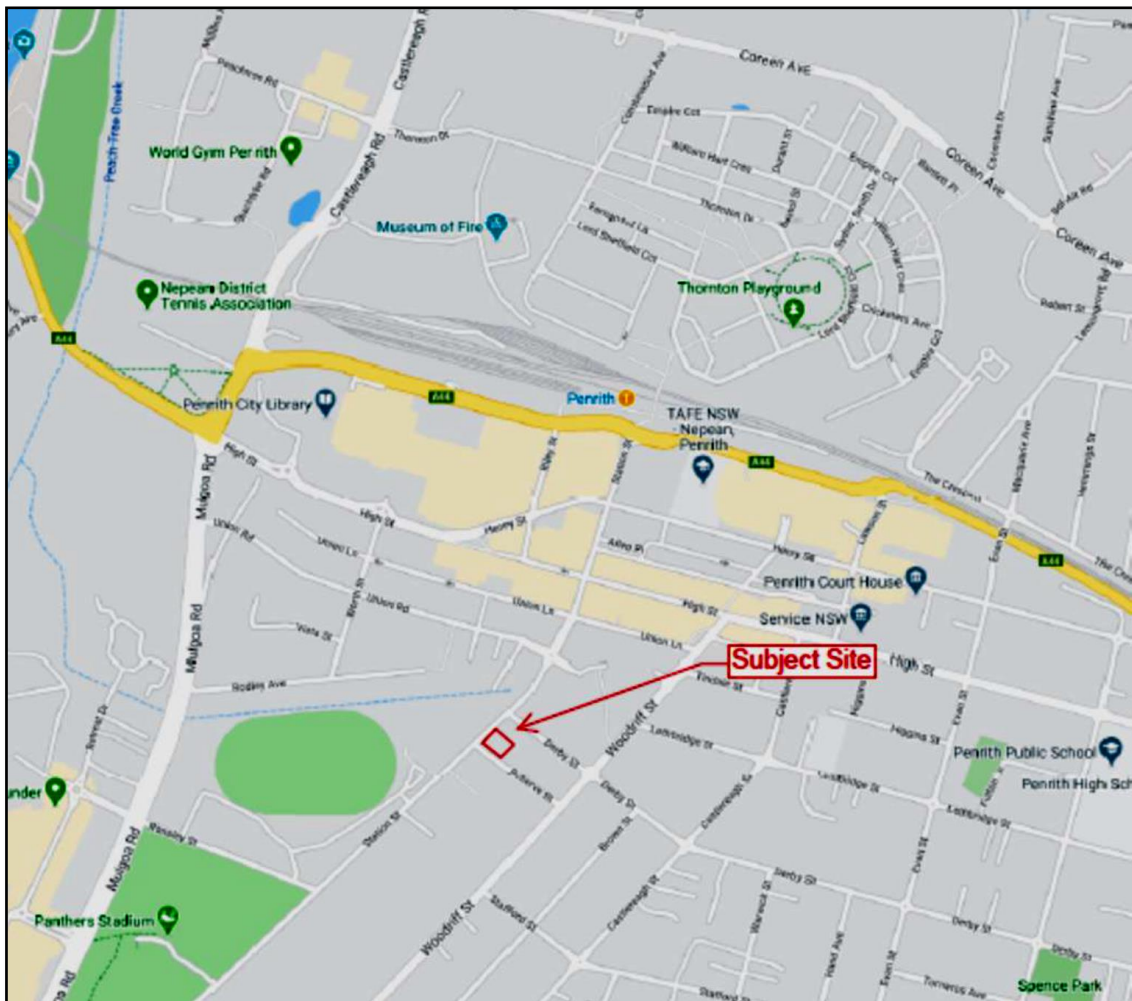
### 2.1 Location and Site Context

The site is located on the southern side of Station Street, at the intersection of Station and Reserve Streets at Penrith. The site is adjoined by a recently constructed seven (7) storey residential flat building and there is a single storey dual occupancy to the rear. The site is opposite the Penrith War Memorial Swimming Pool (Ripples complex) and to the west is the Nepean Village shopping centre.

The site is essentially rectangular, having a frontage of 30.48m to Station Street, a secondary frontage of 31.405m (by survey) to Reserve Street and a total area of 934.8m<sup>2</sup>.

The location of the site is shown in **Figure 1** below.

**Figure 1: Location Plan**



Source: nearmap.com.au

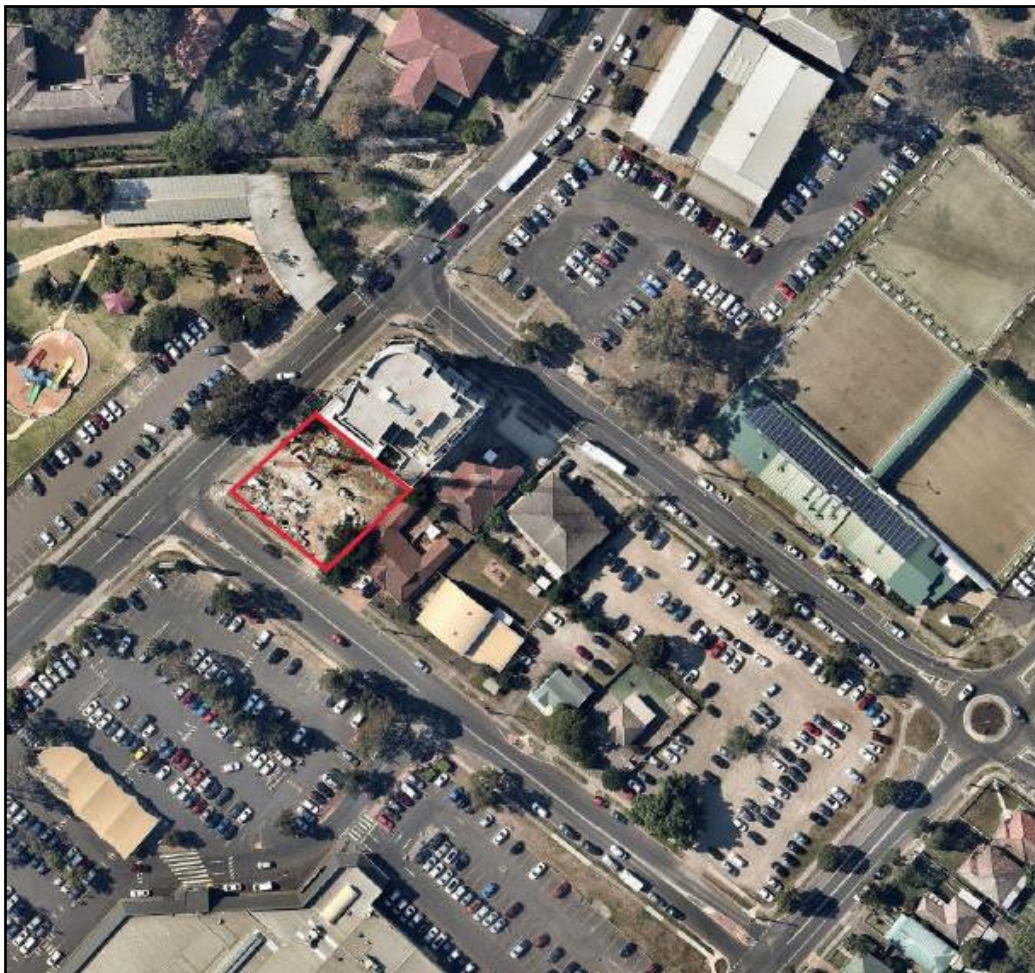
The site is located approximately 600km south of the Penrith City Centre and 50km west of the Sydney CBD and enjoys excellent access to a range of facilities and services, including:

- Westfield Penrith, Penrith Homemaker Centre, Joan Sutherland Performing Arts Centre, Sydney International Regatta Centre, Penrith Panthers & Panthers Stadium;
- local and regional recreational facilities – including numerous golf courses, parks and reserves;
- numerous schools and higher education facilities;
- health care facilities including Nepean Hospital; and
- employment centres – Penrith, Kingswood, Jamisontown and to the east, Parramatta and the Sydney CBD etc.

Public transport (bus) services are readily accessible, with the site being approximately 600m from the Penrith City Centre and 670m from Penrith Railway Station. The closest bus stops are located 70m to the west of the site on Station Street, outside the Ripples complex. There are other bus stops located within walking distance from the site on Derby Street to the east.

An aerial view of the site and surrounding area is provided in **Figure 2** below:

**Figure 2: Aerial Photo of the Site and Surrounds**



Source: [nearmap.com.au](http://nearmap.com.au)

## 2.2 Existing Condition

Formerly, the site was occupied by two single storey dwelling houses, and associated outbuildings. However, these have recently been demolished. The site is relatively level, with a very minor fall in a westerly direction towards the corner of Station and Reserve Streets.

The existing condition of the site is illustrated in the following photographs:



**Photograph 1:** View of the site looking from Station Street.



**Photograph 2:** View of the site looking from Reserve Street.



**Photograph 3:** View of the north-eastern side of the site looking from Station Street and showing the adjoining seven (7) storey residential flat building built to the common boundary at the ground floor level.

### 2.3 Legal Description and Zoning

The site comprises three (3) allotments. The legal description of the site is Lots 4 & 5, DP 112466 and Lot 6, DP 1003862.

A copy of the Survey Plan prepared by Freeburn Surveying is provided as part of the development application package.

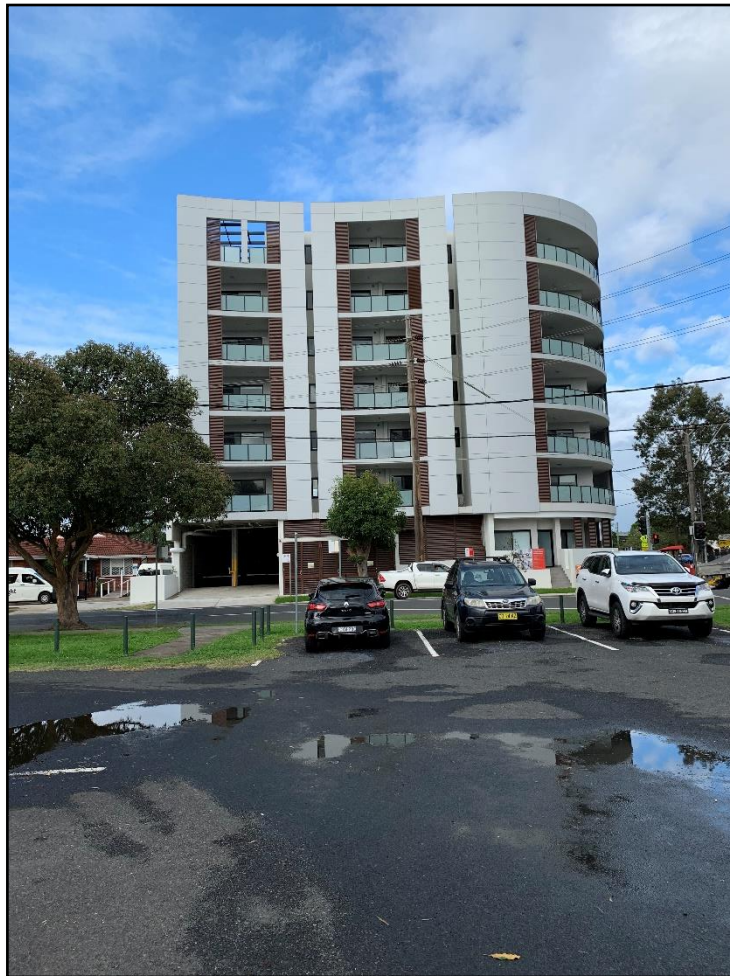
The site is zoned *B4 Mixed Use* under the provisions of *Penrith Local Environmental Plan 2010*. The *B4 Mixed Use* zone permits the proposed mixed use development with the consent of Council.

### 2.4 Land Uses in the Surrounding Area

The site is adjoined to the immediate north-east by a recently constructed seven (7) storey residential flat building that fronts both Station Street and Derby Street. To the immediate east is a single storey dual occupancy and then a two storey commercial building occupied by Family Planning NSW. To the south-west is an open car parking area associated with Nepean Village Shopping Mall and to the north west is a small at-grade public carpark and the War Memorial Swimming Pool / Ripples Penrith complex.

The surrounding built form and character is varied and comprises residential, commercial and recreational land uses. There are also large areas of 'unbuilt upon' land in the immediate vicinity due to the open car parking areas, Ripples complex and Aneldriva Park. However, it is noted that beyond these sites, the built form and character will change to that of a more medium to high density residential/mixed use setting as properties in the locality are redeveloped commensurate with the current zonings.

The following photographs illustrate the surrounding streetscape, built form and character surrounding the site:



**Photograph 4:** View looking south-west towards Derby Street and the recently constructed seven (7) storey residential flat building that adjoins the site.



**Photo 5:** View from Reserve Street of the adjoining single storey dual occupancy.



**Photo 6:** View looking from the site across Reserve Street to the Nepean Village Shopping Mall and carparking.



**Photo 7:** View looking north-west across Station Street towards the War Memorial Swimming Pool / Ripples Complex.

## 2.5 Utility Services

Utility services, including water, electricity, sewer and telecommunications are currently available to the site. The applicant's services consultant will be consulting with the various utility service providers in order to establish the location of existing services and determine the likely requirements that each utility provider might have as a consequence of the proposed development.

## 2.6 Site Topography

The site is relatively level, with a very minor fall in a westerly direction towards the corner of Station and Reserve Streets. Refer to the Survey Plan provided with the application for details on the site levels.

## 2.7 Views & Vistas

The proposed development is not likely to interrupt any significant existing views and vistas. However, there may be potential for district views afforded from the upper levels of the development.

## 2.8 Contamination

The site is currently vacant but was last used for low density residential purposes for many years. There is no visible evidence that the site may be contaminated or is unhealthy building land.

Notwithstanding, the application is accompanied by a Preliminary Site Investigation report prepared by Australian Geotechnical that provides details of investigations into the environmental condition of the site on the basis of historical land uses, anecdotal and documentary evidence of possible pollutant sources. The site inspection and desktop analysis revealed no evidence of any previous manufacturing uses, on-site storage of chemicals or site contamination incidents. Further, the site is free of any Statutory Notices issued by the NSW EPA and the site is not listed on the List of Contaminated Sites notified to the EPA.

A conceptual site model (CSM) was also prepared for the site that identified a low contamination risk on the site.

Based on these findings, it is considered unlikely that the site is contaminated and the risk to human health and the environment associated with groundwater and soil contamination is low. Notwithstanding, the report recommends that a targeted Environmental Site Assessment be prepared in order to address data gaps identified in Section 10.0 of the report and that this be undertaken in conjunction with a waste classification for off-site disposal of soil excavated for the proposed basement levels.

A copy of the Preliminary Site Investigation accompanies the application and should be referred to for further details in relation to the site investigations.

## 2.9 Site Access

Vehicular access to the site is currently available from both Station Street and Reserve Street, where there are existing laybacks. Pedestrian access is also available via the existing footpaths along Station Street and Reserve Street. A new two-way driveway is proposed on the south-western corner of the site off Reserve Street. This will provide vehicular access to the basement levels, as well as an at-grade on-site garbage collection area / loading and unloading area.

## 2.10 Existing Public Transport

The site is well located with respect to access to public transport, with bus stops serviced by several bus routes operating in close proximity to the site. The nearest bus stops are located approx. 80m to the west on Station Street, as well as approx. 80m to the north-east in Derby Street and Penrith Railway Station within reasonable (approx. 650m) walking distance from the site.

Blue Mountains Buses Network and Busways Penrith operate the following routes accessed from bus stops on Station Street and Derby Street:

- Route 689 (Blue Mountains Buses Network) provides a loop service between Penrith and Leonay.
- Route S13 (Busways Penrith) provides a loop service between Penrith and Mountainview Village.

Other routes available from Station Street include:

- Route 688 (Blue Mountains Buses Network) provides a loop service between Penrith and Emu Heights.
- Route 690P (Blue Mountains Buses Network) provides a service between Springwood and Penrith.
- Route 691 (Blue Mountains Buses Network) provides a service between Mount Riverview and Penrith.
- Route 781 (Busways Penrith) between St Marys and Penrith via Glenmore Park.
- Route 793 (Busways Penrith) provides a loop service between Penrith and Jamisontown.
- Route 795 (Busways Penrith) provides a service between Penrith and Warragamba.
- Route 797 (Busways Penrith) provides a loop service between Penrith and Glenmore Park.
- Route 799 (Busways Penrith) provides a service between Glenmore Park and Penrith via Regentville.

In addition to Routes 689 and S13, the following bus routes can be accessed at the bus stops on Derby Street:

- Route 770 (Busways Penrith) provides a service between Mount Druitt and Penrith via St Marys.
- Route 774 (Busways Penrith) provides a service between Mount Druitt and Penrith via Nepean Hospital.
- Route 775 (Busways Penrith) provides a service between Mount Druitt and Penrith via Erskine Park.
- Route 776 (Busways Penrith) provides a service between Mount Druitt and Penrith via St Clair.
- Route 791 (Busways Penrith) provides a loop service between Penrith and Jamisontown.
- Route 794 (Busways Penrith) provides a daily service between Glenmore Park and Penrith via The Northern Road.

The Sydney Trains network is accessed from Penrith Railway Station where the T1 Blue Mountains Rail Line provide regular services between Central and Bathurst, including Blacktown, Parramatta, the CBD, Katoomba, Lithgow and Western NSW. Connections to all other destinations covered by the Sydney Trains Network can be made at various stations on the T1 Blue Mountains Line. Rail services generally operate on a 15-20 minute headway in each direction. However, during weekday peak periods the services are often more frequent.

## 2.11 Heritage

The site is not listed as a Heritage Item and there are no heritage conservation areas or heritage items in the vicinity of the site that would potentially be impacted by the proposed development.

## 2.12 Flooding

The site is affected by local overland flow flooding as per Council's adopted Penrith CBD Overland Flow Flood Study. The information currently held by Council indicates that the 1% AEP water surface level affecting the site is estimated to be 27.6m AHD.

Accordingly, Council has advised that all plans for the site must provide levels and details to AHD and that:

- *The application must demonstrate that the development proposal is consistent with Council's Development Control Plan for Flood Liable Land;*
- *The application shall address the relevant flood clauses in Penrith LEP 2010 and flood related development controls Penrith DCP 2014;*
- *All habitable floor levels shall be a minimum RL 28.1m AHD (1% AEP water surface level + 0.5m freeboard); and*
- *The access ramp to the underground basement shall be at a minimum of RL 27.9m AHD (300mm above the 1% AEP water surface level).*

### 3 The Proposed Development

#### 3.1 General Description

##### Mixed Use Development

The proposed development comprises a six (6) storey mixed use development with a gross floor area (GFA) of 2,015.42m<sup>2</sup> comprising two (2) commercial/retail tenancies at ground level and eighteen (18) residential apartments. Car parking (32 spaces) is located over 2 basement levels. Vehicular access to the site is provided from Reserve Street at the south-western corner of the site, via a two-way driveway to the basement parking levels. In addition, an on-site waste collection area / loading & unloading area is provided at ground level, accessed via the same driveway.

The development includes eighteen (18) residential apartments across five (5) levels, with four (4) apartments on each of the first, second and third floor levels and three (3) apartments on each of the fourth and fifth floor levels.

Of the 18 residential apartments, two (2) of the 2 bedroom apartments on the first and second floor levels have been nominated as adaptable apartments. Each of these adaptable apartments have been allocated a compliant accessible car space in the basement levels. In addition, four (4) of the apartments are nominated as liveable apartments.

Seeking to rely on the relevant provisions of *State Environmental Planning Policy (Affordable Rental Housing) 2009*, five (5) of the apartments have been nominated as affordable rental housing apartments.

The table below illustrates the residential mix:

<b>Apartment Type</b>	<b>No. of Apts</b>
2 bedroom apartments	3 (16%)
2 bedroom adaptable apartments	2 (11%)
2 bedroom affordable apartments	1 (6%)
2 bedroom liveable apartments	1 (6%)
2 bedroom liveable / affordable apartments	3 (16%)
3 bedroom apartments	7 (39%)
3 bedroom affordable apartments	1 (6%)
<b>Total</b>	<b>18 (100%)</b>

The proposed apartment mix provides housing choice in the form of 2 and 3 bedroom apartments in various configurations within an established urban environment, close to shops, services and public transport nodes, commensurate with current local market conditions.

Car parking is provided over two (2) basement levels and comprises the following:

- 26 residential spaces (including 3 accessible spaces),
- 4 visitor spaces (including one space that doubles as a car wash),
- 2 commercial spaces (including 1 accessible space).

In addition, there are racks for 11 bicycles, spread across both basement levels.

A single lift car provides access between the basement levels, ground floor level and the residential floor levels above.

The drawing package prepared by Architecture Design Studio (NSW) Pty Ltd provides the design detail of the proposed development.

Provided below is a description of each floor level of the proposed development:

### **Drawing 1101 (Rev 05)**

#### *Lower Basement Plan:*

1. 17 resident parking spaces (incl. 2 accessible);
2. 2 x electric car charging stations;
3. 7 bicycle racks;
4. Individual resident storage areas;
5. Tank room; and
6. Lift core & fire stairs.

### **Drawing 1102 (Rev 05)**

#### *Upper Basement Plan:*

1. 9 resident parking spaces (incl. 1 accessible space);
2. 4 visitor parking spaces (incl. 1 doubling as a car wash bay);
3. 2 commercial parking spaces (incl. 1 accessible space);
4. 4 bicycle racks;
5. Individual resident storage areas;
6. Pump room; and
7. Lift core & fire stairs.

### **Drawing 1201 (Rev 05)**

#### *Ground Floor Plan:*

1. 135.12m<sup>2</sup> commercial tenancy;
2. 82.11m<sup>2</sup> commercial tenancy;
3. Residential lobby;
4. Residential, commercial and bulky goods waste and recycling storage rooms;
5. On-site waste and recycling collection area / loading & unloading area;
6. Booster pump cupboard;
7. Ramp to basement levels;
8. Landscaping; and
9. Lobby, lifts & fire stairs.

### **Drawing 1301 (Rev 04)**

#### *First Floor Plan:*

1. 1 x 2 bedroom adaptable apartment;
2. 1 x 2 bedroom liveable / affordable apartment;
3. 1 x 3 bedroom apartment;
4. 1 x 3 bedroom affordable apartment; and
5. Lobby, lift & fire stairs.

### **Drawing 1302 (Rev 04)**

#### *Second Floor Plan:*

1. 1 x 2 bedroom adaptable apartment;
2. 1 x 2 bedroom liveable / affordable apartment;

3. 2 x 3 bedroom apartments; and
4. Lobby, lift & fire stairs.

#### **Drawing 1303 (Rev 04)**

##### *Third Floor Plan:*

1. 1 x 2 bedroom liveable apartment;
2. 1 x 2 bedroom liveable / affordable apartment;
3. 2 x 3 bedroom apartments; and
4. Lobby, lift & fire stairs.

#### **Drawing 1304 (Rev 04)**

##### *Fourth Floor Plan:*

1. 1 x 2 bedroom apartment;
2. 1 x 2 bedroom affordable apartment;
3. 1 x 3 bedroom apartment; and
4. Lobby, lift & fire stairs.

#### **Drawing 1305 (Rev 04)**

##### *Fifth Floor Plan:*

1. 2 x 2 bedroom apartments;
2. 1 x 3 bedroom apartment; and
3. Lobby, lift & fire stairs.

#### **Drawing 1306 (Rev 04)**

##### *Sixth Floor Plan:*

1. Communal open space; and
2. Lobby, lift & fire stairs.

### **3.2 Design Philosophy**

The key design features of the development may be summarised as follows:

- the height, scale and form of the development falls within the building envelope controls anticipated under Penrith LEP 2010;
- the design considers aspect, solar access and cross ventilation to ensure the need for mechanical heating and cooling is kept to a minimum;
- the development carefully interfaces and considers its relationship with development on the adjacent lots, the anticipated surrounding built form and natural landscape;
- a range of ESD initiatives are to be incorporated in order to minimise the demand on resources and energy.

### **3.3 Scale**

The building has been designed so as to fit comfortably into the overall scale of the anticipated future built form in this location. The surrounding streetscape character and built form consists of a mixture of built forms and building heights and there is no dominant scale or character. Notwithstanding, the area is undergoing a transition to a higher built form such that the height, bulk and scale of the proposed

development will be well suited to this future context and will make a positive contribution to the streetscape character and urban form and scale.

### 3.4 Landscape Treatment

The landscape concept for the proposed development is to provide a relatively low maintenance, yet engaging and attractive landscape setting for both the public and private domain of the development.

The above description should be read in conjunction with the landscape plan prepared by Zenith Landscape Designs that accompanies the application.

### 3.5 Materials and Finishes

The building will be constructed using a combination of rendered and painted concrete, feature sandstone cladding, brickwork, aluminium cladding, decorative vertical aluminium louvres, aluminium frames windows and doors and clear glass balustrades. These materials and finishes have been selected for their combination of environmental sustainability, low maintenance and weathering qualities.

The materials and finishes key prepared by Architecture Design Studio Pty Ltd and contained in the architectural drawing package / SEPP 65 Design Quality Statement illustrates the proposed external material, finishes and colour palette.

### 3.6 ESD Design Initiatives

A range of design initiatives and elements have been employed to ensure the proposed development optimises its sustainability. These features are summarised as follows:

- wall & roof insulation;
- installation of water efficient fixtures and fittings;
- water efficient design;
- gas instantaneous (3 star) hot water systems for all residential apartments;
- cross ventilation;
- gas cook-tops and electric ovens for all residential apartments;
- energy efficient lighting and appliances;
- single phase air conditioning systems for all residential apartments;
- central rainwater storage tank for laundry (washing machine cold water tap) connection;
- low maintenance, drought tolerant planting.

A BASIX Certificate (No. 1132998M\_02) outlining the ESD initiatives is provided with the application documentation.

### 3.7 Access

The proposed development nominates two (2) apartments as adaptable apartments, including 1 x 2 bedroom apartment on the first floor level and 1 x 2 bedroom apartment on the second floor level. Each apartment has been allocated an accessible parking space in the basement levels.

The application is accompanied by an Access Report prepared by Design Right Consulting that makes an assessment of the proposed development having regard to the relevant deemed-to-satisfy requirements of the BCA/NCC 2019 (Amendment 1), Disability (Access to Premises - Building) Standards 2010, AS 1428.1-2009 Design for Access and Mobility Part 1 – General requirements for access – New building work, AS 4299-1995 - Adaptable Housing and General Best Practice access requirements and AS 2890.6-2009 – Parking Facilities Part 6 – Off street parking for people with disabilities.

The Access Assessment Report identifies some minor non-compliances with the deemed-to-satisfy provisions of the NCC 2019 / BCA, however, acknowledges that these can be readily addressed through minor design changes or through the performance based solutions recommended in the Access Report.

As such it is considered that subject to minor design changes or the satisfactory implementation of performance based solutions, the proposed development will provide the required layout and facilities to enable the building to be used by all people, in a self-sufficient, equitable, dignified and amenable way.

### **3.8 Stormwater Management**

Australian Consulting Engineers has provided Stormwater Concept Plans for the proposed development.

The concept plans demonstrate that the OSD system, rainwater re-use and stormwater drainage system can be designed to conform to the requirements of Council's stormwater management requirements.

### **3.9 Social Dimensions**

As described earlier at 3.1, the mixed use development provides a range of apartment layouts and types to accommodate occupants from singles to couples, families, the elderly and people with a disability.

### **3.10 Aesthetics**

A high quality architectural design and character is proposed. Durable materials and enduring details with variation in scale and proportion appropriate to the context of the site will give the development a distinct character commensurate with the anticipated built form and urban character.

### **3.11 Safety & Security**

Each of the commercial tenancies will be secured by lock and key. Access to the residential apartments will be controlled via an intercom system, with each residential unit being provided with an intercom to the residential lobby. The lift will be operated using a swipe card / security 'key' or similar that will only allow residents and their visitors to access to the residential floors.

### **3.12 Construction Phase**

Construction of the proposed development will be undertaken in accordance with EPA and WorkCover Authority guidelines to ensure that minimal impacts occur to nearby premises and their occupants and that the safety of workers is afforded the highest continued priority.

The successful building contractor will be required to prepare a Construction Management Plan that outlines the procedures that will need to be implemented in order to manage the possible impact of construction activities on the surrounding area. Typical details for inclusion in a Construction Management Plan are:

- materials storage and handling;
- site facilities – offices, amenities etc;
- the methodology for managing pedestrian and vehicular traffic;
- excavation;
- soil and water management;
- waste management (construction);
- air quality management;

- noise management; and
- occupational health and safety.

The Construction Management Plan will be consistent with current industry best practice and any Council requirements.

### **3.13 Erosion & Sediment Control Management**

The successful building contractor will be required to prepare an Erosion & Sediment Control Management Plan that outlines the procedures that will need to be implemented in order to manage the possible impact of erosion hazard and stormwater pollution from sediment during the excavation and construction phase. The erosion and sediment controls will be put in place prior to works commencing on the site and will be maintained (as necessary) throughout the course of construction. The Erosion & Sediment Control Management Plan should include, but not be limited to, the following information:

- the property boundaries;
- existing and final contours;
- existing and final overland flow drainage paths;
- the location of a stabilised entry/exit point (rumble pad);
- the location of soil and sand stockpiles;
- the location of all proposed temporary drainage control measures;
- the location of all proposed erosion control measures (alternatively, use notes to describe locations) including installation sequence and maintenance requirements;
- details of any permanent site stabilisation measures; and
- a statement of who is responsible for establishing and maintaining all erosion and sediment measures.

## 4 Statutory Planning Framework and Compliance

The following Environmental Planning Instruments and Development Control Plan apply to the site:

- *Environmental Planning & Assessment Act, 1979*
- *State Environmental Planning Policy No. 55 – Remediation of Land*
- *State Environmental Planning Policy No. 65 – Design Quality of Residential Flat Development*
- *State Environmental Planning Policy (Building Sustainability Index) 2004*
- *State Environmental Planning Policy (Affordable Rental Housing) 2009*
- *SREP No. 20 – Hawkesbury-Nepean River (No. 2 – 1997)*
- *Draft State Environmental Planning Policy (Environment) 2017*
- *Penrith Local Environmental Plan 2010*
- *Penrith Development Control Plan 2014*
- *Draft Penrith Local Environmental Plan 2010 (Phase 1 Review of LEP 2010)*
- *Draft Housekeeping Amendment - Penrith Development Control Plan 2014*

A discussion on the relevant provisions of the Environmental Planning Instruments and Development Control Plans listed above is provided below:

### 4.1 Environmental Planning and Assessment Act 1979

The matters that are required to be considered when determining development applications are set out in Section 4.15 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). An assessment of the proposal against these matters is provided below and in Section 5 of this Statement.

### 4.2 State Environmental Planning Instruments

#### 4.2.1 State Environmental Planning Policy No. 55 – Remediation of Land

The intent of *State Environmental Planning Policy No. 55 – Remediation of Land* (SEPP 55) is to provide a consistent approach to the remediation of land across the State by specifying certain matters that consent authorities must consider when determining development applications on land which is potentially contaminated.

Under the provisions of Clause 7 of SEPP 55 the consent authority must not consent to the carrying out of any development on land unless it has considered whether the land is contaminated. If the land is found to be contaminated, the consent authority must be satisfied that the land is suitable in its contaminated state or can and will be remediated in order for it to be suitable for the purpose for which the development is proposed.

The application is accompanied by a Preliminary Site Investigation Report prepared by Australian Geotechnical that provides details of investigations into the environmental condition of the site on the basis of historical land uses, anecdotal and documentary evidence of possible pollutant sources. The site inspection and desktop analysis revealed no evidence of any previous manufacturing uses, on-site storage of chemicals or site contamination incidents. Further, the site is free of any Statutory Notices issued by the NSW EPA and the site is not listed on the List of Contaminated Sites notified to the EPA.

A conceptual site model (CSM) was also prepared for the site that identified a low contamination risk on the site.

Based on these findings, it is considered unlikely that the site is contaminated and the risk to human health and the environment associated with groundwater and soil contamination is low. Notwithstanding, the report recommends that a targeted Environmental Site Assessment be prepared in order to address data gaps identified in Section 10.0 of the report and that this be undertaken in conjunction with a waste classification for off-site disposal of soil excavated for the proposed basement levels.

A copy of the Preliminary Site Investigation accompanies the application and should be referred to for further details in relation to the site investigations.

Having regard to the above, it is considered that the site is suitable for the proposed use without the need for remediation and/or validation and Council can be satisfied that its obligations under the SEPP have been met.

#### **4.2.2 State Environmental Planning Policy No. 65 – Design Quality of Residential Flat Development**

*State Environmental Planning Policy No. 65 – Design Quality of Residential Flat Buildings* (SEPP 65) is part of a suite of documents developed by the State Government in an effort to improve the quality of design in residential flat buildings. The Policy recognises that the design quality of residential flat development is of significance for environmental planning for the State due to the economic, environmental, cultural and social benefits of high quality design.

The Policy identifies 9 quality design principles which are applied by consent authorities in determining development applications for residential flat buildings. The design principles do not generate design solutions, but provide a guide to achieving good design and the means of evaluating the merits of the proposed solutions.

The proposed development has been designed having regard to the nine (9) design quality principles contained in Part 2 of SEPP 65. Architecture Design Studio (NSW) Pty Ltd has prepared a Design Quality Report that addresses each of the 9 design quality criteria. This report is included in the documents submitted with the application and demonstrates that the proposed development is of a high design quality.

As required, a SEPP 65 Design Verification Statement has also been prepared by Architecture Design Studio (NSW) Pty Ltd and is provided with the SEPP 65 Design Quality Statement.

The design of the residential component of the development has embraced the SEPP 65 design quality principles and will provide a high quality amenity for future residents.

An assessment of the proposed development against the relevant sections of the Apartment Design Guide (ADG) has also been prepared by Architecture Design Studio (NSW) Pty Ltd and demonstrates that the proposal will perform adequately in relation to the design requirements under the ADG.

It is noted that Clause 6A of the SEPP states that provisions of a Development Control Plan have no effect where they relate to the objectives, design criteria and design guidance contained within Parts 3 and 4 of the ADG for the following:

- (a) visual privacy,
- (b) solar and daylight access,
- (c) common circulation and spaces,
- (d) apartment size and layout,
- (e) ceiling heights,
- (f) private open space and balconies,
- (g) natural ventilation,
- (h) storage

In addition, subclause 30(1) of the SEPP states that a Development Consent cannot be refused if the proposed development complies with the design criteria contained within Parts 3 and 4 of the ADG relating to car parking, internal apartment area and ceiling heights.

#### 4.2.3 State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004

*State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004* (SEPP BASIX) came into force on 1 July 2004 and has been progressively implemented to the various types of residential development. The intent of the BASIX SEPP is to encourage sustainable residential development by requiring applicants to make commitments to incorporating sustainable design / building techniques in order to achieve more water and energy efficient residential buildings.

BASIX is an on-line program that assesses a residential dwelling against water, thermal comfort and energy reduction targets. Designs must meet these targets before a BASIX Certificate can be issued. Commitments made during the BASIX assessment process must be shown on plans and adhered to during construction.

A BASIX Certificate (No. 1132998M\_02) has been submitted with the application and demonstrates that the proposed development meets the required water, thermal comfort and energy targets. The BASIX Commitments specified in the BASIX Certificate and nominated on the architectural drawings will be incorporated into the construction and fit-out of the development. As such, Council can be satisfied that the sustainability obligations under the SEPP have been met.

#### 4.2.4 State Environmental Planning Policy (Affordable Rental Housing) 2009

*State Environmental Planning Policy (Affordable Rental Housing) 2009* (ARH SEPP) came into force in July 2009 and, to the extent that it applies to this site, aims to:

- (a) *provide a consistent planning regime for the provision of affordable rental housing; and*
- (b) *to facilitate the effective delivery of new affordable rental housing by providing incentives by way of expanded zoning permissibility, floor space ratio bonuses and non-discretionary development standards.*

One of the key incentives of the ARH SEPP involves opportunities for new developments to realise a higher floor space ratio (FSR) than would normally be permitted, if there was a commitment to use part of the development for affordable rental housing for a period of at least ten (10) years.

Division 1 of the ARH SEPP applies to in-fill affordable housing and sets out the criteria under which in-fill affordable housing is permitted and **Clause 10** nominates the types of development to which the affordable housing criteria apply. Clause 10 is reproduced below:

##### **10 Development to which Division applies**

- (1) *This Division applies to development for the purposes of dual occupancies, multi dwelling housing or residential flat buildings if:*
  - (a) *the development concerned is permitted with consent under another environmental planning instrument, and (b) the development is on land that does not contain a heritage item that is identified in an environmental planning instrument, or an interim heritage order or on the State Heritage Register under the Heritage Act 1977.*
- (2) *Despite subclause (1), this Division does not apply to development on land in the Sydney region unless all or part of the development is within an accessible area.*
- (3) *Despite subclause (1), this Division does not apply to development on land that is not in the Sydney region unless all or part of the development is within 400 metres walking distance of land within Zone*

*B2 Local Centre or Zone B4 Mixed Use, or within a land use zone that is equivalent to any of those zones.*

The residential component of the proposed mixed use development comprises a residential flat building and the site at Nos. 118-120 Station Street will meet the above criteria as follows:

- Residential flat development (as a component of mixed use development) is permitted in the B4 Mixed Use zone under Penrith LEP 2010 (cl. 10(1)(a)).
- The site does not contain a Heritage Item (cl. 10(1)(b)).
- The site is located within an accessible area (i.e. within 800m walking distance of a public entrance to Penrith Railway Station) (cl. 10(2)).

In relation to subclause 10(2) above, an accessible area is defined as being:

**accessible area** means land that is within:

- (a) 800 metres walking distance of a public entrance to a railway station or a wharf from which a Sydney Ferries ferry service operates, or
- (b) 400 metres walking distance of a public entrance to a light rail station or, in the case of a light rail station with no entrance, 400 metres walking distance of a platform of the light rail station, or
- (c) 400 metres walking distance of a bus stop used by a regular bus service (within the meaning of the Passenger Transport Act 1990) that has at least one bus per hour servicing the bus stop between 06.00 and 21.00 each day from Monday to Friday (both days inclusive) and between 08.00 and 18.00 on each Saturday and Sunday.

**Comment:** The site is located less than 800m from the entrance to Penrith Railway Station. In addition, as described earlier, there are bus stops located within 80m of the site in both Station Street and Derby Street that provide access to a range of bus routes that provide regular bus services (notwithstanding that not all routes will be serviced by an hourly service between the nominated hours).

**Clause 13** of the ARH SEPP sets out the floor space ratio incentives that are available to development where the percentage of the gross floor area to be used as affordable housing is at least 20%.

Where the existing maximum floor space ratio for any form of residential accommodation permitted on the land is 2.5:1 or less, the following provisions apply:

- (i) 0.5:1—if the percentage of the gross floor area of the development that is used for affordable housing is 50 per cent or higher, or
- (ii) Y:1—if the percentage of the gross floor area of the development that is used for affordable housing is less than 50 per cent, where:

**AH** is the percentage of the gross floor area of the development that is used for affordable housing.

$$Y = AH \div 100$$

The proposed development seeks to utilise this FSR bonus incentive to realise a FSR of greater than the 2:1 prescribed under Clause 4.4 of Penrith LEP and five (5) of the residential apartments have been nominated as affordable rental housing apartments. This equates to 416.97m<sup>2</sup>, or 20.6% of the GFA of the development.

Therefore, based on the formula above, a FSR bonus of 0.2:1 is available where 20% of the gross floor area of the development is to be used for affordable housing. This increases the maximum allowable FSR from 2:1 to 2.2:1.

The proposed FSR of 2.16:1 therefore complies with Clause 13 of the ARH SEPP.

**Clause 14** of the SEPP sets out a number of standards that cannot be used as grounds to refuse an application for an in-fill affordable rental housing development.

**Clause 15** of the SEPP requires a consent authority to take into consideration the provisions of the Seniors Living Policy.

**Clause 16** of the SEPP requires a consent authority to take into consideration whether the design of the development is compatible with the character of the local area.

An assessment of the proposed development against the relevant provisions of Division 1 In-fill affordable rental housing of the ARH SEPP is provided in the Table below:

Clause	Comment	Compliance
<p><b>Cl. 10 Development to which Division applies:</b></p> <p>(1) This Division applies to development for the purposes of dual occupancies, multi-dwelling housing or residential flat buildings if:</p> <p>(a) the development concerned is permitted with consent under another environmental planning instrument, and</p> <p>(b) the development is on land that does not contain a heritage item that is identified in an environmental planning instrument, or an interim heritage order or on the State Heritage Register under the Heritage Act 1977.</p> <p>(2) Despite subclause (1), this Division does not apply to a development on land in the Sydney region unless all or part of the development site is within an accessible area.</p>	<p>The residential component of the proposed mixed use development constitutes a residential flat building.</p> <p>The site is Zoned B4 Mixed Use under Penrith LEP 2010 and residential flat buildings are permissible with consent within the zone.</p> <p>The land does not contain a heritage item.</p> <p>The land is within an accessible area, as it is within 800m (670m) walking distance of Penrith Railway Station.</p>	<p>Yes</p> <p>Yes</p>
<p><b>Cl. 13 Floor space ratios</b></p> <p>(1) This clause applies to development to which this Division applies if the percentage of the gross floor area of the development that is to be used for the purposes of affordable housing is at least 20 per cent.</p> <p>(2) The maximum floor space ratio for the development to which this clause applies is the existing maximum floor space ratio for any form of residential accommodation permitted on the land on which the development is to occur, plus:</p> <p>(a) if the existing maximum floor space ratio is 2.5:1 or less:</p> <p>(i) 0.5:1—if the percentage of the gross floor area of the development that is</p>	<p>20.6% (5 apartments) of the developments GFA are nominated for affordable rental housing.</p> <p>The prescribed maximum floor space ratio under the LEP is 2:1. However, with 20.6% of the GFA nominated as affordable rental housing, a maximum FSR of 1.2:1 can be achieved.</p> <p>The proposed FSR is 1.16:1 and therefore complies.</p>	<p>Yes</p> <p>Yes</p>

<p>used for affordable housing is 50 per cent or higher.</p>		
<p><b>Cl. 14 Standards that cannot be used to refuse consent:</b></p> <p>(1) A consent authority must not refuse consent to development to which this Division applies on any of the following grounds:</p> <p>(a) (repealed)</p> <p>(b) site area: if the site area on which it is proposed to carry out the development is at least 450m<sup>2</sup>,</p> <p>(c) landscaped area: if at least 30% of the site area is to be landscaped,</p> <p>(d) deep soil zones: if, in relation to that part of the site that is not built on, paved or otherwise sealed:</p> <p>i. there is soil of a sufficient depth to support the growth of trees and shrubs on an area of not less than 15 per cent of the site area (the deep soil zone), and</p> <p>ii. each area forming part of the deep soil zone has a minimum dimension of 3 metres, and</p> <p>iii. if practicable, at least two-thirds of the deep soil zone is located at the rear of the site area,</p> <p>(e) solar access: if living rooms and private open spaces for a minimum of 70% of the dwellings receive a minimum of 3 hours direct sunlight between 9am and 3pm in mid-winter.</p> <p>(2) General</p> <p>A consent authority must not refuse consent to development to which this Division applies on any of the following grounds:</p> <p>(a) parking if:</p> <p>ii. at least 0.5 parking spaces are provided for each dwelling containing 1 bedroom, at least 1 parking space is provided for each dwelling containing 2 bedrooms and at least 1.5 parking spaces are provided for each dwelling containing 3 or more dwellings.</p>	<p>The site area is 934.8m<sup>2</sup>.</p> <p>30.55% of the site is to be landscaped.</p> <p>The proposed development includes a total deep soil zone of 105.91m<sup>2</sup>, which is equivalent to 11.3% of the site area.</p> <p>The area of the deep soil zone has been calculated only utilising areas with dimensions of 3m or greater.</p> <p>Two thirds of the deep soil provided for the site is 70.6m<sup>2</sup>. However, the deep soil area is distributed around the perimeters of the site and it is not practical to locate two-thirds at the rear of the site given the configuration.</p> <p>All 18 (100%) apartments will receive a minimum of 3 hours of direct sunlight between 9am and 3pm in mid-winter.</p> <p>Based on these rates a minimum of 5.5 car spaces are required for the 5 affordable rental housing dwellings. Each 2 bedroom ARH apartment is provided with 1 parking space and the 3 bedroom ARH apartment is provided with 2 parking spaces.</p>	<p>Yes</p> <p>Yes</p> <p>No</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>

<p>(b) dwelling size if each dwelling has a gross floor area of at least:</p> <ul style="list-style-type: none"> <li>i. 35m<sup>2</sup> in the case of a bedsitter or studio, or</li> <li>ii. 50m<sup>2</sup> in the case of a dwelling having 1 bedroom, or</li> <li>iii. 70m<sup>2</sup> in the case of a dwelling having 2 bedrooms, or</li> <li>iv. 95m<sup>2</sup> in the case of a dwelling having 3 or more bedrooms.</li> </ul> <p>(3) A consent authority may consent to development to which this Division applies whether or not the development complies with the standards set out in subclause (1) or (2).</p>	<p>The nominated ARH 2 bedroom apartments have floor areas of 76.05m<sup>2</sup> and 85.50m<sup>2</sup>.</p> <p>The nominated ARH 3 bedroom apartment has a floor area of 103.32m<sup>2</sup>.</p> <p>With the exception of the deep soil requirement, the development complies with the standards set out in subclause (1) &amp; (2).</p>	<p>Yes</p> <p>Noted</p>
<p><b>Cl. 15 Seniors Living Policy</b></p> <p>A consent authority must not consent to development to which this Division applies unless it has taken into consideration the provisions of the <i>Seniors Living Policy: Urban Design Guidelines for Infill Development</i>.</p>	<p>It is considered that the proposed development is consistent with the requirements of the Seniors Living Policy, in as much as it is relevant to the proposed development and is responsive to the existing and likely future context and built form.</p> <p>A Compliance Table providing an assessment of the requirements under the <i>Seniors Living Policy: Urban Design Guidelines for Infill Development</i> is provided below.</p>	<p>Yes</p>
<p><b>Cl. 16A Character of local area</b></p> <p>A consent authority must not consent to development to which this Division applies unless it has taken into consideration whether the design of the development is compatible with the character of the local area.</p>	<p>It is considered that the design, scale and appearance of the proposed development is compatible with the anticipated character of the local area, having regard to the existing built form and new development recently completed adjacent to the site. The proposed built form is similar to that which was recently approved on the adjoining site at Nos. 114-116 Station Street.</p> <p>The somewhat eclectic mix of existing built form in the immediate locality comprises a mix of a single storey dual occupancy, a 7 storey residential flat building, single and two storey commercial buildings and single and two storey dwellings. The proposed built form is considered to be compatible with the existing surrounding development and the character of the area.</p>	<p>Yes</p>

<p><b>Cl. 18 Subdivision</b></p> <p>Land on which development has been carried out under this Division may be subdivided with the consent of the consent authority.</p>	<p>Subdivision of the development is not being sought as part of this application.</p>	<p>Yes</p>
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### Seniors Living Policy: Urban Design Guidelines for Infill Development Compliance Table

Design Issues / Design Principles and Better Practices	Design Response / Comment
<p><b>1. Responding to Context</b></p>	
<p><b>Analysis of neighbourhood character</b></p>	
<p><b>Street layout and hierarchy</b> – has the surrounding pattern and hierarchy of the existing streets been taken into consideration? (e.g. scale and character of the built form, patterns of street planting, front setbacks, buildings heights).</p>	<p><b>Yes:</b> The six (6) storey scale is compatible with the scale of the existing residential flat building adjacent to the site.</p>
<p><b>Block and lots</b> – has an analysis of the surrounding block and lot layout been taken into consideration for local compatibility and development suitability? (e.g. lot size, shape, orientation).</p>	<p><b>Yes:</b> The proposed development represents an appropriate form of development that is compatible with the surrounding built form that comprises a mix of dwellings, dual occupancies, single and two storey commercial premises and a 7 storey residential flat building.</p>
<p><b>Built environment</b> – has a compatibility check been undertaken to determine if the proposed development is consistent with the neighbourhood's built form? (e.g. scale, massing, should particular streetscapes or building types be further developed or discouraged?)</p>	<p><b>Yes:</b> Residential flat development in the immediate area comprises a 7 storey residential flat building, together with single and two storey buildings on sites that are yet to be redeveloped. As such, the proposed 6 storey mixed use building is compatible with that which is anticipated commensurate with the mixed use zoning and anticipated residential density in the area.</p>
<p><b>Trees</b> – do trees and planting in the proposed development reflect trees and landscapes in the neighbourhood or street?</p>	<p><b>Yes:</b> Refer to the Landscape Plan submitted with the application. A comprehensive landscape scheme is proposed for the site and the new landscaping is typically selections of native groundcovers, shrubs and trees local to the area.</p>
<p><b>Policy environment</b> – has Council's own LEP and DCP been considered to identify key elements that contribute to an areas character? Does the proposed development respond this?</p>	<p><b>Yes:</b> The development responds to the key elements in the following policy documents:</p> <p><u>Penrith LEP 2010 – B4 Mixed Use Zoning Objectives:</u></p> <p>The specific aims of the LEP in relation to the B4 Mixed Use zone are:</p> <ul style="list-style-type: none"> <li>• <i>To provide a mixture of compatible land uses.</i></li> <li>• <i>To integrate suitable business, office, residential, retail and other development in accessible locations so as to maximise</i></li> </ul>

	<p><i>public transport patronage and encourage walking and cycling.</i></p> <ul style="list-style-type: none"> <li>• <i>To minimise conflict between land uses within the zone and land uses within adjoining zones.</i></li> <li>• <i>To create opportunities to improve public amenity.</i></li> <li>• <i>To provide a wide range of retail, business, office, residential, community and other suitable land uses.</i></li> </ul> <p>The proposed development is considered to be consistent with the objectives for the B4 zone as follows:</p> <ul style="list-style-type: none"> <li>• The development will provide additional commercial/retail floor space that will suit a range of commercial land uses and assist in facilitating ongoing economic growth of the Penrith City Centre.</li> <li>• The development will provide additional housing choice and diversity in the location, in a built form that is consistent and compatible with the likely future character of the area.</li> <li>• A high level of residential amenity will be achieved, with the design of the residential apartments having regard to the design quality principles set out in SEPP 65, as well as the objectives and design criteria set out in the ADG.</li> <li>• The site is located within walking distance of Penrith Railway Station and a number of bus stops, giving the site excellent access to the public transport network, as well as being accessible to the services and facilities provided in the Penrith City Centre.</li> </ul> <p><u>Penrith DCP 2014</u></p> <p>Part E11 – Part A - Penrith City Centre</p> <p>The site is located within the City South (Mixed Use) character area identified in Figure E11.2 – Penrith City Centre Character Areas of the DCP, where new development is to provide a high quality and active public domain interface.</p> <p>The proposed development is considered to be consistent with desired future character of the City South (Mixed Use) Precinct, providing a high quality and appearance mixed use development with access to shops and services, public transport, employment and recreational facilities.</p>
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Site analysis	
<p>Does the site analysis include:</p> <ul style="list-style-type: none"> <li>Existing streetscape elements and the existing pattern of development as perceived from the street.</li> <li>Patterns of driveways and vehicular crossings</li> <li>Existing vegetation and natural features on the site</li> <li>Existing pattern of buildings and open space on adjoining lots.</li> <li>Potential impact on privacy for, or overshadowing of, existing adjacent dwellings.</li> </ul>	<p><b>Yes:</b> Refer to the Site Analysis/Site Plan and Shadow Diagrams submitted with the application.</p>
2. Site Planning and Design	
Design principles and better practice	
<p><b>General:</b></p> <p>Does the site planning and design:</p> <ul style="list-style-type: none"> <li>Optimise internal amenity and minimise impacts on neighbours?</li> <li>Provide a mix of dwelling sizes and dwellings both with and without car parking?</li> <li>Provide variety in massing and scale of built form within the development?</li> </ul>	<p><b>Yes:</b> An acceptable level of internal amenity and privacy between neighbours will be achieved.</p> <p><b>Yes:</b> 10 x 2 bed &amp; 8 x 3 bed apartments = 18 apartments – 5 of which are nominated as ARH.</p> <p>32 on site car spaces provided (26 resident, 4 visitor and 2 commercial spaces).</p> <p><b>Yes:</b> The development provides a six (6) storey scale that together with the selected colours, materials and finishes provides for variety in the scale and massing of the development.</p>
<p><b>Built Form:</b></p> <p>Does the site planning and design:</p> <ul style="list-style-type: none"> <li>Locate the bulk of development towards the front of the site to maximise the number of dwellings with frontage to the public street</li> <li>Have developments more modest in scale towards the rear of the site to limit impacts on adjoining neighbours?</li> <li>Orientate dwellings to maximise solar access to living areas and private open space, and locate dwellings to buffer quiet areas within the development from noise?</li> </ul>	<p><b>Yes:</b> The majority of apartments face towards either the Station Street or Reserve Street frontages.</p> <p><b>Yes:</b> Living areas and private open spaces predominantly orientated towards the north-east and north west.</p>

<p><b>Trees, landscaping and deep soil zones:</b></p> <p>Does the site planning and design:</p> <ul style="list-style-type: none"> <li>• Retain trees and planting on the street and in front setbacks to minimise the impact of new development on the streetscape?</li> <li>• Retain trees and planting at the rear of the lot to minimise the impact of new development on neighbours and maintain the pattern of mid-block deep-soil planting?</li> <li>• Retain large or otherwise significant trees on other parts of the site through sensitive site planning?</li> <li>• Where not possible to retain existing trees, replace with new mature or semi-mature trees?</li> <li>• Increase the width of landscaped areas between driveways and boundary fences and between driveways and new dwellings?</li> <li>• Provide pedestrian paths?</li> <li>• Reduce the width of driveways?</li> <li>• Provide additional private open space above the minimum requirements?</li> <li>• Provide communal open space?</li> <li>• Increase front, rear and/or side setbacks?</li> <li>• Provide small landscaped areas between garages, dwellings entries, pedestrian paths, driveways etc.</li> <li>• Provide at least 10% of the site area, at the rear of the site, for deep soils zones to create a mid-block corridor of trees within the neighbourhood?</li> <li>• Replicate an existing pattern of deep soil planting on the front of the site?</li> <li>• Use semi-pervious materials for driveways, paths and other paved areas?</li> <li>• Use on-site detention to retain stormwater on site for re-use?</li> </ul>	<p><b>Yes:</b> There are no existing trees to be retained. However, a comprehensive landscape scheme is proposed for the site.</p> <p><b>No:</b> Refer to the above comment.</p> <p><b>No:</b> Refer to the above comment.</p> <p><b>Yes:</b> Refer to Landscape Plan submitted with the application for details.</p> <p><b>Yes:</b> There will be planting on all perimeters of the site.</p> <p><b>Yes:</b> A designated pedestrian pathway from Station Street to the main pedestrian entry is proposed.</p> <p><b>N/A:</b> Driveway width to Council's requirements.</p> <p><b>Yes:</b> Private open space in excess of minimum requirements is achieved for some apartments.</p> <p><b>Yes:</b> Located on the roof top (307.49m<sup>2</sup>).</p> <p><b>Yes:</b> The setbacks meet the ADG requirements.</p> <p><b>Yes:</b> Refer to the Landscape Plan submitted with the application for details.</p> <p><b>Yes:</b> The deep soil areas around the perimeter of the site will be planted with shade trees and hedging trees. Refer to the Landscape Plan.</p> <p><b>Yes:</b> Refer to the Landscape Plan for details.</p> <p><b>No:</b> Concrete is proposed for the driveway and pathways.</p> <p><b>Yes:</b> Refer to the Concept Stormwater Drainage Plans submitted with the application for OSD details.</p>
<p><b>Parking, garaging and vehicular circulation:</b></p> <p>Does the site planning and design:</p> <ul style="list-style-type: none"> <li>• Consider centralised parking in car courts to reduce the amount of space occupied by driveways, garages and approaches to garages?</li> <li>• Where possible, maintain existing crossings and driveway locations on the street?</li> </ul>	<p><b>Yes:</b> All on-site parking is contained within a two level basement, accessed by a single driveway.</p> <p><b>No:</b> The existing driveways are to be replaced by a new driveway off Reserve Street.</p>

3. Impacts on Streetscape	
Design principles and better practice	
<p><b>General:</b></p> <p>Does the site planning and design:</p> <ul style="list-style-type: none"> <li>• Sympathise with the building and existing streetscape patterns? (i.e. siting, height, separation, driveways locations, pedestrian entries etc.)</li> <li>• Provide a front setback that relates to adjoining development?</li> </ul>	<p><b>Yes:</b> The proposed development is considered to be compatible with the existing and likely future built form in the locality.</p> <p><b>Yes:</b> The front setback is compatible with the front setback of adjoining development.</p>
<p><b>Built Form:</b></p> <p>Does the site planning and design:</p> <ul style="list-style-type: none"> <li>• Break up the building massing and articulate building facades?</li> <li>• Allow breaks in rows of attached dwellings?</li> <li>• Use a variation in materials, colours and openings to order building facades with scale and proportions that respond to the desired contextual character?</li> <li>• Set back upper levels behind the front building facade?</li> <li>• Where it is common practice in the streetscape, locating second storeys within the roof space and using dormer windows to match the appearance of existing dwelling houses?</li> <li>• Reduce the apparent bulk and visual impact of the building by breaking down the roof into smaller roof elements?</li> <li>• Use a roof pitch sympathetic to that of existing buildings in the street?</li> <li>• Avoid uninterrupted building facades including large areas of painted render?</li> </ul>	<p><b>Yes:</b> Refer to the Elevations and Photomontages for details. The articulation is achieved through use of building mass and material selections.</p> <p><b>N/A.</b></p> <p><b>Yes:</b> Refer to the architectural drawings for details of colours and materials.</p> <p><b>Yes:</b> The use of varied materials and finishes across all levels achieves a break down in the scale of the building facade.</p> <p><b>N/A.</b> This is not common practice with the adjacent existing properties.</p> <p><b>Yes:</b> The bulk and visual impact of the roof is considered to be acceptable.</p> <p><b>Yes:</b> The proposed roof form is sympathetic to other roof forms in the vicinity.</p> <p><b>Yes:</b> No large sections of painted render are proposed.</p>
<p><b>Trees, landscaping and deep soil zones:</b></p> <p>Does the site planning and design:</p> <ul style="list-style-type: none"> <li>• Use new planting in the front setback and road reserve where it is not possible or not desirable to retain existing trees/planting?</li> <li>• Plant in front of front fences to reduce their impact and improve the quality of the public domain?</li> </ul>	<p><b>Yes:</b> Refer to the Landscape Plan for details.</p> <p><b>Yes:</b> Refer to the Landscape Plan for details.</p>

<p><b>Residential amenity:</b></p> <p>Does the site planning and design:</p> <ul style="list-style-type: none"> <li>Clearly design open space in the front setback as either private or communal open space?</li> <li>Define the threshold between public and private space by level change, change in materials, fencing, planting and/or signage?</li> <li>Design dwellings at the front of the site to address the street?</li> <li>Design pedestrian entries, where possible, directly off the street?</li> <li>Provide a pedestrian entry for rear residents that is separate from vehicular entries?</li> <li>Design front fences that provide privacy where necessary, but also allow for surveillance of the street?</li> <li>Ensure that new front fences have a consistent character with front fences in the street?</li> <li>Orientate mailboxes obliquely to the street to reduce visual clutter and the perception of multiple dwellings?</li> <li>Locate and treat garbage storage areas and switchboards so that their visual impact on the public domain is minimised?</li> </ul>	<p><b>Yes:</b> Common open space (landscaped setback) is proposed in the front setback.</p> <p><b>Yes:</b> Landscape planting is used to achieve definition between the threshold of private and public space.</p> <p><b>Yes:</b> Windows and private balconies address the street frontages to Station Street and Reserve Street.</p> <p><b>Yes:</b> The main pedestrian entry is directly off Station Street.</p> <p><b>Yes:</b> The main pedestrian entry is from Station Street, while the vehicular entry is from Reserve Street.</p> <p><b>N/A:</b> Front boundary fencing is not proposed.</p> <p><b>N/A:</b> Refer to the above comment.</p> <p><b>Yes:</b> The mail boxes will be concealed in a small alcove adjacent to the main pedestrian entry to the building off Station Street.</p> <p><b>Yes:</b> The garbage and recycling rooms are located at ground level, but are not visible from the public domain.</p>
<p><b>Parking, garaging and vehicular circulation:</b></p> <p>Does the site planning and design:</p> <ul style="list-style-type: none"> <li>Vary the alignment of driveways to avoid a 'gun barrel' effect?</li> <li>Set back garages behind the predominant building line to reduce their visibility from the street?</li> <li>Consider alternative site designs that avoid driveways running the length of the site?</li> <li>Terminate vistas with trees, vegetation, open space or a dwelling rather than garages or parking?</li> <li>Use planting to soften driveway edges?</li> <li>Vary the driveway surface material to break it up into a series of smaller spaces? (e.g. to delineate individual dwellings)</li> <li>Limit driveway widths on narrow sites to single carriage with passing points?</li> </ul>	<p><b>N/A:</b> A 'gun barrel' driveway is not proposed.</p> <p><b>N/A:</b> Basement parking is proposed.</p> <p><b>N/A:</b> A short driveway provides access to the basement parking.</p> <p><b>N/A:</b> Basement parking is proposed.</p> <p><b>Yes:</b> Refer Landscape Plan submitted with the application for details.</p> <p><b>N/A:</b> A short driveway provides access to the basement parking.</p> <p><b>N/A:</b> The site does not have a narrow frontage.</p>

<ul style="list-style-type: none"> <li>• Provide gates at the head of driveways to minimise visual 'pull' of the driveway?</li> <li>• Reduce the width where possible to single width driveways at the entry to basement car parking rather than double?</li> <li>• Locate the driveway entry to basement car parking to one side rather than the centre where it is visually prominent?</li> <li>• Recess the driveway entry to basement car parking from the main building facade?</li> <li>• Where a development has a secondary street frontage, provide vehicular access to basement car parking from the secondary street?</li> <li>• Provide security doors to basement car parking to avoid the appearance of a 'black hole' in the streetscape?</li> <li>• Return facade material into the visible area of the basement car park entry?</li> <li>• Locate or screen all parking to minimize visibility from the street?</li> </ul>	<p><b>N/A:</b> Driveway gates are not proposed.</p> <p><b>No:</b> A double width driveway is proposed to allow two-way traffic flow.</p> <p><b>Yes:</b> The driveway is proposed in the south-western corner of the site and is not considered visually prominent, being located on the secondary frontage, rather than the principal street frontage.</p> <p><b>N/A</b></p> <p><b>Yes:</b> The vehicular entry point is located off the secondary street frontage, rather than the principal street frontage</p> <p><b>Noted:</b> The vehicular entry to the basement parking area will not appear as a 'black hole' in the streetscape.</p> <p><b>N/A</b></p> <p><b>Yes:</b> The provision of a basement means that the on-site parking is not visible from the street.</p>
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**4. Impacts on Neighbours**

<p><b>Built Form:</b></p> <p>Does the site planning and design:</p> <ul style="list-style-type: none"> <li>• Where possible, maintain the existing orientation of dwelling 'fronts' and 'backs'?</li> <li>• Be particularly sensitive to privacy impacts where dwellings must be oriented at 90 degrees to the existing pattern of development?</li> <li>• Set upper storeys back behind the side or rear building line?</li> <li>• Reduce the visual bulk of roof forms by breaking down the roof into smaller elements rather than having a single uninterrupted roof structure?</li> <li>• Incorporate second stories within the roof space and provide dormer windows?</li> <li>• Offset openings from existing neighbouring windows or doors?</li> <li>• Reduce the impact of unrelieved walls on narrow side and rear setbacks by limiting the length of the walls built to these setbacks?</li> </ul>	<p><b>Yes:</b> The proposed built form is appropriate for the locality and will not result in unreasonable impacts on neighbouring properties.</p>
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<p><b>Trees, landscaping and deep soil zones:</b></p> <p>Does the site planning and design:</p> <ul style="list-style-type: none"> <li>• Use vegetation and mature planning to provide a buffer between new and existing dwellings?</li> <li>• Locate deep soil zones where they will be provide privacy and shade for adjacent dwellings?</li> <li>• Plant in side and rear setbacks for privacy and shade for adjoining dwellings?</li> <li>• Use species that are characteristic to the local area for new planting?</li> </ul>	<p><b>Yes:</b> Refer to the Landscape Plan for details.</p>
<p><b>Residential amenity:</b></p> <p>Does the site planning and design:</p> <ul style="list-style-type: none"> <li>• Protect sun access &amp; ventilation to living areas and private open space of neighbouring dwellings by ensuring adequate building separation.</li> <li>• Design dwellings so that they do not directly overlook neighbours' private open space or look into existing dwellings?</li> <li>• Locate private open space in front setbacks where possible to minimise negative impacts on neighbours?</li> <li>• Ensure private open space is not adjacent to quiet neighbouring uses, e.g. bedrooms?</li> <li>• Design dwellings around internal courtyards?</li> <li>• Provide adequate screening for private open space areas?</li> <li>• Use side setbacks which are large enough to provide usable private open space to achieve privacy and soften the visual impact of new development by using screen planting?</li> </ul>	<p><b>Yes:</b> Refer to the Shadow Diagrams for details.</p> <p><b>Yes:</b> The design allows for an appropriate degree of privacy to neighbouring properties to be achieved.</p> <p><b>N/A</b></p> <p><b>N/A</b></p> <p><b>N/A</b></p> <p><b>Yes:</b> Refer to the Landscape Plan for details.</p> <p><b>Yes:</b> Refer to the Landscape Plan for details.</p>
<p><b>Parking, garaging and vehicular circulation:</b></p> <p>Does the site planning and design:</p> <ul style="list-style-type: none"> <li>• Provide planting and trees between driveways and side fences to screen noise and reduce visual impacts?</li> <li>• Position driveways so as to be a buffer between new and existing adjacent dwellings?</li> </ul>	<p><b>Yes:</b> Refer to the Landscape Plan submitted with the application for details.</p> <p><b>Yes:</b> The location of the driveway will act as a buffer to the adjacent development.</p>

5. Internal Site Amenity	
<p><b>Built form:</b></p> <p>Does the site planning and design:</p> <ul style="list-style-type: none"> <li>• Maximise solar access to living areas and private open space areas of the dwelling?</li> <li>• Provide dwellings with a sense of identity through building articulation, roof form and other architectural elements?</li> <li>• Provide buffer spaces and/or barriers between the dwellings and driveways or between dwellings and communal areas for villa or townhouse style developments?</li> <li>• Use trees, vegetation, fences, or screening devices to establish curtilages for individual dwellings in villa or townhouse style developments?</li> <li>• Have dwelling entries that are clear and identifiable from the street or driveway?</li> <li>• Provide a buffer between public/communal open space and private dwellings?</li> <li>• Provide a sense of address for each dwelling?</li> <li>• Orientate dwelling entries to not look directly into other dwellings?</li> </ul>	<p><b>Yes:</b> Achieves minimum requirements.</p> <p><b>Yes:</b> The main pedestrian entry will have a sense of identity.</p> <p><b>N/A</b></p> <p><b>N/A</b></p> <p><b>Yes:</b> The main pedestrian entry from Station Street will be clearly identifiable from the street.</p> <p><b>N/A</b></p> <p><b>N/A</b></p> <p><b>N/A</b></p>
<p><b>Parking, garaging and vehicular circulation:</b></p> <p>Does the site planning and design:</p> <ul style="list-style-type: none"> <li>• Locate habitable rooms, particularly bedrooms, away from driveways, parking areas and pedestrian paths, or where this is not possible use physical separation, planting, screening devices or louvers to achieve adequate privacy?</li> <li>• Avoid large uninterrupted areas of hard surface?</li> <li>• Screen parking from views and outlooks from dwellings?</li> <li>• Reduce the dominance of areas for vehicular circulation and parking by:                             <ul style="list-style-type: none"> <li>(i) Considering single rather than double width driveways?</li> <li>(ii) Use communal car courts rather than individual garages?</li> <li>(iii) Single rather than double garages?</li> <li>(iv) Tandem parking or a single garage with</li> </ul> </li> </ul>	<p><b>Yes:</b> Refer to the floor plans in the Architectural package submitted with the application for details.</p> <p><b>Yes:</b> Hard paved areas have been kept to a minimum.</p> <p><b>Yes:</b> Basement parking means that the on-site parking is not visible.</p> <p><b>No:</b> Council requires a double width driveway.</p> <p><b>Yes:</b> Basement parking is proposed.</p> <p><b>N/A</b></p> <p><b>N/A</b></p>

<p>single car port in tandem?</p> <ul style="list-style-type: none"> <li>• Providing some dwellings without any car parking for residents without cars?</li> </ul>	<p><b>N/A</b></p>
<p><b>Residential amenity:</b> Does the site planning and design:</p> <ul style="list-style-type: none"> <li>• Provide distinct and separate pedestrian and vehicular circulation on the site where possible, where not possible shared access should be wide enough to allow a vehicle and wheelchair to pass safely?</li> <li>• Provide pedestrian routes to all public and semi-public areas?</li> <li>• Avoid ambiguous spaces in building and dwelling entries that are not obviously designated as public or private?</li> <li>• Minimise opportunities for concealment by avoiding blind or dark spaces between buildings, near lifts and foyers and at the entrance to or within indoor car parks?</li> <li>• Clearly define thresholds between public and private spaces?</li> <li>• Provide private open space that is generous in proportion and adjacent to the main living areas of the dwelling?</li> <li>• Provide private open space area that are orientated predominantly to the north, east or west to provide solar access?</li> <li>• Provide private open space areas that comprise multiple spaces for larger dwellings?</li> <li>• Provide private open space areas that use screening for privacy but also allow casual surveillance when located adjacent to public or communal areas?</li> <li>• Provide private open space areas that are both paved and planted when located at ground level?</li> <li>• Provide private open space areas that retain existing vegetation where practical?</li> <li>• Provide private open space areas that use pervious pavers where private open space is predominantly hard surfaced to allow for water percolation and reduced run-off?</li> <li>• Provide communal open space that is clearly and easily accessible to all residents and easy to maintain and includes shared</li> </ul>	<p><b>Yes:</b> Separate pedestrian and vehicular circulation is proposed.</p> <p><b>Yes:</b> Pedestrian routes are provided to all publicly accessible areas of the development.</p> <p><b>Yes:</b> The demarcation between public and private spaces within the development is clear and legible.</p> <p><b>Yes:</b> The design has had regard for the CPTED principles.</p> <p><b>Yes:</b> As noted above, the demarcation between public and private spaces within the development is clear and legible.</p> <p><b>Yes:</b> Each apartment is provided with useable private open space adjacent to and accessible from the living areas.</p> <p><b>Yes:</b> As much as possible, private open space areas are oriented to the north, east and west.</p> <p><b>Yes:</b> The 3 bedroom apartments have larger areas of private open space.</p> <p><b>Yes:</b> The terraces and balconies of apartments allow for casual surveillance of the ground and surrounding areas below.</p> <p><b>N/A</b></p> <p><b>N/A</b></p> <p><b>N/A</b></p> <p><b>Yes:</b> The communal open space is easily accessible and provide facilities that will allow for resident</p>

<p>facilities, such as seating and barbeques to permit resident interaction?</p> <ul style="list-style-type: none"> <li>• Site and/or treat common service facilities such as garbage collection areas and switchboards to reduce their visual prominence to the street or to any private or communal open space?</li> </ul>	<p>interaction.</p> <p><b>Yes:</b> The garbage and recycling storage rooms are located in areas that are not readily visible from the public domain surrounding the development.</p>
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As can be seen from the Table, the proposed development satisfies the requirements of Division 1 in Part 2 of the ARH SEPP in relation to in-fill affordable housing.

#### 4.2.5 Sydney Regional Environmental Plan No. 20 – Hawkesbury-Nepean River (No. 2 – 1997)

The aim of *Sydney Regional Environmental Planning Policy No. 20 – Hawkesbury Nepean River* (now a deemed SEPP) is to protect the environment of the Hawkesbury-Nepean River system by ensuring that the impacts of future land uses are considered in a regional context. The Policy requires the consent authority to have regard to a number of general and specific considerations, policies and strategies when assessing development applications.

It is considered that the proposed development is not contrary to these general and specific considerations, policies and strategies. The site is not located within a scenic corridor of local or regional significance and the proposed mixed use development will not have an adverse impact on the Hawkesbury Nepean River system in either a local or regional context.

#### 4.2.6 Draft State Environmental Planning Policy (Environment) 2018

*Draft State Environmental Planning Policy (Environment) 2018* proposes to consolidate seven (7) existing SEPPs and simplify the planning rules for a number of water catchments, waterways, urban bushland, and Willandra Lakes World Heritage Property. These environmental policies will be accessible in one location and updated to reflect changes that have occurred since the creation of the original policies.

One of the (deemed) SEPPs to be included is *Sydney Regional Environmental Plan No. 20 – Hawkesbury-Nepean River (No. 2 – 1997)*, that currently applies to the subject site.

As detailed at 4.2.7 below, the proposed development is unlikely to have an adverse impact on the Hawkesbury-Nepean River Catchment and therefore, is consistent with the intent of the draft Environment SEPP.

### 4.3 Local Environmental Planning Instruments

#### 4.3.1 Penrith Local Environmental Plan 2010

The principal local environmental planning instrument applying to the City of Penrith is *Penrith Local Environmental Plan 2010*, which came into force in September 2010. This LEP has been made in accordance with the standard environmental planning instrument under Section 3.20 of the *Environmental Planning & Assessment Act, 1979*.

As noted earlier, the site is zoned B4 Mixed Use under *Penrith Local Environmental Plan 2010*.

The specific aims of the LEP in relation to the B4 Mixed Use zone are:

- To provide for a mixture of compatible land uses.
- To integrate suitable business, office, residential, retail and other development in accessible locations so as to maximise public transport patronage and encourage walking and cycling.

- *To minimise conflict between land uses within the zone and land uses within adjoining zones.*
- *To create opportunities to improve public amenity.*
- *To provide a wide range of retail, business, office, residential, community and other suitable land uses.*

**Comment:** The proposed mixed use development is considered to be consistent with the objectives for the B4 Mixed Use zone as follows:

- The development will provide additional commercial/retail floor space that will suit a range of commercial land uses and assist in facilitating ongoing economic growth of the Penrith City Centre.
- The development will provide additional housing choice and diversity in the location, in a built form that is consistent and compatible with the likely future character of the area.
- A high level of residential amenity will be achieved, with the design of the residential apartments having regard to the design quality principles set out in SEPP 65, as well as the objectives and design criteria set out in the ADG.
- The site is located within walking distance of Penrith Railway Station and a number of bus stops, giving the site excellent access to the public transport network, as well as being accessible to the services and facilities provided in the Penrith City Centre.

There are a number of clauses in the LEP that are applicable to the proposed development. These are discussed below:

**Clause 4.3** of the LEP relates to the height of buildings and prescribes a maximum building height of 24m for the site, as indicated on the Height of Buildings Map that accompanies the LEP. The proposed development has a maximum building height of 23.425m and will therefore comply with the maximum building height development standard.

**Clause 4.4** of the LEP relates to floor space ratio and prescribes a maximum floor space ratio of 2:1 for the site. However, as discussed previously, the proposed development seeks to provide a component of affordable rental housing and benefit from the floor space ratio incentive available under the relevant provisions of the ARH SEPP. Seeking to provide 20.6% of the residential GFA as affordable rental housing, a floor space ratio of 2.16:1 is proposed.

Part 7 of the LEP provides a number of additional local provisions. Those that are of relevance to the proposed development are discussed below:

**Clause 7.1** of the LEP relates to earthworks and requires the consent authority to give consideration to a range of matters with respect to the potential for impacts associated with earthworks. As the basement levels will require excavation, these matters need to be taken into consideration and are discussed below:

- the likely disruption of, or any detrimental effect on, existing drainage patterns and soil stability in the locality,*
- the effect of the proposed development on the likely future use or redevelopment of the land,*
- the quality of the fill or the soil to be excavated, or both,*
- the effect of the proposed development on the existing and likely amenity of adjoining properties,*
- the source of any fill material and the destination of any excavated material,*
- the likelihood of disturbing relics,*
- the proximity to and potential for adverse impacts on any waterway, drinking water catchment or environmentally sensitive area,*

- (h) any appropriate measures proposed to avoid, minimise or mitigate the impacts of the development,
- (i) the proximity to and potential for adverse impacts on any heritage item, archaeological site, or heritage conservation area.

**Comment:** The excavation for the 2 basement levels constitutes earthworks that are ancillary to the development. The soil to be removed from the excavation will be disposed of at a licensed facility. The excavation will be undertaken by an appropriately qualified and experienced company and erosion and sediment controls will be put in place prior to works commencing on the site.

As such, it is unlikely that the proposed excavation will have any detrimental impacts on adjoining properties, soil stability or drainage patterns.

**Clause 7.8** of the LEP relates to 'active street frontages' and aims to encourage uses that attract pedestrian traffic along certain ground floor street frontages, as nominated on the 'Active Street Frontages' Maps that accompany the LEP. The Station Street frontage of the site is nominated as an 'active street frontage'. Both of the ground floor commercial tenancies front Station Street and are provided with glazed shopfronts that will allow a good visual connection between the footpath and each tenancy, consistent with the intent of Clause 7.8.

Part 8 of the LEP provides a number of local provisions specific to the Penrith City Centre. As indicated on the 'Clause Application Map' that accompanies the LEP, the site falls within the nominated boundaries of the Penrith City Centre. Those provisions that are of relevance to the proposed development are discussed below:

**Clause 8.3** of the LEP relates to minimum building street frontage and states (in part) that consent must not be granted to the erection of a building on land zoned B4 Mixed Use that does not have at least one street frontage of 20m or more. The site has a frontage of 30.48m to Station Street and secondary street frontage of 31.435m to Reserve Street and therefore, meets the minimum street frontage requirement.

**Clause 8.4** of the LEP relates to Design Excellence and states that consent must not be granted for development involving the construction of a new building, or external alterations to an existing building, on land to which this Part applies unless, in the opinion of the consent authority, the proposed development exhibits design excellence. Subclause 8.4(2) sets out the matters to which the Council must have regard in deciding whether or not a proposed development exhibits design excellence.

**Comment:** Having regard to the matters set out in subclause 8.4(2), it is considered that the proposed development exhibits design excellence and the form and external appearance of the development will improve the quality and amenity of the public domain. The proposed building exhibits a high standard of architectural design and the proposed materials, colour scheme and detailing will complement the adjoining 7 storey building and represent a built form and appearance that will make a positive contribution to the character and built form outcome for sites within the Penrith City Centre. The proposed development is unlikely to impact on any view corridors, provides an appropriate land use mix for the site, does not impact on any nearby heritage listed properties and incorporates a range of environmentally sustainable features. The building will have an acceptable relationship to both the adjoining development and the surrounding public domain and the proposed massing and modulation of the building is appropriate in the context of the sites location and relationship to the surrounding development and the public domain. The ground floor commercial/retail tenancies provide activation to the street frontages and will relate to and connect with the adjoining footpath. The residential apartments perform well against the SEPP 65 Design Quality Principles and 100% of the apartments are cross ventilated and will receive in excess of the required 3 hour minimum of direct solar access during mid-winter. The re-use of rainwater for the cold water tap in the laundries of the apartments, and the installation of water efficient fittings and fixtures, energy efficient lighting and drought resistant plant selection, combined with the high levels of cross ventilation and solar access demonstrates that the building will incorporate the principles of ecologically sustainable development. Further, the proposed building will not have any unacceptable environmental impacts with respect to the bulk and scale of the built form, solar access and overshadowing, visual and acoustic privacy or traffic and parking impacts and the site is suitable for the proposed development.

**Subclause 8.4(3)** states (in part) that consent must not be granted to development in respect of a building that will be greater than 24m or 6 storeys (or both) unless an architectural design competition has been held.

**Comment:** The proposed scheme does not exceed 24m in height and is not greater than 6 storeys. As such, the requirement for an architectural design competition would not be triggered under subclause 8.4(3)(a). The site is not identified as a key site on the Key Sites Map and the applicant has not chosen to have an architectural design competition. Therefore, the requirement for an architectural design competition is not triggered under subclauses 8.4(3)(b) & (c).

**Subclause 8.4(5)** states that development consent may not be granted for the erection or alteration of a building to which this clause applies that has a height or floor space ratio that is 10% or more greater than allowed for under Clauses 4.3 and 4.4 of Penrith LEP 2010, unless:

- (a) The design of the building or alteration is the result of an architectural design competition, and
- (b) The concurrence of the Director-General has been obtained to the development application.

**Comment:** The proposed building height of 23.425m is less than the 24m building height prescribed under Clause 4.3 and although the proposed floor space ratio of 2.16:1 is 145.6m<sup>2</sup> greater than the 2:1 floor space ratio prescribed under Clause 4.4 of the LEP, this equates to 7.78% and therefore, is less than 10% greater. As such, the need for an architectural design competition and the concurrence of the Director-General (now Secretary) is not required.

**Clause 8.5** of the LEP relates to building separation and states that buildings must be erected so that the separation distance –

- (a) *from neighbouring buildings, and*
- (b) *between separate parts or other separate raised parts of the same building, is not less than that provided for in a development control plan made by the Council.*

As set out in Section 1.2.3. *Building Form – Height, Bulk and Scale* in Part C1 *Site Planning and Design Principles* of Penrith DCP 2014, in relation to setbacks/separations: Buildings should be sufficiently set back from property boundaries and other buildings to:

- (i) *Maintain consistency with the street context and streetscape character, especially street/front setbacks;*
- (ii) *Maximise visual and acoustic privacy, especially for sensitive land uses;*
- (iii) *Maximise deep root planting areas that will support landscape and significant tree plantings integrated with the built form, enhancing the streetscape character and reducing a building's*
- (iv) *visual impact and scale;*
- (v) *Maximise permeable surface areas for stormwater management; and*
- (vi) *Minimise overshadowing.*

It is considered that the proposed mixed use building will have an acceptable relationship with the recently constructed residential flat building on the adjoining site with respect to the above criteria.

## 4.4 Draft Local Environmental Planning Instruments

### 4.4.1 Draft Penrith Local Environment Plan 2010 (Phase 1 Review of LEP)

Council has prepared a Planning Proposal to amend Penrith Local Environment Plan 2010 in order to align LEP 2010 with the planning priorities set in the Greater Sydney Commission's Greater Sydney Region Plan – A Metropolis of Three Cities and Western City District Plan and draft Council-led strategies. These amendments form part of a phased approach to the review of LEP 2010.

The Phase 1 LEP Review Planning Proposal primarily responds to the immediate actions arising from the draft Local Housing Strategy, draft Rural Lands and Villages Strategy and draft St Marys Economic Development Strategy as well as addressing minor housekeeping amendments.

The Planning Proposal setting out the proposed amendments was placed on public exhibition between 1 May and 29 May 2020.

The Phase 1 Amendments to the LEP 2010 (as exhibited) aim to:

- increase the minimum lot size controls for multi-dwelling housing in R3 Medium Density Residential and R4 High Density Residential zones;
- apply a minimum lot size control for dual occupancy development in the RU5 Village zone for Londonderry and Luddenham villages;
- permit eco-tourist facilities, with consent, in the E4 Environmental Living zone
- permit a limited number of additional land uses, with consent, on certain land within Castlereagh's 'centre';
- remove the minimum lot size requirement for dwelling houses on 11 lots in Llandilo;
- include a new requirement for non-residential uses in the St Marys Town Centre B4 Mixed Use zone;
- extend the additional permitted uses provision for 164 Station Street, Penrith;
- rezone Triangle Park, Penrith to RE1 Public Recreation, and
- undertake minor housekeeping matters.

As such, the proposed amendments will not affect the proposed development.

It is noted that at its Policy Review Committee Meeting of 10 August 2020, Council resolved to endorse the Planning Proposal presented in the report, which includes a change to the exhibited Planning Proposal in relation to the proposed amendment for non-residential uses in the St Marys Town Centre. Council also resolved to forward the Planning Proposal to the Minister for Planning and Public Spaces with a request to make the LEP amendments.

## **4.5 Development Control Plans**

### **4.5.1 Penrith Development Control Plan 2014**

Penrith Development Control Plan 2014 contains detailed provisions and controls that supplement the provisions of the LEP and came into effect on 17 April 2015. The parts of the DCP that are applicable to the proposed development are:

- A – Introduction
- B – DCP Principles
- C1 – Site Planning and Design Principles
- C2 – Vegetation Management
- C3 – Water Management
- C4 – Land Management
- C5 – Waste Management
- C6 – Landscape Design
- C7 – Culture and Heritage

- C8 – Public Domain
- C10 – Transport, Access and Parking
- D2 – Residential Development (D2.5 Residential Flat Buildings)
- E11 – Penrith (Part A – Penrith City Centre)

In particular, Section 2.5 of Part D2 Residential Development provides controls specific to residential flat buildings, with a principal objectives as follows:

*In established areas new development should be planned and designed to reflect the character of traditional neighbourhoods established prior to 1970.*

The site is located within the City South (Mixed Use) character area identified in Figure E11.2 – Penrith City Centre Character Areas of the DCP, where new development is to provide a high quality and active public domain interface.

The proposal has been assessed against the relevant objectives and controls under Penrith Development Control Plan 2014 and this assessment is summarised in the Compliance Table provided below:

<b>Penrith Development Control Plan 2014</b>	
<b>Part C1 – Site Planning and Design Principles</b>	
<b>Control</b>	<b>Compliance</b>
<b>1.1 Site Planning</b>	<b>Noted:</b> The site's context in terms of its local and regional context has been analysed and considered in designing the proposed development.  The site is not located in a key area with scenic and landscape values
<b>1.2 Design Principles</b>	<b>Noted:</b> The design of the proposed development has had regard to the design principles, including BASIX requirements and CPTED principles (refer to 5.2.7 of the SEE for details).
<b>Part C5 – Waste Management</b>	
<b>Control</b>	<b>Compliance</b>
<b>5.1 Waste Management Plan</b>	<b>Complies:</b> A Waste Management Plan detailing the proposed waste and recycling management methods for demolition, construction and on-going waste and recycling has been submitted with the application.
<b>5.2.1 – Siting and design of waste storage and collection areas</b>	<b>Complies:</b> The building has been designed to allow a garbage collection vehicle to enter the ground floor level to collect waste and recycling and leave the site in a forward direction. The floor to ceiling height of the ground floor level has been provided at 3.72m and the collection area has been designed to accommodate a 9.7m HRV waste collection vehicle.

	Swept paths to demonstrate that the 9.7m HRV garbage collection vehicles can enter, manoeuvre and exit the site in a forward direction are provided in the Traffic Impact Assessment that accompanies the application.
<b>5.2.3 – Mixed Use Development Controls</b>	<p><b>Complies:</b> The separate waste and recycling storage rooms have been designed to accommodate the required number of waste and recycling bin for both the commercial and residential components of the building. A bulky waste room is also provided.</p> <p>A garbage chute system with a dedicated waste room on each residential floor has been identified on the architectural drawings.</p>
<b>Part C10 – Transport, Access and Parking</b>	
<b>Control</b>	<b>Compliance</b>
<b>10.5.1 Parking</b>	<p><b>Complies:</b> The car parking allocation of thirty two (32) spaces comprises twenty six (26) resident spaces (including three (3) accessible), four (4) visitor spaces and two (2) commercial spaces (including 1 accessible space). One visitor space doubles as a car wash bay. Eleven (11) bicycle racks are provided over the two (2) basement levels. This complies with the DCP parking rates.</p> <p>Vehicular access to the basement parking levels will be provided via a 6m wide driveway from Reserve Street, on the south-western corner of the site.</p>
<b>Part D2 Residential Development - 2.5 – Residential Flat Buildings</b>	
<b>Control</b>	<b>Compliance</b>
<b>2.5.2 Preferred Configuration for Residential Flat Buildings</b>	<p><b>Noted:</b> It is difficult for the form of a six (6) storey residential flat building to incorporate the traditional configuration of cottages and cottage gardens. However, the building incorporates ten (10) apartments that face the street frontages and have their private open space overlooking the street.</p>
<b>2.5.3 The Development Site</b>	<p><b>Complies:</b> The site has a frontage of 30.5m to Station Street and 31.4m to Reserve Street, which exceeds the minimum required 20m frontage.</p>
<b>2.5.4 Urban Form</b>	<p><b>Noted:</b> The proposed building is set in a generously proportioned landscaped setting and incorporates units that front the street, articulation and stepping and varied urban form.</p>
<b>2.5.5 Landscaped Area</b>	<p><b>Complies:</b> Approximately 30% of the site area will be provided as landscaped area. This includes 11.3% of the site area as deep soil zone.</p>

	<p>A communal open space area is provided at the roof top level and will be accessible to all residents via the lift.</p> <p>Details of the landscaping are provided on the Landscape Plan that accompanies the development application.</p>
<b>2.5.6 Front &amp; Rear Setbacks</b>	<p><b>Complies:</b> The minimum front setback is 3m from the Station Street frontage and 2.1m from the Reserve Street frontage and is consistent with the prevailing setback of the adjoining building on Station Street.</p> <p>The rear setback is also a minimum of 6m, increasing to 7.5 at the upper levels.</p>
<b>2.5.7 Side Setbacks</b>	<p><b>Complies:</b> No minimum side setback is nominated in the DCP controls. However, as described below, the side setbacks for the residential component vary between 6m (lower 4 floors) and 8.5m minimum (upper floors), in order to meet the required separation distances under the ADG.</p> <p>These setbacks allow for the provision of ground level private open space, landscaping and appropriate separation between neighbouring buildings.</p>
<b>2.5.8 Visual and Acoustic Privacy and Outlook</b>	<p><b>Complies:</b> There is a seven storey residential flat building on the adjoining sites. However, the minimum 6m boundary setbacks for the proposed building setbacks up to Level 3 is provided for the required 'share' of the ADG recommended 12m separation distance between habitable rooms/balconies of buildings up to 4 storeys in height. At the 5<sup>th</sup> and 6<sup>th</sup> storeys, the setbacks have been increased to 9m to provide the required 'share' of the recommended separation distance between habitable rooms/balconies of buildings 5-8 storeys in height.</p>
<b>2.5.9 Solar Planning</b>	<p><b>Complies:</b> All apartments will receive in excess of a minimum of 2 hours solar access between 9am and 3pm in mid-winter. Therefore, this satisfies the minimum 70% requirement, in compliance with the ADG.</p>
<b>2.5.12 Building Design</b>	<p><b>Noted:</b> The building facades provide appropriate articulation and detailing to assist in minimising the bulk and scale of the development. A variety of materials and finishes has been selected to provide a visually appealing appearance.</p>

<p><b>2.5.13 Energy Efficiency</b></p>	<p><b>Noted:</b> The building has been designed so that all eighteen (18) apartments are cross ventilated and will receive good solar access.</p> <p>None of the apartments are south facing.</p> <p>A BASIX Certificate outlining the energy, water and heating efficiency commitments to be adhered to has been submitted with the development application.</p>
<p><b>2.5.14 Design of Dwellings and Private Courtyards</b></p>	<p><b>Partial compliance:</b> Each apartment is provided with an area of private open space that is accessed directly off the living areas and achieves the required minimum area of 10m<sup>2</sup>. Not all of the balconies achieve the minimum required dimensions of 2.5m x 2.5m. However, were balconies do not meet the minimum dimensions, they are larger in area than the minimum 10m<sup>2</sup> and provide large and useable private open space areas for the enjoyment of residents.</p> <p>Notwithstanding, all private open space areas meet the recommended sizes under the ADG.</p>
<p><b>2.5.15 Garages</b></p>	<p><b>Complies:</b> The basement levels extend beyond the building footprint. However, the basement is wholly beneath ground level.</p>
<p><b>2.5.16 Garden Design</b></p>	<p><b>Noted:</b> Landscaping details for the site are provided in the Landscape Plan that accompanies the application. The landscaping scheme has had regard to the DCP controls to ensure that it meets the garden design objective.</p>
<p><b>2.5.17 Paving Design</b></p>	<p><b>Noted:</b> Refer to the Landscape Plan that accompanies the application for details.</p>
<p><b>2.5.18 Fences and Retaining Walls</b></p>	<p><b>Noted:</b> No above ground retaining walls are proposed. At the time of preparation of this Statement, fencing details were not yet known.</p>
<p><b>2.5.19 Safety and Security</b></p>	<p><b>Complies:</b> A maximum of four (4) apartments will be accessed from the lift and corridor on each floor.</p> <p>The location of windows and private open space areas will provide good levels of casual surveillance over the street and surrounding the building. A total of ten (10) apartments face either Station Street or Reserve Street, with their private open space directly overlooking the street.</p> <p>The design minimises opportunities for concealment spaces and appropriate lighting to public areas and pathways will be provided.</p>

<p><b>2.5.20 Accessibility and Adaptability</b></p>	<p><b>Complies:</b> All public areas of the building and access pathways will be consistent with the requirements of AS1428.1. Internal corridors and circulation space will meet the required minimum width of 1m.</p> <p>Two (2) of the nineteen (18) apartments (11%) have been nominated as adaptable units that will be capable of being fitted out in accordance with AS4299. Post-adaption details for these units would be provided with any future development application. In addition, four (4) apartments are nominated as liveable apartments.</p> <p>The nominated adaptable apartment are 2 bedroom apartments.</p> <p>Each adaptable apartment has been allocated an accessible parking space.</p> <p>Further details are provided in the Access Report that accompanies the application.</p>
<p><b>2.5.21 Storage and Services</b></p>	<p><b>Noted:</b> With the exception of five (5) of the eighteen (18) apartments that are provided with 9m<sup>3</sup> of storage, storage with a capacity of at least 10m<sup>3</sup> and in addition to wardrobes and kitchen cupboards will be made available for residents.</p> <p>5m<sup>3</sup> of individual storage space is provided in the basement levels, with the remainder being provided within the apartments.</p> <p>The letterboxes will be located on the Station Street frontage, in accordance with Australia Post requirements.</p> <p>Provision will be made for adequate telecommunications facilities in each apartment.</p>
<p><b>Part E11 Penrith – Part A – Penrith City Centre</b></p>	
<p><b>Control</b></p>	<p><b>Compliance</b></p>
<p><b>11.1 Preliminary</b></p> <p>11.1.3 Penrith City Centre Precincts and Character Areas</p> <p>City South (Mixed Use) Precinct</p>	<p><b>Complies:</b> The proposed development is considered to be consistent with desired future character of the City South (Mixed Use) Precinct, providing a high quality and appearance mixed use development with access to shops and services, public transport, employment and recreational facilities.</p>
<p><b>11.2 Building Form</b></p> <p>11.2.2 Building to Street Alignment &amp; Street Setbacks</p> <p>11.2.4 Building Depth &amp; Bulk</p>	<p><b>Partial Compliance:</b> A compliant 3m setback to Station Street is proposed and 2.1m setback to Reserve Street is proposed in accordance with Figure E11.3 Front Setbacks.</p> <p>The commercial floorplate does not exceed 900m<sup>2</sup> and is less than 20m in depth. The residential floor plate does not exceed 750m<sup>2</sup>, but the</p>

<p>11.2.5 Boundary Setbacks &amp; Building Separation</p> <p>11.2.6 Mixed Use Buildings</p> <p>11.2.7 Site Cover &amp; Deep Soil Zones</p> <p>11.2.8 Landscape Design</p> <p>11.2.9 Planting on Structures</p>	<p>building depth exceeds 18m, with a small portion through the central part of the building having a depth of 22.4m.</p> <p>The required boundary setbacks are met.</p> <p>The ground floor to ceiling height is 3.72m and 2.7m for the residential floors.</p> <p>Separate and clearly identifiable access is provided to the commercial and residential components and secure access (via intercom) will be provided to the residential apartments.</p> <p>The site cover is less than the allowable 100% and 11.3% of the site is provided as deep soil.</p> <p>Refer to the Landscape Plan for planting details.</p>
<p><b>11.3 Pedestrian Amenity</b></p> <p>11.3.2 Active Street Frontages &amp; Address</p> <p>11.3.4 Vehicle Footpath Crossings</p> <p>11.3.6 Building Exteriors</p>	<p><b>Complies:</b> The commercial tenancies front Station Street and wrap around into Reserve Street, providing the required activation and connection to the pedestrian public domain.</p> <p>Vehicular entry to the site is consolidated into a single 6m wide two-way driveway off Reserve Street in the south-western corner of the site.</p> <p>Details of the proposed external colours and materials are provided on the architectural drawings.</p>
<p><b>11.4 Access, Parking and Servicing</b></p> <p>11.4.1 Pedestrian Access &amp; Mobility</p> <p>11.4.2 On-Site Parking Options</p> <p>11.4.3 Site Facilities and Services</p>	<p><b>Complies:</b> The main pedestrian and vehicular entry points to the building are clearly identifiable and provide barrier free access.</p> <p>On-site basement parking is provided in accordance with the rates required under the Transport, Access and Parking section of the DCP.</p> <p>All site facilities and services can be accommodated on the site.</p>
<p><b>11.5 Sustainable Development</b></p> <p>11.5.1 Reflectivity</p> <p>11.5.2 Maximising Liveability &amp; Longevity</p>	<p><b>Complies:</b> The selected external materials and finishes are unlikely to generate unacceptable levels of glare or reflectivity that will cause discomfort to or threaten the safety of drivers or pedestrians.</p> <p>The residential mix includes 2 adaptable apartments, two liveable apartments and 5 affordable rental housing apartments. Therefore, a 'whole of building' approach has been considered and provides an appropriate level of adaptability and flexibility over the longer term.</p>

<p><b>11.6 Controls for Residential Development</b></p> <p>11.6.1 Housing Choice &amp; Mix</p>	<p><b>Complies:</b> The proposed residential mix includes the following:</p> <table border="1" style="margin-left: 20px;"> <thead> <tr> <th style="background-color: #e0e0e0;">Apartment Type</th> </tr> </thead> <tbody> <tr> <td>3 x 2 bedroom apartments</td> </tr> <tr> <td>2 x 2 bedroom adaptable apartments</td> </tr> <tr> <td>1 x 2 bedroom affordable apartments</td> </tr> <tr> <td>1 x 2 bedroom liveable apartments</td> </tr> <tr> <td>3 x 2 bedroom liveable / affordable apartments</td> </tr> <tr> <td>7 x 3 bedroom apartments</td> </tr> <tr> <td>1 x 3 bedroom affordable apartments</td> </tr> </tbody> </table> <p>The above mix is considered to provide an appropriate mix of dwelling types that cater for a range of household types, including adaptable, liveable and affordable rental housing options.</p>	Apartment Type	3 x 2 bedroom apartments	2 x 2 bedroom adaptable apartments	1 x 2 bedroom affordable apartments	1 x 2 bedroom liveable apartments	3 x 2 bedroom liveable / affordable apartments	7 x 3 bedroom apartments	1 x 3 bedroom affordable apartments
Apartment Type									
3 x 2 bedroom apartments									
2 x 2 bedroom adaptable apartments									
1 x 2 bedroom affordable apartments									
1 x 2 bedroom liveable apartments									
3 x 2 bedroom liveable / affordable apartments									
7 x 3 bedroom apartments									
1 x 3 bedroom affordable apartments									

As can be seen from the Compliance Table, the proposed development satisfies the majority of the DCP requirements that are relevant to the site. However, there are a minor number of areas where there are non-compliances with the DCP controls.

In this regard, it should be noted that Section 4.15(3A) of the *Environmental Planning and Assessment Act 1979* states:

**“(3A) Development control plans**

*If a development control plan contains provisions that relate to the development that is the subject of a development application, the consent authority:*

- (a) if those provisions set standards with respect to an aspect of the development and the development application complies with those standards—is not to require more onerous standards with respect to that aspect of the development, and*
- (b) if those provisions set standards with respect to an aspect of the development and the development application does not comply with those standards—is to be flexible in applying those provisions and allow reasonable alternative solutions that achieve the objects of those standards for dealing with that aspect of the development, and*
- (c) may consider those provisions only in connection with the assessment of that development application”*

Development Control Plan provisions are not statutory requirements and are intended to provide ‘guidance’ for development that is permissible. Subclause (b) above, emphasises that where a development does not comply with the standards of a DCP, a consent authority is obliged to *‘be flexible in applying those provisions’* and to *‘allow reasonable alternative solutions’* that achieve the objectives of those standards.

The non-compliances are discussed below:

Private Open Space

The DCP requires private open space areas in the form of a balcony to have minimum dimensions of 2.5m x 2.5m. However, the (principle) balconies for ten (10) of the eighteen (18) apartments do not meet the required minimum dimensions, with a minimum dimension of 1.2m at the narrowest part, due to their varied shapes. Notwithstanding, each of these balconies has an area well in excess of 10m<sup>2</sup> (between 14.51m<sup>2</sup> and 27.4m<sup>2</sup>) and provides a useable area of private open space, sufficient to accommodate

table and chairs etc. This still achieves the intent of the provision of quality and useable private open space and on this basis, it is requested that a variation be permitted for the ten (10) affected apartments.

### Storage

Five (5) of the eighteen (18) apartments are provided with only 9m<sup>3</sup> of storage, in addition to wardrobes and kitchen cupboards. This is 1m<sup>3</sup> less than the required minimum of 10m<sup>3</sup>. All apartments are provided with 5m<sup>3</sup> of individual secure storage in the basement levels, with the remainder being provided within the apartments. However, these five (5) apartments are all 2 bedroom apartments and therefore, the proposed 9m<sup>3</sup> of additional storage complies with the required minimum of 8m<sup>3</sup> for 2 bedroom apartments under 4G of the ADG. Given the storage for these apartments is ADG compliant, it is considered that a variation is warranted.

### Building Depth

Part E11 (11.2.4) of the DCP requires the building depth not to exceed 18m. However, there is a small portion through the central part of the building having a depth of 22.4m. Notwithstanding, this depth does not represent the depth of the apartments, which are generally dual aspect and achieve compliance with the ADG apartment depth requirements. It is considered that on a corner site, an appropriate design response is proposed and a variation to the building depth is warranted in the circumstances.

## 5 Section 4.15 Assessment

### 5.1 Section 4.15(1) - Matters for Consideration

In accordance with the provisions of Section 4.15(1) of the *Environmental Planning and Assessment Act 1979*, in determining a development application, a consent authority is to take into consideration such of the following matters as are of relevance to the development the subject of the development application:

- (a) *the provisions of:*
  - (i) *any environmental planning instrument, and*
  - (ii) *any draft environmental planning instrument that is or has been placed on public exhibition and details of which have been notified to the consent authority (unless the Director-General has notified the consent authority that the making of the draft instrument has been deferred indefinitely or has not been approved), and*
  - (iii) *any development control plan, and*
  - (iiia) *any planning agreement that has been entered into under section 93F, or any draft planning agreement that a developer has offered to enter into under section 93F, and*
  - (iv) *the regulations (to the extent that they prescribe matters for the purposes of this paragraph), that apply to the land to which the development application relates,*
- (b) *the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality,*
- (c) *the suitability of the site for the development,*
- (d) *any submissions made in accordance with this Act or the regulations,*
- (e) *the public interest.*

The matters for consideration listed under (a) above have been discussed in Section 4 of this Statement. The remaining matters (b) to (e) are discussed below:

### 5.2 Likely Impacts of the Development

#### 5.2.1 Context and Setting

The proposed development is considered to represent an appropriate built form and scale having regard to the anticipated future context and setting of the locality. The site is located on the south-western edge of the Penrith City Centre and has excellent access to public transport, educational establishments and the shopping and services available locally in Penrith and the wider regional area. Local parks and a range of privately operated and public recreational facilities are also easily accessible.

It is considered that the proposed development exhibits design excellence (as required under Clause 8.4 of Penrith LEP) and will make a positive contribution to the built form and future character of the locality.

## 5.2.2 Traffic, Access and Parking

On-site parking is proposed to be accommodated in 2 basement levels accessed by a driveway off Reserve Street on the south-western corner of the site.

Parking requirements for the site have been assessed against the applicable rates under Penrith Development Control Plan (DCP) 2014 for the eleven (11) residential apartments and the two (2) commercial office spaces and the ARH SEPP for the five (5) affordable rental housing apartments.

It is noted that the ARH SEPP does not specify a parking rate for residential visitors. As such, the visitor parking rate under Penrith DCP 2014 has been applied.

Accordingly, the proposed development requires on-site parking as calculated below:

### ***Car Parking requirement***

#### ***Residential (11 apartments – DCP rates)***

- 2 bedroom apartments - 6 apartments @ 1 space per apartment = 6 spaces;
- 3 bedroom apartments - 7 apartments @ 2 spaces per apartment = 14 spaces;
- Resident Visitors - 12 apartments @ 1 space per 5 apartments = 4 spaces.
- **subtotal = 24 car spaces**

#### ***Residential (5 affordable rental housing apartments – ARH SEPP rates)***

- 2 bedroom apartments - 4 apartments @ 1.0 space per unit = 4 spaces;
- 3 bedroom apartments – 1 apartment @ 1.5 spaces per apartment = 1.5 spaces;
- **subtotal = 5.5 spaces**

#### ***Residential Bicycle (Planning Guidelines for Walking and Cycling)***

- 20% - 30% of the total number of apartments for residents
- 5% - 10% of the total number of apartments for visitors
- **Subtotal = 4 spaces**

#### ***Commercial***

- $217.3m^2 @ 1 \text{ space per } 100m^2 \text{ GFA} = 2 \text{ spaces}$

#### ***Commercial bicycle***

- 3% - 5% of commercial staff for staff
- 5% - 10% of commercial staff for visitors
- **Subtotal = 1 space**

A total provision of thirty two (32) parking spaces is proposed, allocated as follows:

- 26 residential spaces (including 2 accessible spaces)
- 4 visitor spaces (including 1 space doubling as a car wash bay)
- 2 commercial spaces (including 1 accessible space)

Racks to accommodate 11 bicycles are also provided. This exceeds the DCP minimum rate of 5 spaces by 6 spaces.

Therefore, the proposed on-site parking satisfies the rates required under the DCP and ARH SEPP.

The application is accompanied by a Traffic and Parking Assessment prepared by The Transport Planning Partnership (TTPP) that makes an assessment of the on-site parking provision, examines the traffic generation and its impacts and comments on the design geometry of the access ramp and parking facilities.

The report also provides details of the anticipated traffic generation rates and car parking demand based on the RMS *Guide to Traffic Generating Developments*, anticipating that the proposed development will generate 6 vehicle trips an hour to/from the site during the morning and afternoon peaks. However, the traffic consultant is of the view that this additional traffic generation is relatively minor and will not result in any noticeable or unacceptable effect on the road network capacity or traffic-related environmental effect.

The Traffic & Parking Assessment report concludes that:

- *The proposed development would involve the excavation and construction of a new six storey mixed-use building at 118-120 Station Street, Penrith. The proposed development will include 18 residential units (including 5 units as affordable housing) and two commercial spaces with a total floor area of 217.23m<sup>2</sup> GFA. The proposed development will also include a two-level basement car park accommodating 32 car parking spaces via a new site access off Reserve Street.*
- *The proposed development will provide 32 car parking spaces including 26 residential parking spaces, 4 visitor parking spaces and 2 commercial staff parking spaces.*
- *The overall proposed car parking provision complies with parking requirements stipulated in the SEPP 2009 and Penrith DCP 2014, as such the proposed parking provision is considered to be satisfactory.*
- *The proposed development is anticipated to generate 6 vehicle trips per hour in the morning and evening peaks respectively. The development traffic is considered to be minimal and is not expected to cause any adverse impacts to the local road.*

Therefore, having regard to the findings of the Traffic & Parking Assessment, the traffic and parking arrangements of the proposed development are considered to be appropriate and will not result in any adverse environmental impacts or traffic implications in terms of road network capacity.

### 5.2.3 Noise and Acoustic Performance

In order to ascertain the building materials and construction methods to be adopted so that the building will achieve acceptable internal noise levels in accordance with Council's requirements, the application is accompanied by an Acoustic Report prepared by Acoustic Noise & Vibration Solutions Pty Ltd, that provides an assessment of the noise environment and makes recommendations as to the acoustic treatments that will be necessary in order to satisfy the requirements of Section F5 of the *Building Code of Australia, AS/NZS 2107:2016 – Acoustics – Recommended Design Sound Levels and Reverberation Times*, the *Noise Guide for Building Interiors*, the *NSW Noise Policy for Industry (2017)* and Penrith City

Council's requirements. A copy of the Acoustic Report accompanies the application and contains both an Acoustic Assessment of Environmental Noise (Part 1) and a Construction Noise and Vibration Management Plan (Part 2).

The report provides details of the unattended environment noise survey undertaken over a seven (7) day period between 21 August and 28 August 2020 in order to determine the daytime and night time background noise levels at the south-eastern boundary adjacent to the nearest residential receivers. Additional attended noise readings were taken at the Station Street frontage between 4.30pm and 5.30pm (expected to be peak hour traffic) on Friday 21 August 2020 to determine the traffic noise of Station Street and distant traffic noise from surrounding streets. The background noise levels were then compared to the relevant sound criteria for road noise so as to determine the required attenuation treatments so as to provide for appropriate noise and vibration attenuation.

The recommended materials of construction and acoustic treatments include a concrete roof and/or galvanised steel trough roofing, acoustic glazing treatments with air-tight seals on windows, double skin masonry external wall construction (or other method of construction with an Rw of 44), solid core doors with acoustic seals, as well as lagging (insulation) installed in pipes and services ducts/shafts.

If implemented correctly, the materials of construction and construction techniques recommended in the Acoustic Report will achieve the required noise reduction levels as required in AS 2107 'Acoustics – Recommended Design Sound Levels and Reverberation Times and Penrith City Council Conditions/Requirements.

Recommendations are also made with respect to attenuation measures to ensure that all proposed mechanical plant & equipment will comply with the NSW Noise Policy for Industry (2017) provided recommendations are adhered to.

#### **5.2.4 Overshadowing and Solar Access**

Shadow diagrams which illustrate the extent of shadows cast by the proposed building have been prepared by Architecture Design Studio (NSW) Pty Ltd and are included as part of the architectural drawing package. The orientation of the site and the design and siting of the residential units ensures that the private open spaces and adjacent internal living spaces of all of the residential units enjoy excellent levels of solar access. All of the residential units will receive a minimum of 4 hours solar access to their balconies and living areas between 9am and 3pm in mid-winter.

The shadow diagrams illustrate that morning shadows cast by the proposed development during mid-winter will fall over Reserve Street and the open carparking area associated with the Nepean Village Shopping Mall. By midday the shadows have contracted so that they only impact on Reserve Street and a small section of the Nepean Village carparking area. By 3pm, the shadows fall over the dual occupancy on the adjacent site to the east, as well as the Family Planning NSW building. However, the building will not reduce solar access to these properties during the mid-winter morning period.

Comparison to the December shadows shows that the shadow impacts are significantly improved during the summer months.

Having regard to the above, the proposed development performs well with respect to solar access and although will have an overshadowing impact on the properties to the south-east during the mid-winter afternoon, this will not have an unreasonable shadow impact on these adjoining properties.

#### **5.2.5 Flooding and Overland Flows**

As indicated earlier, the site is affected by local overland flows and as such, Council nominated minimum RLs for habitable floor levels, as well as the access ramp to the basement parking levels.

The application is accompanied by an Overland Flood Study and Flood Impact Report that provides an assessment of the impacts of flooding to the property and adjoining properties, both Pre & Post development. The report is based on the flood level information advice provided by Council at Pre-DA stage, which suggests that the 1% AEP local overland flow flood affecting the proposed development is

estimated to be RL 27.70m AHD. This has been adopted as the 'benchmark' for assessing the flood impact of the proposed development.

TUFLOW modelling was used to determine the Pre and Post development conditions with respect to the 1% AEP. Comparison of this modelling indicated that there will be some minor changes to the extent of flooding post development, however, the pre development overland flow paths are mostly retained. The flooding affectation resulting from the proposed development is considered to be 'insignificant' when considering the following aspects:

- i. The development does not concentrate overland flow anywhere that could increase the risks to the occupants and neighbouring properties;
- ii. The development reduces existing risks by spreading the flood extent throughout the site, thereby reducing the flood depths and associated inundation safety hazard areas;
- iii. The development does not divert any overland flow that could change flood levels, flows and velocities caused on neighbouring land.

In order to manage the risks to residents/occupants of the building in the event of a flood, a number of flood development control measures are recommended to be implemented. These include:

- *Raising of Finished Ground Floor level to 1% AEP flood level plus 500mm freeboard.*
- *Raising the crest of driveway entry to basement to 1% AEP flood level plus 300mm freeboard.*
- *Provision of flow through fencing with bottom 200mm left open.*
- *Providing a flood free evacuation access to the evacuation point.*
- *Providing flood warning signage around the flood affected area.*
- *Preparing Flood Risk Management Plan and Flood Evacuation Plan for the building.*

Once these flood related development controls are in place for the proposed development, the development poses no risks to its occupants and has not adverse impact to neighbouring properties. The flood levels are generally consistent with the existing site conditions.

The report provides the following conclusion & recommendations:

*The key strategies, flood controls and recommendations to be adopted for this development included the following:*

1. *The minimum finished ground floor level and the garage level shall be adopted as per Table 6 above (refer report).*
2. *The building materials below the minimum finished floor level shall be constructed from flood compatible materials and designed to withstand flood pressure and impacts from debris carried in flood waters.*
3. *Boundary fencing at frontage of Reserve Street and Station Street is to be open flow type fence with bottom 200mm left open for flood water to pass through.*
4. *Flood Warning signs shall be placed along the open flow type fence to warn the people about dangers of flooding.*

*The results from the investigations and modelling for this development that have been summarised in this report indicate that the development with the proposed flood control strategies that can facilitate unobstructed safe conveyance of flood waters through the site without detrimentally affecting the building, occupants and the neighbouring properties.*

Having regard to the above discussion and further detail provided in the Overland Flood Study and Flood Impact Report, it is considered that the flooding impacts can be appropriately managed and there will not be an adverse impact on flooding and overland flows as a result of the proposed development.

### 5.2.6 Social & Economic

The proposed development will have both a short and long term positive economic impact on the locality. In the short term it will create construction jobs for a variety of trade and specialist occupations.

The commercial/retail tenancies will provide opportunities for new businesses to establish in the area, as well as providing employment opportunities. The proposed residential apartments will increase the housing choice within Penrith and will create additional housing in an established urban area with good access to local services and facilities, as well as nearby major employment centres, consistent with the Council's intention of increasing residential densities in established urban areas. The additional population generated by the proposed development may reasonably be expected to improve expenditure in Penrith and other nearby centres, thereby making a positive contribution to the local economy.

As a result, it is considered that the proposed development will have a positive social and economic impact.

### 5.2.7 Crime Prevention

Crime Prevention through Environmental Design (CPTED) is an important inter-agency crime prevention program that reduces crime opportunity through effective planning, urban design and place management. The NSW Police Service program, known as Safer by Design is based on the principles of CPTED.

The Department of Planning & Environment (then PlanningNSW) released guidelines under (the former) Section 79C of the *Environmental Planning and Assessment Act, 1979* which have been prepared to assist councils in identifying crime risk and minimise opportunities for crime through appropriate assessment of development proposals.

The Guidelines uses Crime Prevention through Environmental Design (CPTED) which is a crime prevention strategy and focuses on reducing the opportunities for crime through the planning, design and structure of the built environment. This is achieved through:

- Maximising the risk to offenders through increasing the likelihood of detection and challenge;
- Maximising the effort require to commit an offence;
- Minimising the perceived benefits of crime; and
- Minimising the opportunity to facilitate inappropriate behaviour.

Part B of the Guidelines set out four principles to be used in the assessment of development applications to minimise the opportunity for crime, as follows:

#### **Surveillance**

Providing effective surveillance of areas within and surrounding a site can assist in reducing the attractiveness of crime targets. Surveillance of an area can be achieved through both natural and technical means.

Passive surveillance, where people can see what others are doing, creates a sense of safety within an environment and provides opportunities for interaction between individuals. This and high levels of passive surveillance, deters offenders from committing crime.

The landscape treatment for the development has been designed in cognisance of the need to maintain good levels of passive surveillance and allow safe movement of pedestrians around / across the site.

The commercial/retail tenancies have full height glazed 'shopfronts' that allow for good surveillance towards Station Street and Reserve Street. The main pedestrian entry/lobby for the residential apartments is oriented towards Station Street and does not provide a concealment space. In addition, there are living rooms/balconies of the apartments that are oriented towards both street frontages. This ensures maximum opportunity for casual surveillance of the surrounding footpaths and roadways.

Site lighting will be installed to satisfy the relevant Australian Standards and provide a high degree of lighting throughout the publicly accessible areas of the development.

### **Access Control**

By clearly defining areas accessible to the public and providing physical and symbolic barriers to attract and channel the movement of people, it will be difficult for offenders to reach victims and opportunity to commit crime will be minimised.

Electronic "Access Control" in the form of an audio intercom will be provided at the entry to the residential lobby to provide secure access to the residential apartments.

The pedestrian entry points to the residential foyer/lobby are clearly identifiable from the Station Street and Reserve Street frontages and the entries to the commercial/retail tenancies are also clearly identifiable from both street frontages.

### **Territorial Reinforcement**

Defining what is public and private territory assists in determining the function of a space and the appropriate behaviour within a space. This definition enhances the informal security presence within and around the site. Territorial reinforcement is achieved through the creation of a "sphere of influence" around a building by utilizing physical designs such as pavement treatments, landscaping and signage that enable users of a building or an area to develop a sense of proprietorship over it.

Whilst the Guidelines specifically refer to public spaces, the principles can be applied to the proposed development. In this regard, the demarcation between the public domain and private property is clearly defined by the footpaths along the Station Street and Reserve Street frontages.

### **Space Management**

Neglected and/or poorly maintained buildings and/or areas are often more susceptible to criminal activities such as vandalism.

Again, the Guidelines specifically refer to public spaces. Nevertheless, the building manager / management committee will ultimately be responsible for the management and maintenance of the public domain and communal private spaces of the development.

## **5.3 Suitability of the Site**

The site is considered to be suitable for the proposed use and has the capacity to support the proposed additional density and built form.

Having regard to the characteristics of the site and its location, the proposed mixed use development is considered appropriate in that:

- the site is zoned to accommodate this type and form of development;
- the nature and form of the proposed development is generally consistent with the development controls which apply to the site;

- the scale and nature of the development is compatible with the anticipated future development in the locality;
- the size and dimensions of the land are suitable for the scale of the proposed development;
- the site will have access to all utility services to accommodate the demand generated by the proposed development;
- the proposed development is unlikely to result in any adverse traffic impacts;
- the proposed development will not result in any unacceptable or material environmental impacts in relation to adjoining and surrounding properties, particularly in terms of overshadowing, views, privacy (aural and visual), solar access and natural ventilation.

The proposed development is not expected to result in any significant adverse environmental impacts and it is therefore considered that the site is suitable to accommodate the proposed development.

#### 5.4 The Public Interest

The proposed development is considered to be in the wider public interest for the following reasons:

- it is consistent with the objects of the *Environmental Planning and Assessment Act 1979*, specifically because it represents the *orderly and economic use and development of land, promotes good design and amenity of the built environment* and promotes the *delivery and maintenance of affordable housing*;
- the proposal generally satisfies the objectives and intent of *Penrith Local Environmental Plan 2010* and relevant objectives and controls of *Penrith Development Control Plan 2014*;
- the proposal provides a responsive design in terms of its relationship to adjoining development and establishes an appropriate streetscape and human scale through sound urban design principles;
- the design incorporates a number of ESD initiatives that will achieve a high standard of environmental design and sustainability;
- the proposal provides a satisfactory response to the design principles set out in SEPP 65;
- the proposed development provides the community with additional commercial/retail space, together with a form of high quality housing, including an affordable rental housing component, that takes advantage of its proximity to local and regional facilities, public transport and open space areas; and
- the proposal makes a positive contribution towards the State Government's objectives for urban consolidation / renewal and the reduction of urban sprawl.

#### 5.5 Any Submissions Made in Accordance with the Act or Regulations

In accordance with Council's policy, the application will be placed on public exhibition and submissions invited from any interested parties.

As part of the assessment process, Council will take into consideration any matters raised in any submissions received in response to the public exhibition period.

## 6 Conclusion

This Statement of Environmental Effects is submitted as part of the development application submission for the redevelopment of Nos. 118-120 Station Street, Penrith for a six (6) storey mixed use development.

The aim of this Statement has been to:

- describe the proposal;
- demonstrate compliance and/or planning merit of the proposal against the relevant statutory/development controls; and
- provide an assessment of the likely environmental effects of the proposal.

The development seeks to provide two (2) commercial/retail tenancies and eighteen (18) residential apartments (including five (5) affordable rental housing apartments) on the site. Parking for thirty two (32) cars is to be provided in two (2) basement levels. The proposal provides a responsive design in terms of its relationship with adjoining development and establishes an appropriate human scale through sound urban design principles, whilst ensuring that environmentally sustainable principles are incorporated.

The development proposed under this application is considered to be both reasonable and appropriate in the context of the site. The development will have positive social and economic benefits in terms of creating additional resident population that will in turn support local businesses and services.

The proposed development is considered to be consistent with the aims and objectives of *Penrith Local Environmental Plan 2010* and is generally consistent with the applicable development controls under Penrith Development Control Plan 2014. In particular, it is considered that the proposed development exhibits design excellence, as required under Clause 8.4 of *Penrith Local Environmental Plan 2010*. Where variations to the DCP controls are sought, the merits of each area of non-compliance have been discussed in the Statement.

Having regard to the analysis and assessment contained in this Statement, it is requested that Council support the requested variations to the DCP controls and give favourable consideration to the application.

# SEPP65 DESIGN VERIFICATION REPORT

## Mixed Use Development

118 – 120 Station Street

Penrith NSW



Prepared by

**ADS Architects**

November 2020

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## INTRODUCTION

This report should be read in conjunction with the Architectural Drawings prepared by ADS Architects Pty LTD and associated Consultants Reports and Drawings provided with the development application. It responds to the principles set out in the State Environmental Planning Policy 65 – Design Quality of Residential Flat Development.



26<sup>th</sup> November 2020

RE: Mixed Use Development comprising 2 commercial tenancies and 18 Residential Apartments over Basement Parking

## Design Verification Statement – SEPP 65

### Subject Premises: 118 - 120 Station Street, Penrith

Pursuant to the provisions of **State Environmental Planning Policy No. 65 – Design Quality of Residential Flat Development**, I hereby confirm that I am a qualified designer within the meaning of clause 3 of the Environmental Planning & Assessment Regulation 2000.

I verify that:

*(a) I directed the design amendments for the Development Application of **118 – 120 Station Street, Penrith***

*and*

*(b) that the design quality principles set out in Part 2 of State Environmental Planning Policy No 65--Design Quality of Residential Flat Development are achieved for the above Mixed-use development.*

**FULL NAME OF ARCHITECT:** Pavlo Doroch

**QUALIFICATIONS:** Registered Architect no. 9170 in NSW

Master of Architecture UTS

**NAME OF EMPLOYER:** ADS Architects Pty. Limited

Signature,

A handwritten signature in black ink, appearing to read 'Pavlo Doroch'.

Pavlo Doroch

### 3. SEPP65 DESIGN QUALITY PRINCIPLES AND COMPLIANCE ANALYSIS

#### SEPP 65 DESIGN QUALITY PRINCIPLES

##### PRINCIPLE 1

##### CONTEXT AND NEIGHBOURHOOD CHARACTER

*Good design responds and contributes to its context. Context can be defined as the key natural and built features of an area, their relationship and the character they create when combined. It also includes social, economic, health and environmental conditions.*

*Responding to context involves identifying the desirable elements of an area's existing or future character. Well-designed buildings respond to and enhance the qualities and identify of the area including the adjacent sites, streetscape and neighbourhood. Consideration of local context is important for all sites, including sites in established areas, those undergoing change or identified for change.*

##### STATEMENT OF COMPLIANCE

The legal description of the site is Lots 4 & 5, DP 112446 & Lot 6, DP 1003862. The site is zoned *B4 Mixed Use* under the provisions of *Penrith Local Environmental Plan 2010*. It has a total site area of 935.5m<sup>2</sup>. The site is located on the southern side of Station Street, at the intersection of Station and Reserve Streets at Penrith. The site is adjoined by a recently constructed seven (7) storey residential flat building and there is a single storey dual occupancy to the rear. The site is opposite the Penrith War Memorial Swimming Pool (Ripples complex) and to the west is the Nepean Village shopping centre.

The surrounding built form and character is varied and comprises both residential and commercial land uses. However, it is noted that this built form and character will change to that of a more medium to high density residential/mixed use setting as properties in the locality are redeveloped commensurate with the current zonings.

The site is approximately 600m from the Penrith City Centre and 670m from Penrith Railway Station. The closest bus stops are located 70m to the west of the site on Station Street, outside the Ripples complex. There are other bus stops located within walking distance from the site on Derby Street to the east.

**PRINCIPLE 2**

**BUILT FORM AND SCALE**

*Good design achieves a scale, bulk and height appropriate to the existing or desired future character of the street and surrounding buildings. Good design also achieves an appropriate built form for a site and the building's purpose in terms of building alignments, proportions, building type, articulation and the manipulation of building elements. Appropriate built form defines the public domains, contributes to the character of streetscapes and parks, including their views and vistas, and provides internal amenity and outlook.*

**STATEMENT OF COMPLIANCE**

The proposed development is a contemporary interpretation of the future built form of the area and is a building that demonstrates high quality design principles and amenity standards.

The building has been designed to fit comfortably into the overall scale of the existing and anticipated future built form in this location. As such, the height, bulk and scale of the proposed development will be well suited to this context of urban variety and will make a positive contribution to the streetscape character and urban form and scale.

The proposed height and scale of the development are appropriate in its setting and is compatible with the transitional nature of the locality and future developments for the area. The proposal is considered to provide an appropriate prototype for similar developments in the surrounding area.

The highly articulated and fragmented building form further reduces the perceived bulk and height of the proposed development and the amenity impacts associated with the proposed built form. The proposed height is not considered to be responsible for any adverse external amenity impacts to neighbouring properties.

The building will be constructed using a combination of textures including rendered and painted concrete walls, concrete cladding and Colourbond steel sheeting, frosted glass balustrades, anodised aluminium louvres and dark anodised aluminium window and sliding door frames. The multi layered facade consists of a variety of materials colours and design elements that provides articulation and an 'earthy' visual appearance to integrate with the desired character for the precinct.

**PRINCIPLE 3**

**DENSITY**

*Good design achieves a high level of amenity for residents and each apartment, resulting in a density appropriate to the site and its context. Appropriate densities are consistent with the area's existing or projected population. Appropriate densities can be sustained by existing or proposed infrastructure, public transport, access to jobs, community facilities and the environment.*

**STATEMENT OF COMPLIANCE**

The proposed development provides housing opportunities at a density that responds appropriately to the future scale of the locality.

The proposed bulk, scale and building mass is considered compatible with the site area, its locality and surrounding context. The building has been designed to fit comfortably into the overall scale of the existing and anticipated future built form in this location. As such, the height, bulk and scale of the proposed development will be well suited to this context of urban variety and will make a positive contribution to the streetscape character and urban form and scale.

**PRINCIPLE 4**

**SUSTAINABILITY**

*Good design combines positive environmental, social and economic outcomes. Good sustainable design includes use of natural cross ventilation and sunlight for the amenity and liveability of residents and passive thermal design for ventilation, heating and cooling reducing reliance on technology and operation costs. Other elements include recycling and reuse of materials and waste, use of sustainable materials, and deep soil zones for groundwater recharge and vegetation.*

**STATEMENT OF COMPLIANCE**

Landscape areas are well spaced out to ensure adequate amounts of solar access, ventilation and water retention for both the landscaped area itself (grass and plants) and for the individuals who use both the public open space and communal open space. By addressing these factors whilst designing the landscape areas the long-term sustainability from an environmental and social dimension will be achieved.

Selection of appropriate and sustainable materials such as metal louvers and optimal apartment layout and orientation to provide daylight to living areas and cross ventilation have been adopted minimise reliance upon heating, cooling and lighting increasing the economic sustainability and environmental impact of the development.

Other features include:

- Insulation with an R-value of not less than 1.0 around the vertical edges of the perimeter of the slab and/or insulation with an R-value of not less than 1.0 underneath the slab and around the vertical edges of the perimeter of the slab.
- Apartment fixtures that reduce on-going electrical and water costs:
  - - Toilet flushing systems
  - - Kitchen/bathroom taps
  - - LED lights

**PRINCIPLE 5**

**LANDSCAPE**

*Good design recognises that together landscape and buildings operate as an integrated and sustainable system, resulting in attractive developments with good amenity. A positive image and contextual fit of well-designed developments is achieved by contributing to the landscape character of the streetscape and neighbourhood.*

*Good landscape design enhances the development's environmental performance by retaining positive natural features which contribute to the local context, co-ordinating water and soil management, solar access, micro-climate, tree canopy, habitat values, and preserving green networks. Good landscape design optimises usability, privacy and opportunities for social interaction, equitable access, respect for neighbours' amenity, provides for practical establishment and long-term management.*

**STATEMENT OF COMPLIANCE**

The landscape concept for the proposed development is to provide a relatively low maintenance, yet engaging and attractive landscape setting for both the public and private domain of the development.

The communal open space is a mixture of soft and hard landscaping is located on the roof top terrace levels to provide good amenity to all residents. The space comprises of a pergola, BBQ and dining area, concrete seating wall throughout the area, trees to provide good canopy shading, shrubs and grass for kids to play and have picnics.

The Landscape Plan has been submitted with the Development Application for the proposed development.

**PRINCIPLE 6**

**AMENITY**

*Good design positively influences internal and external amenity for residents and neighbours. Achieving good amenity contributes to positive living environments and resident wellbeing.*

*Good amenity combines appropriate room dimensions and shapes, access to sunlight, natural ventilation, outlook, visual and acoustic privacy, storage, indoor and outdoor space, efficient layouts and service areas, and ease of access for all age groups and degrees of mobility.*

**STATEMENT OF COMPLIANCE**

Two features are consistent throughout the entire development: bedroom dimension and open plan layouts. Each bedroom, regardless whether it is a master or regular bedroom has dimensions to cater for queen size beds with built-in wardrobes. This design features provides adequate bedroom space regardless of the age of the occupants. Another consistent feature is the use of open plan layout design, combining the kitchen, dining room and living room together opening onto the units' primary balcony. The apartments are configured in a way to ensure rooms of similar function are adjacent to common walls and the design aims to protect the internal and external functioning of each apartment for optimum use, visual and acoustic privacy for each resident.

One specific design element that illustrates ease of access for all age groups and degrees of mobility is the unseparated paved path from the lift to the pergola, BBQ and dining area in the communal open space. This design will enable residents and visitors who have reduced mobility can access the communal open space amenities.

**PRINCIPLE 7**

**SAFETY**

*Good design optimised safety and security, within the development and the public domain. It provides for quality public and private spaces that are clearly defined and fit for the intended purpose. Opportunities to maximise passive surveillance of public and communal areas promote safety. A positive relationship between public and private spaces is achieved through clearly defined secure access points and well lit and visible areas that are easily maintained and appropriate to the location and purpose.*

**STATEMENT OF COMPLIANCE**

The orientation of the building, the floor layouts and balcony provisions all act as passive surveillance along the access to the residential lobby and stairs is in a highly visible location with a straight line of sight to Station Street with access granted via intercom or security encrypted mechanism (card or code).

## **PRINCIPLE 8**

### **Housing Diversity and Social Interaction**

*Good design achieves a mix of apartment sizes, providing housing choice for different demographics, living needs and household budgets. Well-designed apartment developments respond to social context by providing housing and facilities to suit the existing and future social mix. Good design involves practical and flexible features, including different types of communal spaces for a broad range of people, providing opportunities for social interaction amongst residents.*

### **STATEMENT OF COMPLIANCE**

The site is in a precinct planned for change and renewal. The communal open space includes a tiled access from the lift to the BBQ and dining area to ensure that residents and visitors with mobility needs can equally utilise the space.

The combination of the scale of the proposed building, building façade materials and the architectural detail of the elevations will ensure this proposed development will make a positive contribution to the urban environment and general streetscape.

## **PRINCIPLE 9**

### **Aesthetics**

*Good design achieves a built form that has good proportions and a balanced composition of elements, reflecting the internal layout and structure. Good design uses a variety of materials, colours and textures. The visual appearance of well-designed apartment development responds to the existing or future local context, particularly desirable elements and repetitions of the streetscape.*

### **STATEMENT OF COMPLIANCE**

The proposed development has been carefully designed with respect to the surrounding built and natural environments. The design of the building is contemporary and with a high quality of detailing, articulation and form. The proposal includes a palette of colours and finishes that compliments the streetscape and creates a modern finish to set a high-quality precedent to the precinct. The proposal includes a combination of textures including rendered walls, cladding, privacy louvres and glass detailing in vertical and horizontal patterns to break up the bulk of the facades. The multi-layered facade consists of a variety of materials, colours and design elements that provides articulation and an 'earthy' visual appearance to integrate with the desired character for the precinct.



A U S T R A L I A N  
G E O E N V I R O

**GEOTECHNICAL & ENVIRONMENTAL SERVICES**

DETAILED SITE INVESTIGATION



**Prepared For:** Jim Aitken & David Reeves  
**Address:** 118-120 Station Street Penrith, NSW, 2750  
**Job No:** AG-640\_1  
**Date:** 29-03-21

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**Australian Geotechnical Pty Ltd**

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Appendix A Borehole Location Plan  
 Appendix B Laboratory Test Results  
 Appendix C Supporting Information

## List of Abbreviations

A list of the common abbreviations used throughout this report is provided below.

ACM	- Asbestos Containing Material
AEC	- Area of Environmental Concern
AGST	- Above Ground Storage Tank
AHD	- Australian Height Datum
bgs	- Below ground surface
CSM	- Conceptual site model
BTEX	- Benzene, toluene, ethylbenzene and xylenes
B(a)P	- Benzo(a)pyrene
CCA	- Copper Chromate Arsenate
COC	- Contaminants of Concern
AG	- Australian GeoEnviro Pty Ltd
DEC	- NSW Department of Environment and Conservation
DECCW	- NSW Department of Environment, Climate Change and Water
DQI	- Data quality indicator
DQOs	- Data Quality Objectives
DWE	- NSW Department of Water and Energy
EPA	- NSW Environment Protection Authority
ESA	- Environmental Site Assessment
ha	- Hectare
HIL	- Health based investigation level
ESL	- Ecological Screening Level
HSL	- Health Screening Level
LOR	- Limit of Reporting
OEH	- Office of Environment and Heritage
PAHs	- Polycyclic aromatic hydrocarbons
PID	- Photo-ionisation Detector
PCB	- Polychlorinated Biphenyl
PQL	- Practical Quantitation Limit
QA/QC	- Quality Assurance/Quality Control
RPD	- Relative Percentage Difference
SAQP	- Sampling, Analysis and Quality Plan
TRH	- Total Recoverable Hydrocarbons (previously Total Petroleum Hydrocarbons)
TSS	- Total Suspended Solids
UST	- Underground Storage Tank
VOC	- Volatile Organic Compound

## **Executive summary**

This executive summary presents a synopsis of the Detailed Site Investigation Assessment for 118-120 Station Street Penrith, NSW, 2750. It is understood based on discussions with the client that council has requested a Detailed Site Investigation. It is understood that the proposed development for the site will comprise construction of a six storey residential unit block with 19 units in conjunction with excavation of two (2) levels of basement car parking. The lower basement floor level will be excavated to approximate RL 22.5m.

The object of the Detailed Site Investigation was to ascertain whether the site presents a risk to human health and/or the environment arising from any past/present activities at the site or neighbouring properties. Laboratory testing was undertaken to re-inforce the results of the desktop study. The scope of work included a documentary review and a site investigation, chemical analyses of twelve (12) samples together with preparation of this report.

Based on the desktop assessment and site investigation undertaken by this office, material has been imported to the northern portion of site. The site historical review prepared by this office indicated the following areas of potential environmental concern:

- Potential importation of fill material that may contain various contaminants.

No records are held by the EPA of known or regulated contaminated sites in the vicinity (200m) of the subject site.

Search of Protection of the Environment Operations Public Register (POEO) revealed no licensed and delicensed premises in the vicinity (200m) of the subject site.

An intrusive soil investigation was conducted on the site. A total of six (6) bore holes were excavated across the site in a systematic based pattern. Soil samples were collected from each borehole location. Selected samples were analysed for a range of analytes outlined within section 6.0 of this report. These samples were selected based on site observations (odour, staining etc), and their position within the borehole (i.e. fill or natural).

Twelve (12) samples were recovered and sent to a NATA accredited laboratory for analysis. The concentrations of samples analysed revealed levels below the relevant assessment criteria.

The results of the chemical analyses indicate that the site does not present a risk to human health or the environment. The site is suitable for the proposed development comprising construction of a six storey residential unit block with 19 units in conjunction with excavation of two (2) levels of basement car parking. The lower basement floor level will be excavated to approximate RL 22.5m.

Any other soils or material requiring removal or re-use on site must initially be classified in accordance with Part 1: Classifying Waste, Waste Classification Guidelines (2014) published by the Environment Protection Authority NSW.

This report was carried out in accordance with current NSW EPA guidelines, however, it is possible that further contaminated soils may be present between sampling locations.

## 1.0 INTRODUCTION

### 1.1 Overview

Australian GeoEnviro Pty Ltd (AG) have undertaken a Detailed Site Investigation with testing and analysis as requested by Jim Aitken & David Reeves at the site; 118-120 Station Street Penrith, NSW, 2750 in order to assess whether the site is suitable for construction of a six storey residential unit block with 19 units in conjunction with excavation of two (2) levels of basement car parking. The lower basement floor level will be excavated to approximate RL 22.5m. The proposed plans for this development can be found in Appendix C.

## 2.0 SCOPE OF WORK

This Contamination Assessment has been prepared in general accordance with the following regulatory framework:

- NSW Environment Protection Authority (EPA) "Guidelines for Consultants Reporting on Contaminated Sites" (2020);
- NEPM (2013), Schedule B2 – Guideline on Site Characterisation;
- State Environment Protection Policy 55 (SEPP 55). Remediation of Land Under the Environmental Planning and Assessment Act 1997; and
- National Environment Protection (Assessment of Site Contamination) Measure – National Environmental Protection Council 2013.

The following scope of work was conducted as part of this assessment:

- Review of desktop study report to assist in identification of potential contamination issues:
  - Data from Environment Protection Authority.
  - Data from the Protection of the Environment Operations Public Register (POEO) .
  - Current and past zoning of the land.
- Review of soils and geological maps;
- Review of previous reporting at the site;
- Site Inspection by a representative from AG to ascertain current activities, and any visible signs of contamination;
- Collection of soil samples according to a sampling plan;
- Review and summarise previous reporting undertaken at the site;
- Chemical analysis by a NATA accredited laboratory;
- Assessment of the results of the chemical analysis against the appropriate guidelines; and
- Preparation of a Detailed Site Investigation Report.

### 3.0 SITE DESCRIPTION

The subject site is approximately rectangular in shape, legally defined as Lot 4 and Lot 5 in Deposited Plan 112466 and Lot 6 in Deposited Plan 1003862. The site is bounded by a recently constructed high density unit block to the north-east, low density residential structure to the south-east, Station Street to the north-west with Reserve Street situated to the north. The site measures approximately 30m along the Station Street road frontage and up to 31m across Reserve Street, encompassing a total area of 935.5m<sup>2</sup> based on the site survey.

At the time of the site inspection, the following observations were made:

A qualified environmental consultant inspected the site on the 15<sup>th</sup> March 2020. Site photographs are provided in Appendix C. Observations noted during the inspection are summarised below:

- The site is vacant, no contamination was visually observed across the site.
- Vegetation was generally stripped from the site.
- There were no obvious features associated with any underground tanks (bowsers, breather pipe, inlet valve and piping) or odour that would indicate the potential for contamination.

## 4.0 SITE HISTORY

In order to ascertain the site history, a documentary review of past and present land use at the subject site and the surrounding area has been undertaken by this office, the veracity of the information collected is considered to be relatively high, as the majority of the information was obtained from government sources where possible. The information is summarised as follows.

### 4.1 Previous Land Use and Review of Historical Photographs

**1943** – The site appears to be vacant. Some residential development can be seen around the subject site. Reserve and Station Street has been formed;

**1961**- Two (2) low density residential structures appear to occupy the north-western portion of site. A detached garage can be seen adjacent to the residential structures;

**1970**– Generally the same as 1961. An additional detached structure (garage) can be seen within the southern portion of site, additional vegetation growth can be observed;

**1994**– The image isn't clear, however no change can be seen across the site;

**2009** – No change from the 1994 image;

**Current** – The site is vacant, it is understood that structures occupying the site were demolished in 2018.

Based on site history, the site has been utilised for residential purposes. The site was vacant until receiving residential structures between 1943 and 1961 in conjunction with detached garage structures. Aerial imagery indicates that the residential structures were demolished sometime in 2018.

### 4.2 Previous Environmental Reports

A Preliminary Site Investigation (PSI) was prepared by Australian Geotechnical Pty Ltd (AGE) refer to report number AG-533\_1 dated 18<sup>th</sup> September 2020. Following review of the report AG considered that the potential for significant contamination of soil and groundwater within the site to be low. However a Detailed Site Investigation was recommended based on site history.

#### 4.3 Search of Contaminated Land Management Register (NSW EPA)

A summary of the search of the NSW EPA Contaminated Land Management record of notices for the area can be found. No notices have been issued to the subject site. Furthermore, the listed sites on the register are situated at such a distance (greater than 200m), that they are not believed to have provided a potential contamination risk to the subject property.

#### 4.4 Search of Protection of the Environment Operations Public Register (POEO) of Licensed and Delicensed Premises

A search of the POEO public register of licensed and delicensed premises (DECC) indicated that no licensed or delicensed premises were located within the immediate surrounding area of the site (within 200m).

#### 4.5 Safe Work NSW Records

At the time of reporting, this office had not been given authorisation to request a search of the Stored Chemical Information Database (SCID) for licenses to keep dangerous goods at the site from Safe Work NSW. However, based on the historical ownership and historical aerial photos of the site, no evidence of historical storage of dangerous goods were identified.

#### 4.6 Product Spill & Loss History

No external information was provided for any product spill and loss. However, based on the site inspection, no signs of chemical staining was observed.

#### 4.7 Section 10.7 (2)

A Section 10.7 Planning Certificate describes how a property may be used and the restrictions on development. The Planning Certificate is issued under Section 149 of the Environmental Planning and Assessment Act 1979. At the time of reporting, AGE could not get access to the Planning Certificate.

#### 4.8 Land Zoning

This office understands that the subject site is currently zoned as B4 – Mixed Use.

#### 4.9 Regional Geology

The Soil Landscape Series Sheet 9030ri, Scale 1:100,000, 2002, prepared by the Soil Conservation Service of NSW, indicates that the site is located within the Richmond Landscape which generally comprises of *Quaternary alluvium consisting of sand, silt and gravels derived from sandstone and shale.*

#### 4.10 Groundwater

A search of the NSW Department of Primary Industries Office of Water registered groundwater bores was undertaken by AG, with a search radius of 500m around the site. Six registered recreational bores was identified within a 0.5 km radius of the site. These bores indicated that standing water level of 6m and 8m below surface level.

#### 4.11 Acid Sulfate Soil

To determine whether there is a potential for acid sulfate soils to be present at the site, reference was made to the NSW Office of Environment and Heritage (OEH), eSPADE map viewer. A review of the map indicated that the site is in an area of “No known occurrence” in regards to Acid Sulfate Soil.

### 5.0 SITE CONDITION AND SURROUNDING ENVIRONMENT

A site investigation was conducted on 15<sup>th</sup> March 2021. The field observations are summarized in table 2 below:

**Table 2 – Summary of Field Observations and Aesthetics**

Parameter	Observation
Visible observations on soil contamination	No staining or odours was observed at the time of inspection.
Presence of drums, fill or waste materials	None observed. No visible indicators of underground fuel tanks (bowsers or venting pipes).
Presence of fill	Up to 800mm of filling was observed
Flood potential	Not evident.
Relevant sensitive environments	None observed
Asbestos	None observed

### 6.0 AREAS OF ENVIRONMENTAL CONCERN

Based on the desktop assessment and site investigation undertaken by this office, material has been imported to the northern portion of site. The potential for the site to be contaminated from on-site sources and off-site sources was considered by AG. Based on the findings of our site inspection and site history review actual or potential contamination sources were identified as low. Based on the site inspection, site history, previous reporting and review of available information from the desktop study, the potential Areas of Environmental Concern (AEC) and their associated Contaminants of Concern (CoCs) for the site were identified. These are summarised in the conceptual site model in table 3 below;

**Table 3 – Contaminants of Concern**

Potential AEC	Potentially contaminating activity	Likelihood of Site Impact	Potential CoCs	Comments
Entire site	Importation of fill material from unknown origin.	Low to negligible	Metals, TPH, BTEX, PAH, OCP, OPP, PCB, Asbestos	Based on site observation observations and borehole logs, limited fill material has not been placed at the subject site.

## 7.0 CONCEPTUAL SITE MODEL

In accordance with NEPM (2013), *Schedule B2 – Guideline on Site Characterisation* and to assist in collecting data for the site. The Conceptual Site Model (CSM) detailed in table 4 below considers the potential risks associated with the plausible pollution linkages between the following features:

- Potential human receptors that may be impacted by site contamination are current and future occupants at the site, excavation/construction and maintenance workers during demolition and construction phase of the project and the general public within close proximity to the site;
- Potential sources of contamination, location and the contaminants of concern identified are presented in Section 6.0. Only potential areas of concern with a likelihood of site impact rating of low to high are included;
- Potential exposure pathways;
- Whether the linkage between each source-pathway-receptor is complete, based on our current site inspection, historical information presented and proposed future site condition;
- Potential pollution of surface water could occur through downward and lateral migration of leachable/soluble contaminants. However, this linkage is considered to be unlikely given the low risks to groundwater; and
- The site is not in an area of putrescible waste landfill, 'Inert' waste landfill, uncontrolled fill, reclaimed wetlands and mangroves, organic waste disposal, coal workings, sewers, burial grounds or petroleum and coal-seam gas exploration, therefore a risk assessment of bulk ground gases is not considered necessary.

**Table 4 – Conceptual Site Model**

Potential Sources	Potential Receptor	Exposure Pathway	Complete Linkages	Risk	Justification
Importation of fill material from unknown origin.	Site Users, General Public, Construction Workers	Dermal Contact, Inhalation of Dust.	Yes (current)	Low	Direct contact with soil outside of hardstand areas
		Volatilisation and migration of volatile organic contaminants through the unsaturated zone of soil leading to indoor inhalation. This pathway is considered to be open within landscape areas	Yes (future)	Low	Fill material of unknown origin will remain in future open space areas with direct soil access. Dermal contact, incidental ingestion and VOCs will be limited to landscaped areas.

## 8.0 SAMPLING & ANALYSIS PLAN AND SAMPLING METHODOLOGY

Sampling and analysis was undertaken in order to assess the nature, location and likely distribution of any contamination present at the subject site specifically within areas identified by AG, and also any potential risk posed to human health or the environment. Test results were compared to the relevant New South Wales Environment Protection Authority (NSW EPA) criteria.

The guidelines produced by NSW EPA, 1995 ‘Sampling Design Guidelines for Contaminated Sites’, state that a minimum of six (6) sampling locations is required for a site with an area approximately 628m<sup>2</sup>.

Twelve (12) samples including one (1) duplicate, one (1) split sample, a rinsate sample and trip spike/blank were sent to a NATA accredited laboratory. Samples were selected based on site observations (odour, staining etc), and their position within the borehole (i.e. fill or natural).

## 8.1 Data Quality Objectives (DQO)

Data Quality Objectives (DQO) are qualitative and quantitative criteria that:

- (a) Clarify study objectives.
- (b) Define appropriate types of data to collect.
- (c) Specify the tolerable levels of potential decision making errors.

The purpose of the DQO process is to ensure that the data collection activities are focused on:

- (a) collecting the information needed to make decisions; and
- (b) answering the relevant questions leading up to such decisions.

## 8.2 DQO Process

The DQO process consists of seven distinct steps:

- **State the Problem**
  - As identified in section 7.0 above, the site has multiple potential sources of contamination. The problem is that, due to the potential contamination, an investigation is required to assess whether fill material and underlying natural soils have been contaminated by past/present activities. The objective is to provide information on concentrations of the identified contaminants of concern in the site soils in order to assess sites suitability for the proposed development.
- **Identify the Decision**
  - If contamination is detected, what is the extent of the impact, are levels detected above relevant assessment criteria, does the site pose a risk to human health and/or the environment, how can the risk be managed?
- **Identify Inputs to the Decision**

The input into the decision process is as follows:

- Site and historical observations as detailed in sections 3.0 to 7.0 of this report;
- Soil laboratory analytical data collected, field observations and measurements made during field work;

- A NATA accredited laboratory to test the potential contaminants of concern identified in section 6.0 of this report;
- AG compared the results obtained from material sampled to:
  - NEPM 2013, HIL Table 1A, Column A (HIL's);
  - Environmental Investigation Levels (EIL's);
  - Ecological Screening Levels (ESLs);
  - Health Screening Levels (HSL's); and
  - For asbestos, the assessed soil must not contain bonded asbestos containing material (ACM) in excess of 0.01% w/w and surface soils within the site is free of visible ACM.
- **Define the Study Boundaries**
  - Site investigation was limited to the physical site boundaries with samples collected to a maximum depth of 6200mm below existing surface level, terminated within the natural soil horizon.
- **Develop a Decision Rule**
  - If levels of contamination exceed the relevant assessment criteria and pose a risk to human health and/or the environment, a remedial action plan and validation assessment will be required;
  - The acceptable limits for the QA/QC samples collected during the investigation are presented in Appendix B;
  - Acceptable QA/QC data is presented in Appendix B;
  - To conclude the decision, the assessment decision rules must be met. The results of sampling and analysis of soil must meet the following criteria:
    - The calculated 95% Upper Confidence Level value (95% UCL) for COPCs do not exist in soil samples at concentrations in excess Assessment Criteria;
    - The standard deviation of the results should be less than 50% of the relevant investigation or screening level; and
    - No single analytical result for a COPC should exceed 250% of the relevant investigation level or screening level.

- **Specify Limits on Decision Errors**

This step involves specifying the decision-maker's acceptable limits on decision errors.

- The acceptable limits on decision error to be applied in the investigation have been developed based on Data Quality Indicators of precision, accuracy, representativeness, comparability and completeness;
- The tolerable limits on decision errors are the probability that 95% of data will satisfy the DQI's, therefore a limit on the decision error will be 5% that a conclusive statement may be incorrect; and
- The potential for significant decision errors can be minimised by completing a robust Quality Analysis and Quality Control (QA/QC) program and by designing a sampling programme that includes appropriate sampling and analytical density for the purposes of the investigation.

- **Optimize the Design for Obtaining Data**

- Samples are to be collected within the proposed development area to assess potential contamination.

### 8.3 Sampling Methodology

Each sample location was excavated utilising a 4WD mounted, solid flight auger drill rig to a maximum depth of up to 6200mm. Samples were collected directly from the auger using disposable nitrile gloves by Nathan Smith (Principal Consultant). Field screening of samples will be carried out by a combination of olfactory and visual contamination indications such as odours, staining or the presence of large particles and foreign materials, such as building rubble, asbestos etc.

Six (6) boreholes were excavated across the site in a targeted pattern, exposing the following subsurface conditions;

- Between 0 – 800mm; Natural; Sandy Gravel and SAND, fine to medium Sand, fine to coarse gravels, brown, grey and orange, moist. Samples numbered BH1 to BH6 were selected from this soil horizon.
- Between 400mm – 5500mm; Clayey SAND and sandy CLAY, fine to medium Sand.
- Between 5500mm-6000mm – Gravel and Cobbles

No groundwater was encountered at the time of our visit, however no long term monitoring has been carried out.

The samples were placed in 250g laboratory prepared glass jars which were capped using teflon-sealed screw caps with samples for asbestos analysis placed in separate asbestos bags following field screening. The samples were then placed in a chilled ice box to maintain samples at a temperature below approximately 4°C which were then transported to SGS Pty Ltd (NATA accredited laboratory) under stringent chain of custody (COC) procedures.

A rinsate water sample was collected and placed in a glass bottle, plastic bottle and vials supplied by the laboratory at the end of field work. The fully filled bottles and vials were labelled and also placed in the chilled ice box.

The samples were forwarded to SGS environmental for analysis along with a Chain of Custody which was subsequently returned to confirm the receipt of all samples.

## 9.0 FIELD QUALITY ASSURANCE AND QUALITY CONTROL

The field sampling was undertaken by AG. An Environmental Consultant from AG sampled from the test locations and supervised excavation of each borehole.

### 9.1 Decontamination Procedure

Soil samples were collected using a 4WD mounted, 100mm, solid flight drilling rig. The equipment was decontaminated between sampling events using the following procedure:

- 1) Soil was removed from the auger by scrubbing with a brush;
- 2) The auger was washed with phosphate free detergent in a bucket;
- 3) The auger was then rinsed in distilled water in another bucket;
- 4) Steps 2 and 3 were repeated; and
- 5) The auger was then dried with a clean disposable towel

A sample was then obtained from the final rinsate water composite to be analysed for Petroleum Hydrocarbons (analysed as TRH), Benzene, Toluene, Ethyl Benzene and Xylenes (BTEX), Polycyclic Aromatic Hydrocarbons (PAHs), Organochlorine Pesticides (OCP), Organophosphorous Pesticides (OPP), Arsenic, Cadmium, Copper, Lead, Mercury, Zinc (common metals) and Polychlorinated Biphenyl (PCB). The results are presented as an attachment in Appendix B. All results were below the LOR therefore with the exception of TRH C10-C16 which achieved 140mg/kg. Soil samples submitted to the laboratory were not impacted by TRH C10-C16, therefore it is concluded that the contamination is from the pre-prepared laboratory jars. Therefore, cross-contamination artefacts associated with sampling equipment was not present.

## 9.2 Duplicate and Split Sampling

Blind duplicate and split samples were prepared in the field in order to determine the accuracy of the analytical programs. One split sample was required to meet the 5% duplicate sampling frequency in accordance with NEPM 2013 SchB3. The split sample was analysed for a Petroleum Hydrocarbons (analysed as TRH), Benzene, Toluene, Ethyl Benzene and Xylenes (BTEX), Polycyclic Aromatic Hydrocarbons (PAHs), Arsenic, Cadmium, Copper, Lead, Mercury and Zinc (common metals).

Approximately twice the normal amount of soil was collected and placed in a decontaminated stainless steel bowl. The sample was split into 2 portions. One portion was placed in a 250g laboratory prepared glass jar, capped using Teflon-sealed screw cap. The second portion was placed into a second identical jar, labelled Split and duplicate. Samples were forwarded to SGS Sydney and SGS Melbourne.

The results are attached in SGS certificate of analysis in Appendix B with the acceptable QA/QC data presented in Appendix B. The split and duplicate sample comparison indicates that the difference of laboratory test results produced an acceptable RPD, with exception of the following;

**Table 5 – Field Split & Duplicates**

Laboratory	QC Type	No. of samples	RPD %	QC Acceptance Criteria
SGS Sydney	Split samples	1	<ul style="list-style-type: none"> <li>• 0 – 100% RPD (When the average concentration is &lt; 5 times the LOR/EQL)</li> <li>• 0 – 75% RPD (When the average concentration is 5 to 10 times the LOR/EQL)</li> <li>• 0 – 50% RPD (When the average concentration is &gt; 10 times the LOR/EQL)</li> </ul>	Achieved

The comparisons between the split/duplicate and corresponding original sample indicated generally acceptable RPD overall. Higher RPD were computed for some samples, mainly due to heterogeneity of the soil horizon. Based on the above, the variations are not considered critical and overall the split and duplicate sample comparisons indicate that the test results provided by the primary laboratory can be relied upon for this assessment. A Chain of Custody (COC) for samples sent to the primary and secondary laboratory is attached in Appendix B, showing the sampler, sampling time and date, receipt of samples at the laboratory, analyses to be performed and sample preservation method.

### 9.3 Trip Spike

Trip spikes are obtained from the laboratory on a regular basis. The Laboratory prepares VOC spikes comprising of sand spiked with known concentrations of BTEX. The purpose of the trip spike is to detect any loss of volatiles from the soil samples during field work, transportation, sample extraction or testing. Laboratory prepared trip spike should be included at a rate of one per batch. One trip spike was forwarded to the primary laboratory for BTEX analysis with resulting concentrations compared with the concentrations of the known additions. Test results of the trip spike show a good recovery of the spike concentrations (ranging from 94% to 95%), therefore it is considered that any loss of volatiles from the recovered samples that might have occurred would not affect the outcome or conclusion of this report. Laboratory test certificates are presented in Appendix B.

## 10.0 LABORATORY QUALITY ASSURANCE AND QUALITY CONTROL

### 10.1 Laboratory Accreditation

SGS Australia Pty Ltd is accredited by the National Association of Testing Authorities (NATA) for the analysis carried out and are also accredited for compliance with ISO/IEC 17025.

### 10.2 Sample Holding Times

The holding times for samples at SGS are presented in table 6 below, along with the allowable holding time, detailed in Schedule B (3) of the National Environment Protection (Assessment of Site Contamination) Measure (NEPM, 2013):

**Table 6 – Holding Times**

Laboratory	Analyte	Date Sampled	Date Received	Date of Extraction/ Analysis	Holding Time	Allowable Holding Time
SGS	Metals					6 months*
	Organochloride Pesticides (OCP)					14 days
	Organophosphorus Pesticides (OPP)	15-03-21	18-03-21	22-03-20	days	14 days
	Total Petroleum Hydrocarbons (TPH), PAH, BTEX, Phenols & PCB					14 days

Note 1: (\*) Metals excludes Mercury which has a holding time of 28 days.

Note 2: The soil sample analyses were conducted within the relevant allowable holding time.

### 10.3 Analytical Methods Used and Practical Quantitation Limits

The analytical methods and practical quantitation limits (PQL)/level of reporting (LOR) used by SGS are indicated on the test certificates located in Appendix B.

### 10.4 Laboratory Quality Control

SGS carry out in-house Quality Control testing. This provides the laboratory information regarding the accuracy of testing carried out. The RPD (relative percent difference) results for SGS are within the acceptance criteria adopted by the laboratory (see QC attached in Appendix B). If RPDs are in excess of 30%, the higher concentration is adopted as a conservative measure to identify any contamination present onsite. The results with the exception of 1 duplicate, met the criteria and are tabulated below in table 7:

**Table 7 – RPDs**

Laboratory	QC Type	QC Outliners Occur	QC Acceptance Criteria
SGS	Laboratory Blanks	No	Achieved
SGS	Laboratory Duplicates	No	Achieved
SGS	Matrix Spikes	No	Achieved
SGS	Surrogate Spikes	No	Achieved

## 11.0 QUALITY ASSESSMENT AND QUALITY CONTROL DATA EVALUATION

Quality Assessment and Quality Control have been achieved through the following procedures.

### 11.1 Document Completeness

- Preparation of chain of custody records;
- Laboratory confirmation of receipt of intact samples and relevant chain of custody;
- Laboratory provision of NATA accredited results certificates.

### 11.2 Data Completeness

- Analysis of contaminants of concern;
- Duplicate and split samples within numbers recommended by NEPM.

### 11.3 Data Representativeness

This is achieved by the following:

- Representative sampling of potential contaminants based on the site history and site activities;
- Sufficient duplicate and split sample numbers complying with NEPM;
- Adequate laboratory internal QA and QC methods complying with NEPM.

### 11.4 Data Comparability

- Use of consistent sampling personnel and methodologies;
- Use of NATA accredited laboratories;
- Use of consistent test methods between selected laboratories;
- Use of consistent test methods between samples;
- Acceptable RPD between original samples and duplicate and split sample results.

### 11.5 Data Precision and Accuracy

- The use of NATA accredited laboratories – a requirement of which is adequately trained and experienced staff;
- The use of appropriate and validated laboratory test methods;
- The analysis of duplicate and split samples;
- Acceptable RPD for duplicate and split samples overall;
- Acceptable laboratory performance based on results of blank, matrix spike, control, duplicate and surrogate samples.

### 11.6 Data Evaluation

Based on the above information regarding quality assurance and quality control, it is considered that the quality objectives for field procedures and laboratory results are reliable for this assessment.

**Table 8 – Data Evaluation Summary**

<b>Data Quality Objectives</b>	<b>Field Considerations</b>	<b>Laboratory Considerations</b>	<b>QC Acceptance Criteria</b>
Completeness	Achieved	Achieved	Achieved
Comparability	Achieved	Achieved	Achieved
Representativeness	Achieved	Achieved	Achieved
Precision	Achieved	Achieved	Achieved
Accuracy	Achieved	Achieved	Achieved

## 12.0 BASIS FOR ASSESSMENT CRITERIA

The Assessment criteria used in this investigation have been obtained from the following guideline documents:

- The National Environment Protection (Assessment of Site Contamination) Measure (NEPM, 2013). This document presents risk-based Health Investigation Levels based on a variety of exposure settings for a number of organic and inorganic contaminants. To assess the risk to human health the results of the laboratory analysis are compared against the Health Investigation Levels (“HIL B”) for the exposure setting.
- Ecological Investigation Levels (EIL’s) for metals are applicable for assessing the risk to terrestrial ecosystems. For arsenic and lead, generic EIL are adopted for urban residential land use for aged contamination. For other metals, where available, EIL are calculated using the EIL calculator developed by CSIRO for NEPC. For this assessment, the analytical results were assessed against the available SQG/EIL for urban residential land use for aged contamination.
- Health Screening Levels (HSL’s) have been developed for selected petroleum compounds and fractions and are applicable to assessing human health risk via the inhalation and direct contact pathways. The HSL’s depend on specific soil physicochemical properties, land use scenarios, and the characteristics of building structure.
- Ecological screening levels (ESL’s) have been developed for selected petroleum hydrocarbon compounds and total petroleum hydrocarbon (TPH) fractions and are applicable for assessing risk to terrestrial ecosystems. ESL’s broadly apply to coarse and fine grained soils and various land uses. They are generally applicable to the top 2m of soil. Urban Residential and Public Open Space guidelines were adopted from NEPM Schedule B1, table 1B (5).
- The site does not have history with manufacture of non-stick cookware; fabric, furniture and carpet stain protection applications; food packaging; industrial processes; or fire-fighting foam. Therefore, potential for per-and poly-fluoroalkyl substances (PFAS) was not considered necessary as part of this detailed site investigation

**Table 9 – Basis of Assessment**

Contaminant	Assessment Criteria (mg/kg)			
	Health Based Investigation Level (HIL 'A)	Ecological Investigation Levels (EIL's)**	Health Screening Levels (HSL's)*	Ecological screening levels (ESL's)
<b>Inorganics (Heavy Metals)</b>				
Arsenic (total)	100	20		
Cadmium	20	3		
Chromium (VI)	100	400		
Copper	6000	60		
Lead	300	600		
Mercury	40	1		
Nickel	400	15		
Zinc	7400	200		
<b>Organics</b>				
<b>TPH</b>				
C6 to C10			50	180
>C10 to C16			130	120
>C16 to C34				300
>C34				2800
Benzene			0.6	50
Toulene			190	85
Ethylbenzene			390	70
BaP				0.7
BaP (TEQ)	3			
Xylene			45	105
Napthalene		170	3	
Phenol	3000			
<b>PAH</b>	300			
<b>OCP</b>				
Aldrin + Dieldrin	7			
Chlordane	50			
Heptachlor	6			
DDD+DDE+DDT	260	180^		
<b>OPP</b>				
Diazinon	-			
Ethion	-			
Fenitrothion	-			
<b>PCB</b>	1			
<b>Cyanide</b>	250			
Asbestos	0.01% bonded ACM 0.001% Friable Asbestos	-	-	

Notes: \* Sandy texture 0m-0.5m has been adopted for assessing the upper fill soil horizon.

\*\* Conservative and generic EIL adopted.

^DDT only

### 13.0 LABORATORY TEST RESULTS

Test results are tabulated and presented below in table 10 along with the relevant assessment criteria. Laboratory test certificates are located in Appendix B.

**Table 10 –Test Results**

Contaminant	Maximum Concentration mg/kg	Health Based Investigation Levels HIL 'A' mg/kg	Health Screening Levels (HSL) mg/kg	Ecological Screening and Investigation Levels (EIL, ESL)	95% Upper Confidence Limit (UCL)
Arsenic (total)	15	100	-	20	<SAC
Cadmium	0.6	20	-	3	<SAC
Chromium (VI)	18	100	-	400	<SAC
Copper	130	6000	-	60	<SAC
Lead	85	300	-	600	<SAC
Mercury	0.09	40	-	1	<SAC
Nickel	11	400	-	15	<SAC
Zinc	230	7400	-	200	<SAC
Benzene	<0.1	4	0.6	50	<SAC
Toluene	<0.1	NA	190	85	<SAC
Ethyl Benzene	<0.1	NA	390	70	<SAC
Xylenes (total)	<0.1	NA	-	105	<SAC
Benzo (a) Pyrene	<0.1	-	-	0.7	0.83
BaP (TEQ)	<0.1	3	-	-	1.17
Polynuclear Aromatic Hydrocarbons (PAH's)	17	300	-	40	<SAC
Petroleum Hydrocarbon Components – C6-10	<25	-	50	180	<SAC
Petroleum Hydrocarbon Components – >C10 to C16	<25	-	130	120	<SAC
Petroleum Hydrocarbon Components – >C34	<110	-	2800	300	<SAC
Petroleum Hydrocarbon Components – C16-34	<90	-	300	2800	<SAC
Pentachlorophenol	<0.5	660	-	-	<SAC
Total Cresol	<1.5	25000	-	-	<SAC
Total OC	<0.1	-	-	-	<SAC
Total OP	<1.7	-	-	-	<SAC
Total PCBs	<1	-	-	-	<SAC
Asbestos	None detected	0.01%	-	-	-

Note (A): For statistical assessment sample concentrations, less than the PQL are considered equal to the PQL.

### **13.1 Heavy Metals**

Heavy metal concentrations for Arsenic, Cadmium, Copper, Zinc, Chromium, Lead, Mercury, and Nickel are presented in Table 10. The concentrations of all metals were below the relevant assessment criteria (HILs A, EIL).

### **13.2 OCP, OPP, PCB and Phenols**

The OCP and PCB concentrations, presented in Table 10, were less than the relevant assessment criteria adopted, and therefore the chemical analyses indicate that the site is not contaminated with OCP, OPP, PCB and Phenols.

### **13.3 Total Petroleum Hydrocarbons (TPH), Polycyclic Aromatic Hydrocarbons (PAH) and BTEX**

The TPH, PAH and BTEX concentrations, presented in Table 10, were less than the relevant assessment criteria adopted.

### **13.4 Asbestos Test Results**

The Asbestos test results are presented in table 10. No asbestos was detected within screening samples at the limit of reporting <0.01%w/w.

## 14.0 SITE CHARACTERISATION

As can be seen in the previous Section 13.0 (Laboratory Test Results) the samples analyzed revealed levels below the practical quantitation limit.

The site is characterized as follows, as a result of the information obtained through this assessment:

- The site is proposed for construction of a six storey residential unit block with 19 units in conjunction with excavation of two (2) levels of basement car parking. The lower basement floor level will be excavated to approximate RL 22.5m;
- Twelve (12) samples were recovered and sent to a NATA accredited laboratory for analysis. The concentrations of samples analysed revealed levels below the relevant assessment criteria; and
- Slightly raised levels of heavy metal contamination above the EIL guidelines values may present a risk of phytotoxicity to plants and vegetation which could prevent growth. However, the affected areas are confined within the surface soil horizon which will be excavated as part of the bulk excavation for the proposed basement carparking area, therefore slightly elevated levels of heavy metal concentrations are not considered significant with regards to the proposed development.

## 15.0 VALIDATION

A systematic sampling methodology was chosen for this site, this was done to:

- Select statistically unbiased sampling locations
- Provide sampling locations at regular intervals, spaced evenly across the site.

The samples collected were compared against the Health Investigation Levels (HIL) for the exposure setting; 'HIL A'. The 95% upper confidence limit (UCL) average was also compared to the HIL guidelines.

The samples collected were compared against the investigation levels detailed in section 12.0 for the exposure setting; 'HIL B'. The 95% upper confidence limit (UCL) average was also compared to the relevant guidelines. The data set indicated that the coefficient of variation of the sample measurements were less than 1.2, Therefore, the Students method for determining the 95% UCL was adopted.

## 16.0 CONCLUSION AND RECOMMENDATIONS

Twelve (12) samples were recovered and sent to a NATA accredited laboratory for analysis. The concentrations of samples analysed revealed levels below the relevant assessment criteria.

The results of the chemical analyses indicate that the site does not present a risk to human health or the environment. The site is suitable for the proposed development comprising construction of a six storey residential unit block with 19 units in conjunction with excavation of two (2) levels of basement car parking. The lower basement floor level will be excavated to approximate RL 22.5m.

Any other soils or material requiring removal or re-use on site must initially be classified in accordance with Part 1: Classifying Waste, Waste Classification Guidelines (2014) published by the Environment Protection Authority NSW.

This report was carried out in accordance with current NSW EPA guidelines, however, it is possible that further contaminated soils may be present between sampling locations.

Should you have any queries, please do not hesitate to contact the undersigned.

For and on behalf of  
**Australian GeoEnviro Pty Ltd**



**J. Lu**  
Geotechnical Engineer

## References

- Contaminated Sites – Guidelines for Consultants Reporting on Contaminated Sites. NSW Environment Protection Authority (EPA) 2020.
- Contaminated Sites – Sampling Design Guidelines. NSW Environment Protection Authority (EPA) 1995
- National Environment Protection (Assessment of Site Contamination) Measure – National Environmental Protection Council 2013.
- NEPC, 1999: National Environment Protection Council (1999). National Environment Protection (Assessment of Site Contamination) Measure. Schedule B(3)
- NEPC, 1999: National Environment Protection Council (1999). National Environment Protection (Assessment of Site Contamination) Measure. Schedule B(2) Guideline on Site Characterisation
- ANZECC (2000) Australian and New Zealand Guidelines for Fresh and Marine Water Quality. Australian and New Zealand Environmental and Conservation Council
- Guidelines for the Assessment and Management of Sites Impacted by Hazardous Ground Gases (NSW EPA 2012)
- Guidelines for the Assessment and Management of Groundwater Contamination (NSW DEC 2007)
- Guidelines for Assessing Former Orchards and Market Garden (NSW EPA 2005)
- Designing Sampling Programs for Sites Potentially Contaminated by PFAS (EPA 2016)
- Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997 (NSW EPA 2015).
- Part 1: Classifying Waste, Waste Classification Guidelines (2014) published by the Environment Protection Authority NSW

## Limitations

This report has been prepared for use by the client who commissioned the works in accordance with the project brief and based on information provided by the client. The advice contained in this report relates only to the current project and all results, conclusions and recommendations should be reviewed by a competent person with experience in environmental investigations before being used for any other purpose. Australian GeoEnviro Pty Ltd (AG) accepts no liability for use or interpretation by any person or body other than the client. This report must not be reproduced except in full and must not be amended in any way without prior approval by the client and AG.

The extent of sampling and analysis of soils has been undertaken targeting areas of environmental concern, targeting specific soil strata from where contamination is considered most likely to occur based on knowledge of site history and visual inspection. This approach has been adopted in order to maximise the probability of identifying contaminants, however the approach may not identify contamination that occurs in unexpected locations or from unexpected sources.

Furthermore, soil, rock and aquifer conditions are variable, resulting in the heterogeneous distribution of contaminants across the site. Contaminants have been identified at discrete locations; however conditions between sample locations have been inferred based on estimated geological and hydrogeological conditions, the nature and extent of identified contamination. Boundaries between zones of variable contamination are generally unclear and have been interpreted based on available data and professional judgement. The accuracy with which subsurface conditions have been characterised depends on the frequency of sampling, field and laboratory methods, the uniformity of the substrate and is therefore limited by the scope of works undertaken.

This report is based on targeted sampling and does not provide a complete assessment of the environmental status of the site and is limited to the scope defined therein. Should information become available regarding conditions at the site including previously unknown sources of contamination, AG reserves the right to review the report in the context of the additional information.

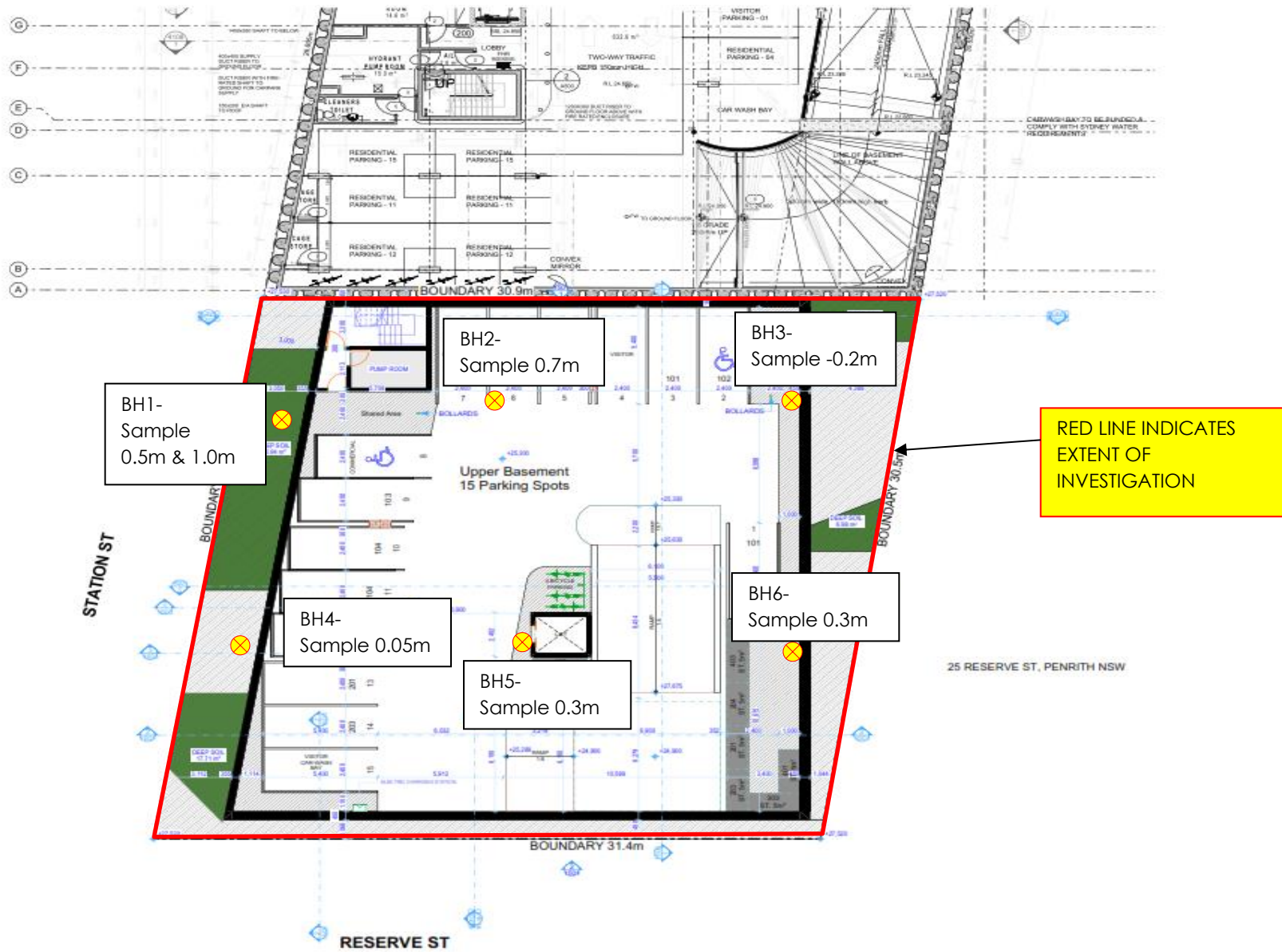
## APPENDIX A

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### FIGURES

*Bore Hole Location Plan*

Source: Upper Basement Floor Plan prepared by ADS Architects Pty Ltd, drawing number 1102 dated 23-03-2021



⊗ Approximate Test Locations

**Jim Aitken & David Reeves**  
 118-120 Station Street Penrith, NSW, 2750

Drawn By	NS
Approved By	NS

Job No	AG-640_1
Drawing No	AG-640DWG
Ref No	
Scale	Not to scale

## APPENDIX B

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### LABORATORY TEST CERTIFICATES

CLIENT DETAILS

LABORATORY DETAILS

Contact **Nathan Smith**  
 Client **AUSTRALIAN GEOTECHNICAL PTY LTD**  
 Address **2 SHIRLEY STREET  
 ROSEHILL NSW 2144**

Manager **Huong Crawford**  
 Laboratory **SGS Alexandria Environmental**  
 Address **Unit 16, 33 Maddox St  
 Alexandria NSW 2015**

Telephone **(Not specified)**  
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Telephone **+61 2 8594 0400**  
 Facsimile **+61 2 8594 0499**  
 Email **au.environmental.sydney@sgs.com**

Project **AG-640**  
 Order Number **AG-640**  
 Samples **12**

SGS Reference **SE217818 R0**  
 Date Received **18/3/2021**  
 Date Reported **25/3/2021**

COMMENTS

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accredited laboratory 2562(4354).  
 Trace metals subcontracted to SGS Melbourne, 10/585 Blackburn Road, Notting Hill, VIC, NATA Accreditation Numbe. 2562/14420, ME319624.  
 No respirable fibres detected in all soil samples using trace analysis technique.  
 Asbestos analysed by Approved Identifier Yusuf Kuthpudin.

SIGNATORIES

**Akheeqar BENIAMEEN**  
 Chemist

**Bennet LO**  
 Senior Organic Chemist/Metals Chemist

**Huong CRAWFORD**  
 Production Manager

**Kamrul AHSAN**  
 Senior Chemist

**Ly Kim HA**  
 Organic Section Head

**Ravee SIVASUBRAMANIAM**  
 Hygiene Team Leader

VOC's in Soil [AN433] Tested: 22/3/2021

PARAMETER	UOM	LOR	BH1-0.5	BH1_1.0	BH2	BH3	BH4
			SOIL	SOIL	SOIL	SOIL	SOIL
			15/3/2021 SE217818.001	15/3/2021 SE217818.002	15/3/2021 SE217818.003	15/3/2021 SE217818.004	15/3/2021 SE217818.005
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	BH5	BH6	SPLIT	Duplicate	Trip Spike
			SOIL	SOIL	SOIL	SOIL	SOIL
			15/3/2021 SE217818.006	15/3/2021 SE217818.007	15/3/2021 SE217818.008	15/3/2021 SE217818.009	15/3/2021 SE217818.011
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	[94%]
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	[95%]
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	[95%]
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	[95%]
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	[95%]
Total Xylenes	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	-
Total BTEX	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	-
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	-

PARAMETER	UOM	LOR	Trip Blank
			SOIL
			15/3/2021 SE217818.012
Benzene	mg/kg	0.1	<0.1
Toluene	mg/kg	0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2
o-xylene	mg/kg	0.1	<0.1
Total Xylenes	mg/kg	0.3	<0.3
Total BTEX	mg/kg	0.6	<0.6
Naphthalene	mg/kg	0.1	<0.1

Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 22/3/2021

PARAMETER	UOM	LOR	BH1-0.5	BH1_1.0	BH2	BH3	BH4
			SOIL	SOIL	SOIL	SOIL	SOIL
			15/3/2021	15/3/2021	15/3/2021	15/3/2021	15/3/2021
			SE217818.001	SE217818.002	SE217818.003	SE217818.004	SE217818.005
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	BH5	BH6	SPLIT	Duplicate
			SOIL	SOIL	SOIL	SOIL
			15/3/2021	15/3/2021	15/3/2021	15/3/2021
			SE217818.006	SE217818.007	SE217818.008	SE217818.009
TRH C6-C9	mg/kg	20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 22/3/2021

PARAMETER	UOM	LOR	BH1-0.5	BH1_1.0	BH2	BH3	BH4
			SOIL	SOIL	SOIL	SOIL	SOIL
			15/3/2021 SE217818.001	15/3/2021 SE217818.002	15/3/2021 SE217818.003	15/3/2021 SE217818.004	15/3/2021 SE217818.005
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210	<210

PARAMETER	UOM	LOR	BH5	BH6	SPLIT	Duplicate
			SOIL	SOIL	SOIL	SOIL
			15/3/2021 SE217818.006	15/3/2021 SE217818.007	15/3/2021 SE217818.008	15/3/2021 SE217818.009
TRH C10-C14	mg/kg	20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<b>46</b>	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 22/3/2021

PARAMETER	UOM	LOR	BH1-0.5	BH1_1.0	BH2	BH3	BH4
			SOIL	SOIL	SOIL	SOIL	SOIL
			15/3/2021 SE217818.001	15/3/2021 SE217818.002	15/3/2021 SE217818.003	15/3/2021 SE217818.004	15/3/2021 SE217818.005
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	0.1
Phenanthrene	mg/kg	0.1	1.2	<0.1	0.2	1.1	2.2
Anthracene	mg/kg	0.1	0.2	<0.1	<0.1	0.2	0.4
Fluoranthene	mg/kg	0.1	2.5	<0.1	0.4	2.4	3.9
Pyrene	mg/kg	0.1	2.5	<0.1	0.4	2.4	3.7
Benzo(a)anthracene	mg/kg	0.1	0.8	<0.1	0.1	0.7	1.1
Chrysene	mg/kg	0.1	0.9	<0.1	0.2	0.8	1.2
Benzo(b&j)fluoranthene	mg/kg	0.1	0.5	<0.1	<0.1	0.5	0.7
Benzo(k)fluoranthene	mg/kg	0.1	0.7	<0.1	<0.1	0.8	1.1
Benzo(a)pyrene	mg/kg	0.1	0.9	<0.1	<0.1	0.8	1.3
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.3	<0.1	<0.1	0.3	0.5
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	0.5	<0.1	<0.1	0.6	0.8
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	1.1	<0.2	<0.2	1.1	1.6
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	1.2	<0.3	<0.3	1.2	1.7
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	1.1	<0.2	<0.2	1.1	1.7
Total PAH (18)	mg/kg	0.8	11	<0.8	1.2	11	17
Total PAH (NEPM/WHO 16)	mg/kg	0.8	11	<0.8	1.2	11	17

PARAMETER	UOM	LOR	BH5	BH6	SPLIT	Duplicate
			SOIL	SOIL	SOIL	SOIL
			15/3/2021 SE217818.006	15/3/2021 SE217818.007	15/3/2021 SE217818.008	15/3/2021 SE217818.009
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	0.8	<0.1	0.1	1.4
Anthracene	mg/kg	0.1	0.2	<0.1	<0.1	0.3
Fluoranthene	mg/kg	0.1	1.8	<0.1	0.2	2.7
Pyrene	mg/kg	0.1	1.8	<0.1	0.2	2.7
Benzo(a)anthracene	mg/kg	0.1	0.5	<0.1	<0.1	0.8
Chrysene	mg/kg	0.1	0.7	<0.1	0.1	0.9
Benzo(b&j)fluoranthene	mg/kg	0.1	0.4	<0.1	<0.1	0.5
Benzo(k)fluoranthene	mg/kg	0.1	0.5	<0.1	<0.1	0.8
Benzo(a)pyrene	mg/kg	0.1	0.6	<0.1	<0.1	0.9
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.3	<0.1	<0.1	0.3
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	0.5	<0.1	<0.1	0.6
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	0.8	<0.2	<0.2	1.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	0.9	<0.3	<0.3	1.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	0.9	<0.2	<0.2	1.2
Total PAH (18)	mg/kg	0.8	8.2	<0.8	<0.8	12
Total PAH (NEPM/WHO 16)	mg/kg	0.8	8.2	<0.8	<0.8	12

OC Pesticides in Soil [AN420] Tested: 22/3/2021

PARAMETER	UOM	LOR	BH1-0.5	BH3
			SOIL - 15/3/2021 SE217818.001	SOIL - 15/3/2021 SE217818.004
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1
Lindane	mg/kg	0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1
o,p'-DDE	mg/kg	0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2
o,p'-DDD	mg/kg	0.1	<0.1	<0.1
o,p'-DDT	mg/kg	0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1
Endrin Ketone	mg/kg	0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1

OP Pesticides in Soil [AN420] Tested: 22/3/2021

PARAMETER	UOM	LOR	BH1-0.5	BH3
			SOIL - 15/3/2021 SE217818.001	SOIL - 15/3/2021 SE217818.004
Dichlorvos	mg/kg	0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7

PCBs in Soil [AN420] Tested: 22/3/2021

PARAMETER	UOM	LOR	BH1-0.5	BH3
			SOIL - 15/3/2021 SE217818.001	SOIL - 15/3/2021 SE217818.004
Arochlor 1016	mg/kg	0.2	<0.2	<0.2
Arochlor 1221	mg/kg	0.2	<0.2	<0.2
Arochlor 1232	mg/kg	0.2	<0.2	<0.2
Arochlor 1242	mg/kg	0.2	<0.2	<0.2
Arochlor 1248	mg/kg	0.2	<0.2	<0.2
Arochlor 1254	mg/kg	0.2	<0.2	<0.2
Arochlor 1260	mg/kg	0.2	<0.2	<0.2
Arochlor 1262	mg/kg	0.2	<0.2	<0.2
Arochlor 1268	mg/kg	0.2	<0.2	<0.2
Total PCBs (Arochlors)	mg/kg	1	<1	<1

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 22/3/2021

PARAMETER	UOM	LOR	BH1-0.5	BH1_1.0	BH2	BH3	BH4
			SOIL	SOIL	SOIL	SOIL	SOIL
			15/3/2021 SE217818.001	15/3/2021 SE217818.002	15/3/2021 SE217818.003	15/3/2021 SE217818.004	15/3/2021 SE217818.005
Arsenic, As	mg/kg	1	<b>14</b>	<b>6</b>	<b>5</b>	<b>5</b>	<b>10</b>
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	<b>10</b>	<b>11</b>	<b>8.0</b>	<b>12</b>	<b>14</b>
Copper, Cu	mg/kg	0.5	<b>9.8</b>	<b>12</b>	<b>130</b>	<b>33</b>	<b>19</b>
Lead, Pb	mg/kg	1	<b>24</b>	<b>11</b>	<b>14</b>	<b>54</b>	<b>85</b>
Nickel, Ni	mg/kg	0.5	<b>11</b>	<b>4.1</b>	<b>6.1</b>	<b>6.7</b>	<b>10</b>
Zinc, Zn	mg/kg	2	<b>30</b>	<b>17</b>	<b>59</b>	<b>100</b>	<b>220</b>

PARAMETER	UOM	LOR	BH5	BH6	SPLIT	Duplicate
			SOIL	SOIL	SOIL	SOIL
			15/3/2021 SE217818.006	15/3/2021 SE217818.007	15/3/2021 SE217818.008	15/3/2021 SE217818.009
Arsenic, As	mg/kg	1	<b>14</b>	<b>3</b>	<b>15</b>	<b>10</b>
Cadmium, Cd	mg/kg	0.3	<b>0.6</b>	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	<b>18</b>	<b>7.7</b>	<b>12</b>	<b>15</b>
Copper, Cu	mg/kg	0.5	<b>23</b>	<b>12</b>	<b>12</b>	<b>18</b>
Lead, Pb	mg/kg	1	<b>66</b>	<b>24</b>	<b>32</b>	<b>67</b>
Nickel, Ni	mg/kg	0.5	<b>8.5</b>	<b>4.1</b>	<b>8.4</b>	<b>9.6</b>
Zinc, Zn	mg/kg	2	<b>230</b>	<b>71</b>	<b>53</b>	<b>170</b>

Mercury in Soil [AN312] Tested: 22/3/2021

			BH1-0.5	BH1_1.0	BH2	BH3	BH4
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			15/3/2021	15/3/2021	15/3/2021	15/3/2021	15/3/2021
PARAMETER	UOM	LOR	SE217818.001	SE217818.002	SE217818.003	SE217818.004	SE217818.005
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<b>0.05</b>

			BH5	BH6	SPLIT	Duplicate
			SOIL	SOIL	SOIL	SOIL
			-	-	-	-
			15/3/2021	15/3/2021	15/3/2021	15/3/2021
PARAMETER	UOM	LOR	SE217818.006	SE217818.007	SE217818.008	SE217818.009
Mercury	mg/kg	0.05	<b>0.09</b>	<0.05	<b>0.06</b>	<0.05

Moisture Content [AN002] Tested: 22/3/2021

			BH1-0.5	BH1_1.0	BH2	BH3	BH4
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			15/3/2021	15/3/2021	15/3/2021	15/3/2021	15/3/2021
PARAMETER	UOM	LOR	SE217818.001	SE217818.002	SE217818.003	SE217818.004	SE217818.005
% Moisture	%w/w	1	<b>18.1</b>	<b>19.0</b>	<b>26.6</b>	<b>12.2</b>	<b>16.5</b>

			BH5	BH6	SPLIT	Duplicate	Trip Blank
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			15/3/2021	15/3/2021	15/3/2021	15/3/2021	15/3/2021
PARAMETER	UOM	LOR	SE217818.006	SE217818.007	SE217818.008	SE217818.009	SE217818.012
% Moisture	%w/w	1	<b>17.8</b>	<b>8.1</b>	<b>14.3</b>	<b>15.2</b>	<1.0

Fibre Identification in soil [AN602] Tested: 23/3/2021

PARAMETER	UOM	LOR	BH1-0.5	BH1_1.0	BH2	BH3	BH4
			SOIL	SOIL	SOIL	SOIL	SOIL
			15/3/2021 SE217818.001	15/3/2021 SE217818.002	15/3/2021 SE217818.003	15/3/2021 SE217818.004	15/3/2021 SE217818.005
Asbestos Detected	No unit	-	No	No	No	No	No
Estimated Fibres*	%w/w	0.01	<0.01	<0.01	<0.01	<0.01	<0.01

PARAMETER	UOM	LOR	BH5	BH6
			SOIL	SOIL
			15/3/2021 SE217818.006	15/3/2021 SE217818.007
Asbestos Detected	No unit	-	No	No
Estimated Fibres*	%w/w	0.01	<0.01	<0.01

VOCs in Water [AN433] Tested: 22/3/2021

PARAMETER	UOM	LOR	RINS
			WATER - 15/3/2021 SE217818.010
Benzene	µg/L	0.5	<0.5
Toluene	µg/L	0.5	<0.5
Ethylbenzene	µg/L	0.5	<0.5
m/p-xylene	µg/L	1	<1
o-xylene	µg/L	0.5	<0.5
Total Xylenes	µg/L	1.5	<1.5
Total BTEX	µg/L	3	<3
Naphthalene	µg/L	0.5	<0.5

Volatile Petroleum Hydrocarbons in Water [AN433] Tested: 22/3/2021

			RINS
			WATER
			-
			15/3/2021
PARAMETER	UOM	LOR	SE217818.010
TRH C6-C9	µg/L	40	<40
Benzene (F0)	µg/L	0.5	<0.5
TRH C6-C10	µg/L	50	<50
TRH C6-C10 minus BTEX (F1)	µg/L	50	<50

TRH (Total Recoverable Hydrocarbons) in Water [AN403] Tested: 22/3/2021

PARAMETER	UOM	LOR	RINS
			WATER - 15/3/2021 SE217818.010
TRH C10-C14	µg/L	50	<50
TRH C15-C28	µg/L	200	<200
TRH C29-C36	µg/L	200	<200
TRH C37-C40	µg/L	200	<200
TRH >C10-C16	µg/L	60	<b>140</b>
TRH >C10-C16 - Naphthalene (F2)	µg/L	60	<b>140</b>
TRH >C16-C34 (F3)	µg/L	500	<500
TRH >C34-C40 (F4)	µg/L	500	<500
TRH C10-C40	µg/L	320	<320

PAH (Polynuclear Aromatic Hydrocarbons) in Water [AN420] Tested: 22/3/2021

PARAMETER	UOM	LOR	RINS
			WATER - 15/3/2021 SE217818.010
Naphthalene	µg/L	0.1	<0.1
2-methylnaphthalene	µg/L	0.1	<0.1
1-methylnaphthalene	µg/L	0.1	<0.1
Acenaphthylene	µg/L	0.1	<0.1
Acenaphthene	µg/L	0.1	<0.1
Fluorene	µg/L	0.1	<0.1
Phenanthrene	µg/L	0.1	<0.1
Anthracene	µg/L	0.1	<0.1
Fluoranthene	µg/L	0.1	<0.1
Pyrene	µg/L	0.1	<0.1
Benzo(a)anthracene	µg/L	0.1	<0.1
Chrysene	µg/L	0.1	<0.1
Benzo(b&j)fluoranthene	µg/L	0.1	<0.1
Benzo(k)fluoranthene	µg/L	0.1	<0.1
Benzo(a)pyrene	µg/L	0.1	<0.1
Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1
Dibenzo(ah)anthracene	µg/L	0.1	<0.1
Benzo(ghi)perylene	µg/L	0.1	<0.1
Total PAH (18)	µg/L	1	<1

Mercury (dissolved) in Water [AN311(Perth)/AN312] Tested: 23/3/2021

			RINS
			WATER
			-
			15/3/2021
PARAMETER	UOM	LOR	SE217818.010
Mercury	mg/L	0.0001	<0.0001

Dissolved Metals in Water by ICPMS [MA-1400.WW.09] Tested: 25/3/2021

PARAMETER	UOM	LOR	RINS
			WATER - 15/3/2021 SE217818.010
Arsenic	mg/L	0.0005	<0.0005
Cadmium	mg/L	0.00005	<0.00005
Chromium	mg/L	0.0005	<0.0005
Copper	mg/L	0.001	<0.001
Lead	mg/L	0.0002	<0.0002
Nickel	mg/L	0.0005	<0.0005
Zinc	mg/L	0.001	<0.001

METHOD

METHODOLOGY SUMMARY

- AN002** The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.
- AN020** Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
- AN040/AN320** A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.
- AN040** A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analysis by ASS or ICP as per USEPA Method 200.8.
- AN311(Perth)/AN312** Mercury by Cold Vapour AAS in Waters: Mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500.
- AN312** Mercury by Cold Vapour AAS in Soils: After digestion with nitric acid, hydrogen peroxide and hydrochloric acid, mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500
- AN403** Total Recoverable Hydrocarbons: Determination of Hydrocarbons by gas chromatography after a solvent extraction. Detection is by flame ionisation detector (FID) that produces an electronic signal in proportion to the combustible matter passing through it. Total Recoverable Hydrocarbons (TRH) are routinely reported as four alkane groupings based on the carbon chain length of the compounds: C6-C9, C10-C14, C15-C28 and C29-C36 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). F2 is reported directly and also corrected by subtracting Naphthalene (from VOC method AN433) where available.
- AN403** Additionally, the volatile C6-C9 fraction may be determined by a purge and trap technique and GC/MS because of the potential for volatiles loss. Total Recoverable Hydrocarbons - Silica (TRH-Si) follows the same method of analysis after silica gel cleanup of the solvent extract. Aliphatic/Aromatic Speciation follows the same method of analysis after fractionation of the solvent extract over silica with differential polarity of the eluent solvents.
- AN403** The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken. This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependent on the use of specific cleanup/fractionation techniques. Reference USEPA 3510B, 8015B.
- AN420** (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
- AN420** SVOC Compounds: Semi-Volatile Organic Compounds (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
- AN433** VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC's are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.
- AN602** Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic 'clues', which provide a reasonable degree of certainty, dispersion staining is a mandatory 'clue' for positive identification. If sufficient 'clues' are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
- AN602** Fibres/material that cannot be unequivocally identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf) The fibres detected may or may not be asbestos fibres.
- AN602** AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples, Section 8.4, Trace Analysis Criteria, Note 4 states:"Depending upon sample condition and fibre type, the detection limit of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."

**AN602**

The sample can be reported "no asbestos found at the reporting limit of 0.1 g/kg" (<0.01%w/w) where AN602 section 4.5 of this method has been followed, and if-

- (a) no trace asbestos fibres have been detected (i.e. no 'respirable' fibres);
- (b) the estimated weight of non-respirable asbestos fibre bundles and/or the estimated weight of asbestos in asbestos-containing materials are found to be less than 0.1g/kg; and
- (c) these non-respirable asbestos fibre bundles and/or the asbestos containing materials are only visible under stereo-microscope viewing conditions.

**MA-1400.09**

Filtered sample is acidified and analysed by ICP-MS.

FOOTNOTES

*	NATA accreditation does not cover the performance of this service.	-	Not analysed.	UOM	Unit of Measure.
**	Indicative data, theoretical holding time exceeded.	NVL	Not validated.	LOR	Limit of Reporting.
***	Indicates that both * and ** apply.	IS	Insufficient sample for analysis.	↑↓	Raised/lowered Limit of Reporting.
		LNR	Sample listed, but not received.		

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received. Solid samples expressed on a dry weight basis.

Where "Total" analyte groups are reported (for example, Total PAHs, Total OC Pesticides) the total will be calculated as the sum of the individual analytes, with those analytes that are reported as <LOR being assumed to be zero. The summed (Total) limit of reporting is calculated by summing the individual analyte LORs and dividing by two. For example, where 16 individual analytes are being summed and each has an LOR of 0.1 mg/kg, the "Totals" LOR will be 1.6 / 2 (0.8 mg/kg). Where only 2 analytes are being summed, the "Total" LOR will be the sum of those two LORs.

Some totals may not appear to add up because the total is rounded after adding up the raw values.

If reported, measurement uncertainty follow the ± sign after the analytical result and is expressed as the expanded uncertainty calculated using a coverage factor of 2, providing a level of confidence of approximately 95%, unless stated otherwise in the comments section of this report.

Results reported for samples tested under test methods with codes starting with ARS-SOP, radionuclide or gross radioactivity concentrations are expressed in becquerel (Bq) per unit of mass or volume or per wipe as stated on the report. Becquerel is the SI unit for activity and equals one nuclear transformation per second.

Note that in terms of units of radioactivity:

- a. 1 Bq is equivalent to 27 pCi
- b. 37 MBq is equivalent to 1 mCi

For results reported for samples tested under test methods with codes starting with ARS-SOP, less than (<) values indicate the detection limit for each radionuclide or parameter for the measurement system used. The respective detection limits have been calculated in accordance with ISO 11929.

The QC and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: [www.sgs.com.au/en-gb/environment-health-and-safety](http://www.sgs.com.au/en-gb/environment-health-and-safety).

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CLIENT DETAILS

LABORATORY DETAILS

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Project	<b>AG-640</b>	SGS Reference	<b>SE217818 R0</b>
Order Number	<b>AG-640</b>	Date Received	18 Mar 2021
Samples	12	Date Reported	25 Mar 2021

COMMENTS

All the laboratory data for each environmental matrix was compared to SGS' stated Data Quality Objectives (DQO). Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the Chain of Custody document.  
This QA/QC Statement must be read in conjunction with the referenced Analytical Report.  
The Statement and the Analytical Report must not be reproduced except in full.

All Data Quality Objectives were met with the exception of the following:

Duplicate	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	1 item
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SAMPLE SUMMARY

Samples clearly labelled	Yes	Complete documentation received	Yes
Sample container provider	SGS	Sample cooling method	Ice Bricks
Samples received in correct containers	Yes	Sample counts by matrix	11 Soil, 1 Water
Date documentation received	18/3/2021	Type of documentation received	COC
Number of eskies/boxes received		Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	14.0°C
Sufficient sample for analysis	Yes	Turnaround time requested	Standard

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

### Fibre Identification in soil

Method: ME-(AU)-[ENV]AN602

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1-0.5	SE217818.001	LB221264	15 Mar 2021	18 Mar 2021	15 Mar 2022	23 Mar 2021	15 Mar 2022	24 Mar 2021
BH1_1.0	SE217818.002	LB221264	15 Mar 2021	18 Mar 2021	15 Mar 2022	23 Mar 2021	15 Mar 2022	24 Mar 2021
BH2	SE217818.003	LB221264	15 Mar 2021	18 Mar 2021	15 Mar 2022	23 Mar 2021	15 Mar 2022	24 Mar 2021
BH3	SE217818.004	LB221264	15 Mar 2021	18 Mar 2021	15 Mar 2022	23 Mar 2021	15 Mar 2022	24 Mar 2021
BH4	SE217818.005	LB221264	15 Mar 2021	18 Mar 2021	15 Mar 2022	23 Mar 2021	15 Mar 2022	24 Mar 2021
BH5	SE217818.006	LB221264	15 Mar 2021	18 Mar 2021	15 Mar 2022	23 Mar 2021	15 Mar 2022	24 Mar 2021
BH6	SE217818.007	LB221264	15 Mar 2021	18 Mar 2021	15 Mar 2022	23 Mar 2021	15 Mar 2022	24 Mar 2021

### Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311(Perth)/AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
RINS	SE217818.010	LB221117	15 Mar 2021	18 Mar 2021	12 Apr 2021	23 Mar 2021	12 Apr 2021	22 Mar 2021

### Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1-0.5	SE217818.001	LB221231	15 Mar 2021	18 Mar 2021	12 Apr 2021	22 Mar 2021	12 Apr 2021	24 Mar 2021
BH1_1.0	SE217818.002	LB221231	15 Mar 2021	18 Mar 2021	12 Apr 2021	22 Mar 2021	12 Apr 2021	24 Mar 2021
BH2	SE217818.003	LB221231	15 Mar 2021	18 Mar 2021	12 Apr 2021	22 Mar 2021	12 Apr 2021	24 Mar 2021
BH3	SE217818.004	LB221231	15 Mar 2021	18 Mar 2021	12 Apr 2021	22 Mar 2021	12 Apr 2021	24 Mar 2021
BH4	SE217818.005	LB221231	15 Mar 2021	18 Mar 2021	12 Apr 2021	22 Mar 2021	12 Apr 2021	24 Mar 2021
BH5	SE217818.006	LB221231	15 Mar 2021	18 Mar 2021	12 Apr 2021	22 Mar 2021	12 Apr 2021	24 Mar 2021
BH6	SE217818.007	LB221231	15 Mar 2021	18 Mar 2021	12 Apr 2021	22 Mar 2021	12 Apr 2021	24 Mar 2021
SPLIT	SE217818.008	LB221231	15 Mar 2021	18 Mar 2021	12 Apr 2021	22 Mar 2021	12 Apr 2021	24 Mar 2021
Duplicate	SE217818.009	LB221231	15 Mar 2021	18 Mar 2021	12 Apr 2021	22 Mar 2021	12 Apr 2021	24 Mar 2021

### Moisture Content

Method: ME-(AU)-[ENV]AN020

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1-0.5	SE217818.001	LB221180	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	27 Mar 2021	24 Mar 2021
BH1_1.0	SE217818.002	LB221180	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	27 Mar 2021	24 Mar 2021
BH2	SE217818.003	LB221180	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	27 Mar 2021	24 Mar 2021
BH3	SE217818.004	LB221180	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	27 Mar 2021	24 Mar 2021
BH4	SE217818.005	LB221180	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	27 Mar 2021	24 Mar 2021
BH5	SE217818.006	LB221180	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	27 Mar 2021	24 Mar 2021
BH6	SE217818.007	LB221180	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	27 Mar 2021	24 Mar 2021
SPLIT	SE217818.008	LB221180	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	27 Mar 2021	24 Mar 2021
Duplicate	SE217818.009	LB221180	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	27 Mar 2021	24 Mar 2021
Trip Blank	SE217818.012	LB221180	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	27 Mar 2021	24 Mar 2021

### OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1-0.5	SE217818.001	LB221177	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
BH1_1.0	SE217818.002	LB221177	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
BH2	SE217818.003	LB221177	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
BH3	SE217818.004	LB221177	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
BH4	SE217818.005	LB221177	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
BH5	SE217818.006	LB221177	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
BH6	SE217818.007	LB221177	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
SPLIT	SE217818.008	LB221177	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
Duplicate	SE217818.009	LB221177	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021

### OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1-0.5	SE217818.001	LB221177	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
BH1_1.0	SE217818.002	LB221177	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
BH2	SE217818.003	LB221177	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
BH3	SE217818.004	LB221177	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
BH4	SE217818.005	LB221177	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
BH5	SE217818.006	LB221177	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
BH6	SE217818.007	LB221177	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
SPLIT	SE217818.008	LB221177	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
Duplicate	SE217818.009	LB221177	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

**PAH (Polynuclear Aromatic Hydrocarbons) in Soil**

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1-0.5	SE217818.001	LB221177	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
BH1_1.0	SE217818.002	LB221177	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
BH2	SE217818.003	LB221177	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
BH3	SE217818.004	LB221177	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
BH4	SE217818.005	LB221177	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
BH5	SE217818.006	LB221177	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
BH6	SE217818.007	LB221177	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
SPLIT	SE217818.008	LB221177	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
Duplicate	SE217818.009	LB221177	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021

**PAH (Polynuclear Aromatic Hydrocarbons) in Water**

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
RINS	SE217818.010	LB221120	15 Mar 2021	18 Mar 2021	22 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021

**PCBs in Soil**

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1-0.5	SE217818.001	LB221177	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
BH1_1.0	SE217818.002	LB221177	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
BH2	SE217818.003	LB221177	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
BH3	SE217818.004	LB221177	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
BH4	SE217818.005	LB221177	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
BH5	SE217818.006	LB221177	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
BH6	SE217818.007	LB221177	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
SPLIT	SE217818.008	LB221177	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
Duplicate	SE217818.009	LB221177	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021

**Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES**

Method: ME-(AU)-[ENV]AN040/AN320

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1-0.5	SE217818.001	LB221230	15 Mar 2021	18 Mar 2021	11 Sep 2021	22 Mar 2021	11 Sep 2021	24 Mar 2021
BH1_1.0	SE217818.002	LB221230	15 Mar 2021	18 Mar 2021	11 Sep 2021	22 Mar 2021	11 Sep 2021	24 Mar 2021
BH2	SE217818.003	LB221230	15 Mar 2021	18 Mar 2021	11 Sep 2021	22 Mar 2021	11 Sep 2021	24 Mar 2021
BH3	SE217818.004	LB221230	15 Mar 2021	18 Mar 2021	11 Sep 2021	22 Mar 2021	11 Sep 2021	24 Mar 2021
BH4	SE217818.005	LB221230	15 Mar 2021	18 Mar 2021	11 Sep 2021	22 Mar 2021	11 Sep 2021	24 Mar 2021
BH5	SE217818.006	LB221230	15 Mar 2021	18 Mar 2021	11 Sep 2021	22 Mar 2021	11 Sep 2021	24 Mar 2021
BH6	SE217818.007	LB221230	15 Mar 2021	18 Mar 2021	11 Sep 2021	22 Mar 2021	11 Sep 2021	24 Mar 2021
SPLIT	SE217818.008	LB221230	15 Mar 2021	18 Mar 2021	11 Sep 2021	22 Mar 2021	11 Sep 2021	24 Mar 2021
Duplicate	SE217818.009	LB221230	15 Mar 2021	18 Mar 2021	11 Sep 2021	22 Mar 2021	11 Sep 2021	24 Mar 2021

**TRH (Total Recoverable Hydrocarbons) in Soil**

Method: ME-(AU)-[ENV]AN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1-0.5	SE217818.001	LB221177	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
BH1_1.0	SE217818.002	LB221177	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
BH2	SE217818.003	LB221177	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
BH3	SE217818.004	LB221177	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
BH4	SE217818.005	LB221177	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
BH5	SE217818.006	LB221177	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
BH6	SE217818.007	LB221177	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
SPLIT	SE217818.008	LB221177	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
Duplicate	SE217818.009	LB221177	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021

**TRH (Total Recoverable Hydrocarbons) in Water**

Method: ME-(AU)-[ENV]AN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
RINS	SE217818.010	LB221120	15 Mar 2021	18 Mar 2021	22 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021

**VOC's in Soil**

Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1-0.5	SE217818.001	LB221176	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
BH1_1.0	SE217818.002	LB221176	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
BH2	SE217818.003	LB221176	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
BH3	SE217818.004	LB221176	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
BH4	SE217818.005	LB221176	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

### VOC's in Soil (continued)

Method: ME-(AU)-IENVJAN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH5	SE217818.006	LB221176	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
BH6	SE217818.007	LB221176	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
SPLIT	SE217818.008	LB221176	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
Duplicate	SE217818.009	LB221176	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
Trip Spike	SE217818.011	LB221176	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
Trip Blank	SE217818.012	LB221176	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021

### VOCs in Water

Method: ME-(AU)-IENVJAN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
RINS	SE217818.010	LB221128	15 Mar 2021	18 Mar 2021	22 Mar 2021	22 Mar 2021	01 May 2021	23 Mar 2021

### Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-IENVJAN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1-0.5	SE217818.001	LB221176	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
BH1_1.0	SE217818.002	LB221176	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
BH2	SE217818.003	LB221176	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
BH3	SE217818.004	LB221176	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
BH4	SE217818.005	LB221176	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
BH5	SE217818.006	LB221176	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
BH6	SE217818.007	LB221176	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
SPLIT	SE217818.008	LB221176	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
Duplicate	SE217818.009	LB221176	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
Trip Spike	SE217818.011	LB221176	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021
Trip Blank	SE217818.012	LB221176	15 Mar 2021	18 Mar 2021	29 Mar 2021	22 Mar 2021	01 May 2021	24 Mar 2021

### Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-IENVJAN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
RINS	SE217818.010	LB221128	15 Mar 2021	18 Mar 2021	22 Mar 2021	22 Mar 2021	01 May 2021	23 Mar 2021

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

**OC Pesticides in Soil**

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	BH1-0.5	SE217818.001	%	60 - 130%	108
	BH3	SE217818.004	%	60 - 130%	117

**OP Pesticides in Soil**

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	BH1-0.5	SE217818.001	%	60 - 130%	89
	BH3	SE217818.004	%	60 - 130%	86
d14-p-terphenyl (Surrogate)	BH1-0.5	SE217818.001	%	60 - 130%	95
	BH3	SE217818.004	%	60 - 130%	87

**PAH (Polynuclear Aromatic Hydrocarbons) in Soil**

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	BH1-0.5	SE217818.001	%	70 - 130%	89
	BH1_1.0	SE217818.002	%	70 - 130%	85
	BH2	SE217818.003	%	70 - 130%	80
	BH3	SE217818.004	%	70 - 130%	86
	BH4	SE217818.005	%	70 - 130%	87
	BH5	SE217818.006	%	70 - 130%	78
	BH6	SE217818.007	%	70 - 130%	87
	SPLIT	SE217818.008	%	70 - 130%	83
	Duplicate	SE217818.009	%	70 - 130%	86
d14-p-terphenyl (Surrogate)	BH1-0.5	SE217818.001	%	70 - 130%	95
	BH1_1.0	SE217818.002	%	70 - 130%	91
	BH2	SE217818.003	%	70 - 130%	87
	BH3	SE217818.004	%	70 - 130%	87
	BH4	SE217818.005	%	70 - 130%	90
	BH5	SE217818.006	%	70 - 130%	86
	BH6	SE217818.007	%	70 - 130%	99
	SPLIT	SE217818.008	%	70 - 130%	95
	Duplicate	SE217818.009	%	70 - 130%	93
d5-nitrobenzene (Surrogate)	BH1-0.5	SE217818.001	%	70 - 130%	82
	BH1_1.0	SE217818.002	%	70 - 130%	74
	BH2	SE217818.003	%	70 - 130%	85
	BH3	SE217818.004	%	70 - 130%	87
	BH4	SE217818.005	%	70 - 130%	78
	BH5	SE217818.006	%	70 - 130%	77
	BH6	SE217818.007	%	70 - 130%	79
	SPLIT	SE217818.008	%	70 - 130%	91
	Duplicate	SE217818.009	%	70 - 130%	92

**PAH (Polynuclear Aromatic Hydrocarbons) in Water**

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	RINS	SE217818.010	%	40 - 130%	60
d14-p-terphenyl (Surrogate)	RINS	SE217818.010	%	40 - 130%	86
d5-nitrobenzene (Surrogate)	RINS	SE217818.010	%	40 - 130%	40

**PCBs in Soil**

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	BH1-0.5	SE217818.001	%	60 - 130%	108
	BH3	SE217818.004	%	60 - 130%	117

**VOC's in Soil**

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BH1-0.5	SE217818.001	%	60 - 130%	75
	BH1_1.0	SE217818.002	%	60 - 130%	73
	BH2	SE217818.003	%	60 - 130%	62
	BH3	SE217818.004	%	60 - 130%	69
	BH4	SE217818.005	%	60 - 130%	67
	BH5	SE217818.006	%	60 - 130%	68
	BH6	SE217818.007	%	60 - 130%	72
	SPLIT	SE217818.008	%	60 - 130%	74
	Duplicate	SE217818.009	%	60 - 130%	68

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

VOC's in Soil (continued)

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	Trip Spike	SE217818.011	%	60 - 130%	71
	Trip Blank	SE217818.012	%	60 - 130%	73
d4-1,2-dichloroethane (Surrogate)	BH1-0.5	SE217818.001	%	60 - 130%	90
	BH1_1.0	SE217818.002	%	60 - 130%	88
	BH2	SE217818.003	%	60 - 130%	85
	BH3	SE217818.004	%	60 - 130%	83
	BH4	SE217818.005	%	60 - 130%	79
	BH5	SE217818.006	%	60 - 130%	81
	BH6	SE217818.007	%	60 - 130%	85
	SPLIT	SE217818.008	%	60 - 130%	89
	Duplicate	SE217818.009	%	60 - 130%	83
	Trip Spike	SE217818.011	%	60 - 130%	93
	Trip Blank	SE217818.012	%	60 - 130%	91
	d8-toluene (Surrogate)	BH1-0.5	SE217818.001	%	60 - 130%
BH1_1.0		SE217818.002	%	60 - 130%	96
BH2		SE217818.003	%	60 - 130%	86
BH3		SE217818.004	%	60 - 130%	87
BH4		SE217818.005	%	60 - 130%	83
BH5		SE217818.006	%	60 - 130%	86
BH6		SE217818.007	%	60 - 130%	92
SPLIT		SE217818.008	%	60 - 130%	93
Duplicate		SE217818.009	%	60 - 130%	87
Trip Spike		SE217818.011	%	60 - 130%	101
Trip Blank		SE217818.012	%	60 - 130%	99

VOCs in Water

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	RINS	SE217818.010	%	40 - 130%	101
d4-1,2-dichloroethane (Surrogate)	RINS	SE217818.010	%	40 - 130%	103
d8-toluene (Surrogate)	RINS	SE217818.010	%	40 - 130%	100

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BH1-0.5	SE217818.001	%	60 - 130%	75
	BH1_1.0	SE217818.002	%	60 - 130%	73
	BH2	SE217818.003	%	60 - 130%	62
	BH3	SE217818.004	%	60 - 130%	69
	BH4	SE217818.005	%	60 - 130%	67
	BH5	SE217818.006	%	60 - 130%	68
	BH6	SE217818.007	%	60 - 130%	72
	SPLIT	SE217818.008	%	60 - 130%	74
	Duplicate	SE217818.009	%	60 - 130%	68
	d4-1,2-dichloroethane (Surrogate)	BH1-0.5	SE217818.001	%	60 - 130%
BH1_1.0		SE217818.002	%	60 - 130%	88
BH2		SE217818.003	%	60 - 130%	85
BH3		SE217818.004	%	60 - 130%	83
BH4		SE217818.005	%	60 - 130%	79
BH5		SE217818.006	%	60 - 130%	81
BH6		SE217818.007	%	60 - 130%	85
SPLIT		SE217818.008	%	60 - 130%	89
Duplicate		SE217818.009	%	60 - 130%	83
d8-toluene (Surrogate)		BH1-0.5	SE217818.001	%	60 - 130%
	BH1_1.0	SE217818.002	%	60 - 130%	96
	BH2	SE217818.003	%	60 - 130%	86
	BH3	SE217818.004	%	60 - 130%	87
	BH4	SE217818.005	%	60 - 130%	83
	BH5	SE217818.006	%	60 - 130%	86
	BH6	SE217818.007	%	60 - 130%	92
	SPLIT	SE217818.008	%	60 - 130%	93
	Duplicate	SE217818.009	%	60 - 130%	87

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

**Volatile Petroleum Hydrocarbons in Water**

**Method: ME-(AU)-[ENV]AN433**

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	RINS	SE217818.010	%	40 - 130%	101
d4-1,2-dichloroethane (Surrogate)	RINS	SE217818.010	%	60 - 130%	103
d8-toluene (Surrogate)	RINS	SE217818.010	%	40 - 130%	100

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

**Mercury (dissolved) in Water**

Method: ME-(AU)-[ENV]AN311(Perth)/AN312

Sample Number	Parameter	Units	LOR	Result
LB221117.001	Mercury	mg/L	0.0001	<0.0001

**Mercury in Soil**

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result
LB221231.001	Mercury	mg/kg	0.05	<0.05

**OC Pesticides in Soil**

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result
LB221177.001	Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
	Alpha BHC	mg/kg	0.1	<0.1
	Lindane	mg/kg	0.1	<0.1
	Heptachlor	mg/kg	0.1	<0.1
	Aldrin	mg/kg	0.1	<0.1
	Beta BHC	mg/kg	0.1	<0.1
	Delta BHC	mg/kg	0.1	<0.1
	Heptachlor epoxide	mg/kg	0.1	<0.1
	Alpha Endosulfan	mg/kg	0.2	<0.2
	Gamma Chlordane	mg/kg	0.1	<0.1
	Alpha Chlordane	mg/kg	0.1	<0.1
	p,p'-DDE	mg/kg	0.1	<0.1
	Dieldrin	mg/kg	0.2	<0.2
	Endrin	mg/kg	0.2	<0.2
	Beta Endosulfan	mg/kg	0.2	<0.2
	p,p'-DDD	mg/kg	0.1	<0.1
	p,p'-DDT	mg/kg	0.1	<0.1
	Endosulfan sulphate	mg/kg	0.1	<0.1
	Endrin Aldehyde	mg/kg	0.1	<0.1
	Methoxychlor	mg/kg	0.1	<0.1
Endrin Ketone	mg/kg	0.1	<0.1	
Isodrin	mg/kg	0.1	<0.1	
Mirex	mg/kg	0.1	<0.1	
Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	108

**OP Pesticides in Soil**

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result	
LB221177.001	Dichlorvos	mg/kg	0.5	<0.5	
	Dimethoate	mg/kg	0.5	<0.5	
	Diazinon (Dimpylate)	mg/kg	0.5	<0.5	
	Fenitrothion	mg/kg	0.2	<0.2	
	Malathion	mg/kg	0.2	<0.2	
	Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	
	Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	
	Bromophos Ethyl	mg/kg	0.2	<0.2	
	Methidathion	mg/kg	0.5	<0.5	
	Ethion	mg/kg	0.2	<0.2	
	Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	
	Surrogates	2-fluorobiphenyl (Surrogate)	%	-	92
		d14-p-terphenyl (Surrogate)	%	-	93

**PAH (Polynuclear Aromatic Hydrocarbons) in Soil**

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result
LB221177.001	Naphthalene	mg/kg	0.1	<0.1
	2-methylnaphthalene	mg/kg	0.1	<0.1
	1-methylnaphthalene	mg/kg	0.1	<0.1
	Acenaphthylene	mg/kg	0.1	<0.1
	Acenaphthene	mg/kg	0.1	<0.1
	Fluorene	mg/kg	0.1	<0.1
	Phenanthrene	mg/kg	0.1	<0.1
	Anthracene	mg/kg	0.1	<0.1

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

**PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)**

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result
LB221177.001	Fluoranthene	mg/kg	0.1	<0.1
	Pyrene	mg/kg	0.1	<0.1
	Benzo(a)anthracene	mg/kg	0.1	<0.1
	Chrysene	mg/kg	0.1	<0.1
	Benzo(a)pyrene	mg/kg	0.1	<0.1
	Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
	Dibenzo(ah)anthracene	mg/kg	0.1	<0.1
	Benzo(ghi)perylene	mg/kg	0.1	<0.1
	Total PAH (18)	mg/kg	0.8	<0.8
	Surrogates	d5-nitrobenzene (Surrogate)	%	-
2-fluorobiphenyl (Surrogate)		%	-	92
d14-p-terphenyl (Surrogate)		%	-	93

**PAH (Polynuclear Aromatic Hydrocarbons) in Water**

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result	
LB221120.001	Naphthalene	µg/L	0.1	<0.1	
	2-methylnaphthalene	µg/L	0.1	<0.1	
	1-methylnaphthalene	µg/L	0.1	<0.1	
	Acenaphthylene	µg/L	0.1	<0.1	
	Acenaphthene	µg/L	0.1	<0.1	
	Fluorene	µg/L	0.1	<0.1	
	Phenanthrene	µg/L	0.1	<0.1	
	Anthracene	µg/L	0.1	<0.1	
	Fluoranthene	µg/L	0.1	<0.1	
	Pyrene	µg/L	0.1	<0.1	
	Benzo(a)anthracene	µg/L	0.1	<0.1	
	Chrysene	µg/L	0.1	<0.1	
	Benzo(a)pyrene	µg/L	0.1	<0.1	
	Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1	
	Dibenzo(ah)anthracene	µg/L	0.1	<0.1	
	Benzo(ghi)perylene	µg/L	0.1	<0.1	
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	54
		2-fluorobiphenyl (Surrogate)	%	-	66
d14-p-terphenyl (Surrogate)		%	-	74	

**PCBs in Soil**

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result
LB221177.001	Arochlor 1016	mg/kg	0.2	<0.2
	Arochlor 1221	mg/kg	0.2	<0.2
	Arochlor 1232	mg/kg	0.2	<0.2
	Arochlor 1242	mg/kg	0.2	<0.2
	Arochlor 1248	mg/kg	0.2	<0.2
	Arochlor 1254	mg/kg	0.2	<0.2
	Arochlor 1260	mg/kg	0.2	<0.2
	Arochlor 1262	mg/kg	0.2	<0.2
	Arochlor 1268	mg/kg	0.2	<0.2
	Total PCBs (Arochlors)	mg/kg	1	<1
Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	108

**Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES**

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result
LB221230.001	Arsenic, As	mg/kg	1	<1
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.5	<0.5
	Copper, Cu	mg/kg	0.5	<0.5
	Nickel, Ni	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1
	Zinc, Zn	mg/kg	2	<2.0

**TRH (Total Recoverable Hydrocarbons) in Soil**

Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR
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Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

**TRH (Total Recoverable Hydrocarbons) in Soil (continued)**

Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR	Result
LB221177.001	TRH C10-C14	mg/kg	20	<20
	TRH C15-C28	mg/kg	45	<45
	TRH C29-C36	mg/kg	45	<45
	TRH C37-C40	mg/kg	100	<100
	TRH C10-C36 Total	mg/kg	110	<110

**TRH (Total Recoverable Hydrocarbons) in Water**

Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR	Result
LB221120.001	TRH C10-C14	µg/L	50	<50
	TRH C15-C28	µg/L	200	<200
	TRH C29-C36	µg/L	200	<200
	TRH C37-C40	µg/L	200	<200

**VOC's in Soil**

Method: ME-(AU)-[ENV]AN433

Sample Number	Parameter	Units	LOR	Result	
LB221176.001	Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.1	<0.1
		Toluene	mg/kg	0.1	<0.1
		Ethylbenzene	mg/kg	0.1	<0.1
		m/p-xylene	mg/kg	0.2	<0.2
		o-xylene	mg/kg	0.1	<0.1
	Polycyclic VOCs	Naphthalene	mg/kg	0.1	<0.1
		Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-
	d8-toluene (Surrogate)		%	-	101
	Bromofluorobenzene (Surrogate)		%	-	78
	Totals	Total BTEX	mg/kg	0.6	<0.6

**VOCs in Water**

Method: ME-(AU)-[ENV]AN433

Sample Number	Parameter	Units	LOR	Result	
LB221128.001	Monocyclic Aromatic Hydrocarbons	Benzene	µg/L	0.5	<0.5
		Toluene	µg/L	0.5	<0.5
		Ethylbenzene	µg/L	0.5	<0.5
		m/p-xylene	µg/L	1	<1
		o-xylene	µg/L	0.5	<0.5
	Polycyclic VOCs	Naphthalene	µg/L	0.5	<0.5
		Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-
	d8-toluene (Surrogate)		%	-	99
	Bromofluorobenzene (Surrogate)		%	-	93

**Volatile Petroleum Hydrocarbons in Soil**

Method: ME-(AU)-[ENV]AN433

Sample Number	Parameter	Units	LOR	Result
LB221176.001	TRH C6-C9	mg/kg	20	<20
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-

**Volatile Petroleum Hydrocarbons in Water**

Method: ME-(AU)-[ENV]AN433

Sample Number	Parameter	Units	LOR	Result	
LB221128.001	TRH C6-C9	µg/L	40	<40	
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	95
		d8-toluene (Surrogate)	%	-	99
		Bromofluorobenzene (Surrogate)	%	-	93

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula:  $RPD = |OriginalResult - ReplicateResult| \times 100 / Mean$

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula:  $MAD = 100 \times SDL / Mean + LR$

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may give a different calculated RPD.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE217818.009	LB221231.013	Mercury	mg/kg	0.05	<0.05	<0.05	144	0

Moisture Content

Method: ME-(AU)-[ENV]AN002

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE217715.010	LB221180.022	% Moisture	%w/w	1	16.5	17.9	36	8
SE217715.011	LB221180.024	% Moisture	%w/w	1	10.6	10.9	39	3
SE217818.012	LB221180.011	% Moisture	%w/w	1	<1	<1	200	0

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE217715.008	LB221177.032	Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
		Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
		Lindane	mg/kg	0.1	<0.1	<0.1	200	0
		Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
		Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
		Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
		Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
		Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
		o,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
		Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
		Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
		Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
		trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
		p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
		Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
		Endrin	mg/kg	0.2	<0.2	<0.2	200	0
		o,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
		o,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
		Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
		p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
		p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
		Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
		Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0		
Endrin Ketone	mg/kg	0.1	<0.1	<0.1	200	0		
Isodrin	mg/kg	0.1	<0.1	<0.1	200	0		
Mirex	mg/kg	0.1	<0.1	<0.1	200	0		
		Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.17	0.16	30	2

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %		
SE217715.008	LB221177.031	Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0		
		Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0		
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0		
		Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0		
		Malathion	mg/kg	0.2	<0.2	<0.2	200	0		
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0		
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0		
		Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0		
		Methodathion	mg/kg	0.5	<0.5	<0.5	200	0		
		Ethion	mg/kg	0.2	<0.2	<0.2	200	0		
		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0		
				Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	200	0
			Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	1
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	6		
SE217818.004	LB221177.030	Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0		
		Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0		
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0		

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula:  $RPD = |OriginalResult - ReplicateResult| \times 100 / Mean$

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula:  $MAD = 100 \times SDL / Mean + LR$

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may give a different calculated RPD.

OP Pesticides in Soil (continued)

Method: ME-(AU)-IENVJAN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE217818.004	LB221177.030	Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
		Malathion	mg/kg	0.2	<0.2	<0.2	200	0
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0
		Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
		Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
		Ethion	mg/kg	0.2	<0.2	<0.2	200	0
		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
		Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	200	0
		Surrogates						
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	2
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	30	7

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-IENVJAN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE217715.008	LB221177.031	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
		Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
		Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
		Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
		Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
		Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
		Pyrene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
		Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
		Carcinogenic PAHs, BaP TEQ <LOR=0	mg/kg	0.2	<0.2	<0.2	200	0
		Carcinogenic PAHs, BaP TEQ <LOR=LOR	mg/kg	0.3	<0.3	<0.3	134	0
		Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	mg/kg	0.2	<0.2	<0.2	175	0
		Total PAH (18)	mg/kg	0.8	<0.8	<0.8	200	0
		Surrogates						
		d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.4	30	5
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	1
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	6
SE217818.004	LB221177.030	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Acenaphthylene	mg/kg	0.1	<0.1	<0.1	166	0
		Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
		Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
		Phenanthrene	mg/kg	0.1	1.1	1.3	39	20
		Anthracene	mg/kg	0.1	0.2	0.2	79	11
		Fluoranthene	mg/kg	0.1	2.4	2.7	34	13
		Pyrene	mg/kg	0.1	2.4	2.7	34	11
		Benzo(a)anthracene	mg/kg	0.1	0.7	0.8	43	11
		Chrysene	mg/kg	0.1	0.8	0.9	41	10
		Benzo(b&j)fluoranthene	mg/kg	0.1	0.5	0.5	50	9
		Benzo(k)fluoranthene	mg/kg	0.1	0.8	0.8	43	7
		Benzo(a)pyrene	mg/kg	0.1	0.8	1.0	41	12
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.3	0.4	61	17
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(ghi)perylene	mg/kg	0.1	0.6	0.6	47	11
		Carcinogenic PAHs, BaP TEQ <LOR=0	mg/kg	0.2	1.1	1.2	27	12
		Carcinogenic PAHs, BaP TEQ <LOR=LOR	mg/kg	0.3	1.2	1.3	34	11
		Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	mg/kg	0.2	1.1	1.3	27	11
		Total PAH (18)	mg/kg	0.8	11	12	37	12

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula:  $RPD = |OriginalResult - ReplicateResult| \times 100 / Mean$

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula:  $MAD = 100 \times SDL / Mean + LR$

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may give a different calculated RPD.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE217818.004	LB221177.030	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.4	30	1
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	2
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	30	7

PAH (Polynuclear Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE217818.010	LB221120.025	Naphthalene	µg/L	0.1	<0.1	<0.1	200	0
		2-methylnaphthalene	µg/L	0.1	<0.1	<0.1	200	0
		1-methylnaphthalene	µg/L	0.1	<0.1	<0.1	200	0
		Acenaphthylene	µg/L	0.1	<0.1	<0.1	200	0
		Acenaphthene	µg/L	0.1	<0.1	<0.1	200	0
		Fluorene	µg/L	0.1	<0.1	<0.1	200	0
		Phenanthrene	µg/L	0.1	<0.1	<0.1	200	0
		Anthracene	µg/L	0.1	<0.1	<0.1	200	0
		Fluoranthene	µg/L	0.1	<0.1	<0.1	200	0
		Pyrene	µg/L	0.1	<0.1	<0.1	200	0
		Benzo(a)anthracene	µg/L	0.1	<0.1	<0.1	200	0
		Chrysene	µg/L	0.1	<0.1	<0.1	200	0
		Benzo(b&j)fluoranthene	µg/L	0.1	<0.1	<0.1	200	0
		Benzo(k)fluoranthene	µg/L	0.1	<0.1	<0.1	200	0
		Benzo(a)pyrene	µg/L	0.1	<0.1	<0.1	200	0
		Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1	<0.1	200	0
		Dibenzo(ah)anthracene	µg/L	0.1	<0.1	<0.1	200	0
		Benzo(ghi)perylene	µg/L	0.1	<0.1	<0.1	200	0
		d5-nitrobenzene (Surrogate)	µg/L	-	0.2	0.2	30	0
		2-fluorobiphenyl (Surrogate)	µg/L	-	0.3	0.3	30	11
		d14-p-terphenyl (Surrogate)	µg/L	-	0.4	0.5	30	5

PCBs in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE217715.008	LB221177.030	Arochlor 1016	mg/kg	0.2	<0.2	<0.2	200	0
		Arochlor 1221	mg/kg	0.2	<0.2	<0.2	200	0
		Arochlor 1232	mg/kg	0.2	<0.2	<0.2	200	0
		Arochlor 1242	mg/kg	0.2	<0.2	<0.2	200	0
		Arochlor 1248	mg/kg	0.2	<0.2	<0.2	200	0
		Arochlor 1254	mg/kg	0.2	<0.2	<0.2	200	0
		Arochlor 1260	mg/kg	0.2	<0.2	<0.2	200	0
		Arochlor 1262	mg/kg	0.2	<0.2	<0.2	200	0
		Arochlor 1268	mg/kg	0.2	<0.2	<0.2	200	0
		Total PCBs (Arochlors)	mg/kg	1	<1	<1	200	0
		Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0	0	30	2

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN40/AN320

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE217904.077	LB221230.014	Arsenic, As	mg/kg	1	99	120	31	19
		Lead, Pb	mg/kg	1	2000	1700	30	15
		Zinc, Zn	mg/kg	2	6200	6000	30	4
SE217904.084	LB221230.022	Arsenic, As	mg/kg	1	35	31	33	10
		Lead, Pb	mg/kg	1	150	570	30	117
		Zinc, Zn	mg/kg	2	230	260	31	13

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE217715.008	LB221177.029	TRH C10-C14	mg/kg	20	<20	<20	200	0
		TRH C15-C28	mg/kg	45	<45	<45	200	0
		TRH C29-C36	mg/kg	45	<45	<45	200	0
		TRH C37-C40	mg/kg	100	<100	<100	200	0
		TRH C10-C36 Total	mg/kg	110	<110	<110	200	0
		TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	200	0
		TRH >C10-C16	mg/kg	25	<25	<25	200	0
		TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0
		TRH >C16-C34 (F3)	mg/kg	90	<90	<90	200	0
		TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula:  $RPD = |OriginalResult - ReplicateResult| \times 100 / Mean$

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula:  $MAD = 100 \times SDL / Mean + LR$

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may give a different calculated RPD.

TRH (Total Recoverable Hydrocarbons) in Soil (continued)

Method: ME-(AU)-IENVJAN403

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %	
SE217818.004	LB221177.028	TRH C10-C14	mg/kg	20	<20	<20	200	0	
		TRH C15-C28	mg/kg	45	<45	<45	200	0	
		TRH C29-C36	mg/kg	45	<45	<45	200	0	
		TRH C37-C40	mg/kg	100	<100	<100	200	0	
		TRH C10-C36 Total	mg/kg	110	<110	<110	200	0	
		TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	200	0	
		TRH F Bands	TRH >C10-C16	mg/kg	25	<25	<25	200	0
		TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0	
		TRH >C16-C34 (F3)	mg/kg	90	<90	<90	200	0	
		TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0	

TRH (Total Recoverable Hydrocarbons) in Water

Method: ME-(AU)-IENVJAN403

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %	
SE217818.010	LB221120.025	TRH C10-C14	µg/L	50	<50	<50	200	0	
		TRH C15-C28	µg/L	200	<200	<200	200	0	
		TRH C29-C36	µg/L	200	<200	<200	200	0	
		TRH C37-C40	µg/L	200	<200	<200	200	0	
		TRH C10-C40	µg/L	320	<320	<320	200	0	
		TRH F Bands	TRH >C10-C16	µg/L	60	140	120	77	17
		TRH >C10-C16 - Naphthalene (F2)	µg/L	60	140	120	77	17	
		TRH >C16-C34 (F3)	µg/L	500	<500	<500	200	0	
TRH >C34-C40 (F4)	µg/L	500	<500	<500	200	0			

VOC's in Soil

Method: ME-(AU)-IENVJAN433

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %			
SE217715.011	LB221176.031	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0		
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0		
		Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0			
		m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0			
		o-xylene	mg/kg	0.1	<0.1	<0.1	200	0			
		Polycyclic	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0		
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.7	8.1	50	7		
		d8-toluene (Surrogate)	mg/kg	-	9.4	8.5	50	10			
		Bromofluorobenzene (Surrogate)	mg/kg	-	6.9	6.4	50	7			
		Totals	Total Xylenes	mg/kg	0.3	<0.3	<0.3	200	0		
		Total BTEX	mg/kg	0.6	<0.6	<0.6	200	0			
		SE217818.009	LB221176.032	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
				Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
				Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0	
m/p-xylene	mg/kg			0.2	<0.2	<0.2	200	0			
o-xylene	mg/kg			0.1	<0.1	<0.1	200	0			
Polycyclic	Naphthalene			mg/kg	0.1	<0.1	<0.1	200	0		
Surrogates	d4-1,2-dichloroethane (Surrogate)			mg/kg	-	8.3	8.8	50	5		
d8-toluene (Surrogate)	mg/kg			-	8.7	9.3	50	7			
Bromofluorobenzene (Surrogate)	mg/kg			-	6.8	7.1	50	4			
Totals	Total Xylenes			mg/kg	0.3	<0.3	<0.3	200	0		
Total BTEX	mg/kg	0.6	<0.6	<0.6	200	0					

VOCs in Water

Method: ME-(AU)-IENVJAN433

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %	
SE217811.002	LB221128.020	Monocyclic	Benzene	µg/L	0.5	<0.5	<0.5	200	0
		Aromatic	Toluene	µg/L	0.5	<0.5	<0.5	200	0
		Ethylbenzene	µg/L	0.5	<0.5	<0.5	200	0	
		m/p-xylene	µg/L	1	<1	<1	200	0	
		o-xylene	µg/L	0.5	<0.5	<0.5	200	0	
		Polycyclic	Naphthalene	µg/L	0.5	<0.5	<0.5	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10.6	9.4	30	12
		d8-toluene (Surrogate)	µg/L	-	10.1	9.8	30	3	
		Bromofluorobenzene (Surrogate)	µg/L	-	10.3	9.7	30	6	
		SE217812.008	LB221128.021	Monocyclic	Benzene	µg/L	0.5	<0.5	<0.5
Aromatic	Toluene			µg/L	0.5	<0.5	<0.5	200	0
Ethylbenzene	µg/L			0.5	<0.5	<0.5	200	0	

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula:  $RPD = |OriginalResult - ReplicateResult| \times 100 / Mean$

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula:  $MAD = 100 \times SDL / Mean + LR$

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may give a different calculated RPD.

VOCs in Water (continued)

Method: ME-(AU)-IENVJAN433

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %	
SE217812.008	LB221128.021	Monocyclic	m/p-xylene	µg/L	1	<1	<1	200	0
		Aromatic	o-xylene	µg/L	0.5	<0.5	<0.5	200	0
		Polycyclic	Naphthalene	µg/L	0.5	<0.5	<0.5	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10.4	9.6	30	8
			d8-toluene (Surrogate)	µg/L	-	10.1	9.9	30	1
			Bromofluorobenzene (Surrogate)	µg/L	-	10.2	10.0	30	2

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-IENVJAN433

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %	
SE217715.011	LB221176.031	TRH C6-C10	mg/kg	25	<25	<25	200	0	
		TRH C6-C9	mg/kg	20	<20	<20	200	0	
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.7	8.1	30	7
			d8-toluene (Surrogate)	mg/kg	-	9.4	8.5	30	10
			Bromofluorobenzene (Surrogate)	mg/kg	-	6.9	6.4	30	7
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
TRH C6-C10 minus BTEX (F1)	mg/kg		25	<25	<25	200	0		
SE217818.009	LB221176.032	TRH C6-C10	mg/kg	25	<25	<25	200	0	
		TRH C6-C9	mg/kg	20	<20	<20	200	0	
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.3	8.8	30	5
			d8-toluene (Surrogate)	mg/kg	-	8.7	9.3	30	7
			Bromofluorobenzene (Surrogate)	mg/kg	-	6.8	7.1	30	4
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
TRH C6-C10 minus BTEX (F1)	mg/kg		25	<25	<25	200	0		

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-IENVJAN433

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %	
SE217811.002	LB221128.020	TRH C6-C10	µg/L	50	<50	<50	200	0	
		TRH C6-C9	µg/L	40	<40	<40	200	0	
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10.6	9.4	30	12
			d8-toluene (Surrogate)	µg/L	-	10.1	9.8	30	3
			Bromofluorobenzene (Surrogate)	µg/L	-	10.3	9.7	30	6
		VPH F Bands	Benzene (F0)	µg/L	0.5	<0.5	<0.5	200	0
TRH C6-C10 minus BTEX (F1)	µg/L		50	<50	<50	200	0		
SE217812.008	LB221128.021	TRH C6-C10	µg/L	50	<50	<50	200	0	
		TRH C6-C9	µg/L	40	<40	<40	200	0	
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10.4	9.6	30	8
			d8-toluene (Surrogate)	µg/L	-	10.1	9.9	30	1
			Bromofluorobenzene (Surrogate)	µg/L	-	10.2	10.0	30	2
		VPH F Bands	Benzene (F0)	µg/L	0.5	<0.5	<0.5	200	0
TRH C6-C10 minus BTEX (F1)	µg/L		50	<50	<50	200	0		

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

**Mercury in Soil**

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB221231.002	Mercury	mg/kg	0.05	0.21	0.2	70 - 130	104

**OC Pesticides in Soil**

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB221177.002	Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	123
	Aldrin	mg/kg	0.1	0.3	0.2	60 - 140	130
	Delta BHC	mg/kg	0.1	0.3	0.2	60 - 140	129
	Dieldrin	mg/kg	0.2	0.3	0.2	60 - 140	127
	Endrin	mg/kg	0.2	0.2	0.2	60 - 140	122
	p,p'-DDT	mg/kg	0.1	0.2	0.2	60 - 140	92
Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.16	0.15	40 - 130	106

**OP Pesticides in Soil**

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %	
LB221177.002	Dichlorvos	mg/kg	0.5	1.5	2	60 - 140	74	
	Diazinon (Dimpylate)	mg/kg	0.5	1.7	2	60 - 140	84	
	Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.4	2	60 - 140	69	
	Ethion	mg/kg	0.2	1.4	2	60 - 140	69	
	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	88
	d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	79	

**PAH (Polynuclear Aromatic Hydrocarbons) in Soil**

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %	
LB221177.002	Naphthalene	mg/kg	0.1	4.0	4	60 - 140	100	
	Acenaphthylene	mg/kg	0.1	4.1	4	60 - 140	102	
	Acenaphthene	mg/kg	0.1	4.3	4	60 - 140	108	
	Phenanthrene	mg/kg	0.1	4.1	4	60 - 140	104	
	Anthracene	mg/kg	0.1	4.2	4	60 - 140	106	
	Fluoranthene	mg/kg	0.1	3.9	4	60 - 140	97	
	Pyrene	mg/kg	0.1	4.4	4	60 - 140	110	
	Benzo(a)pyrene	mg/kg	0.1	4.5	4	60 - 140	113	
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	78
	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	88	
	d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	79	

**PAH (Polynuclear Aromatic Hydrocarbons) in Water**

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %	
LB221120.002	Naphthalene	µg/L	0.1	27	40	60 - 140	69	
	Acenaphthylene	µg/L	0.1	29	40	60 - 140	74	
	Acenaphthene	µg/L	0.1	30	40	60 - 140	74	
	Phenanthrene	µg/L	0.1	34	40	60 - 140	85	
	Anthracene	µg/L	0.1	31	40	60 - 140	77	
	Fluoranthene	µg/L	0.1	33	40	60 - 140	83	
	Pyrene	µg/L	0.1	32	40	60 - 140	80	
	Benzo(a)pyrene	µg/L	0.1	32	40	60 - 140	81	
	Surrogates	d5-nitrobenzene (Surrogate)	µg/L	-	0.3	0.5	40 - 130	56
	2-fluorobiphenyl (Surrogate)	µg/L	-	0.3	0.5	40 - 130	62	
	d14-p-terphenyl (Surrogate)	µg/L	-	0.4	0.5	40 - 130	70	

**PCBs in Soil**

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB221177.002	Arochlor 1260	mg/kg	0.2	0.3	0.4	60 - 140	76

**Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES**

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB221230.002	Arsenic, As	mg/kg	1	340	318.22	80 - 120	106
	Cadmium, Cd	mg/kg	0.3	4.9	4.81	70 - 130	102
	Chromium, Cr	mg/kg	0.5	42	38.31	80 - 120	109
	Copper, Cu	mg/kg	0.5	300	290	80 - 120	105
	Nickel, Ni	mg/kg	0.5	190	187	80 - 120	103

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

**Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES (continued)**

Method: ME-(AU)-[ENV]AN40/AN320

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB221230.002	Lead, Pb	mg/kg	1	92	89.9	80 - 120	103
	Zinc, Zn	mg/kg	2	280	273	80 - 120	102

**TRH (Total Recoverable Hydrocarbons) in Soil**

Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %	
LB221177.002	TRH C10-C14	mg/kg	20	50	40	60 - 140	125	
	TRH C15-C28	mg/kg	45	45	40	60 - 140	113	
	TRH C29-C36	mg/kg	45	<45	40	60 - 140	88	
	TRH F Bands	TRH >C10-C16	mg/kg	25	53	40	60 - 140	133
	TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	95	
	TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	85	

**TRH (Total Recoverable Hydrocarbons) in Water**

Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %	
LB221120.002	TRH C10-C14	µg/L	50	1000	1200	60 - 140	85	
	TRH C15-C28	µg/L	200	1200	1200	60 - 140	102	
	TRH C29-C36	µg/L	200	1400	1200	60 - 140	115	
	TRH F Bands	TRH >C10-C16	µg/L	60	1100	1200	60 - 140	92
	TRH >C16-C34 (F3)	µg/L	500	1400	1200	60 - 140	115	
	TRH >C34-C40 (F4)	µg/L	500	690	600	60 - 140	114	

**VOC's in Soil**

Method: ME-(AU)-[ENV]AN433

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %	
LB221176.002	Monocyclic	Benzene	mg/kg	0.1	4.4	5	60 - 140	87
		Aromatic	Toluene	mg/kg	0.1	4.4	5	60 - 140
	Ethylbenzene		mg/kg	0.1	4.3	5	60 - 140	86
	m/p-xylene		mg/kg	0.2	8.6	10	60 - 140	86
	Surrogates	o-xylene	mg/kg	0.1	4.3	5	60 - 140	85
		d4-1,2-dichloroethane (Surrogate)	mg/kg	-	10.3	10	70 - 130	103
		d8-toluene (Surrogate)	mg/kg	-	11.2	10	70 - 130	112
	Bromofluorobenzene (Surrogate)	mg/kg	-	8.3	10	70 - 130	83	

**VOCs in Water**

Method: ME-(AU)-[ENV]AN433

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %	
LB221128.002	Monocyclic	Benzene	µg/L	0.5	54	45.45	60 - 140	120
		Aromatic	Toluene	µg/L	0.5	53	45.45	60 - 140
	Ethylbenzene		µg/L	0.5	53	45.45	60 - 140	116
	m/p-xylene		µg/L	1	110	90.9	60 - 140	116
	Surrogates	o-xylene	µg/L	0.5	53	45.45	60 - 140	116
		d4-1,2-dichloroethane (Surrogate)	µg/L	-	9.6	10	60 - 140	96
		d8-toluene (Surrogate)	µg/L	-	9.8	10	70 - 130	98
	Bromofluorobenzene (Surrogate)	µg/L	-	9.8	10	70 - 130	98	

**Volatile Petroleum Hydrocarbons in Soil**

Method: ME-(AU)-[ENV]AN433

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %	
LB221176.002	TRH C6-C10	mg/kg	25	75	92.5	60 - 140	81	
	TRH C6-C9	mg/kg	20	64	80	60 - 140	80	
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	10.3	10	70 - 130	103
		Bromofluorobenzene (Surrogate)	mg/kg	-	8.3	10	70 - 130	83
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	49	62.5	60 - 140	78

**Volatile Petroleum Hydrocarbons in Water**

Method: ME-(AU)-[ENV]AN433

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %	
LB221128.002	TRH C6-C10	µg/L	50	1000	946.63	60 - 140	109	
	TRH C6-C9	µg/L	40	900	818.71	60 - 140	109	
	Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	9.6	10	60 - 140	96
		d8-toluene (Surrogate)	µg/L	-	9.8	10	70 - 130	98
		Bromofluorobenzene (Surrogate)	µg/L	-	9.8	10	70 - 130	98
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	µg/L	50	720	639.67	60 - 140	112

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub-sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE217818.001	LB221177.004	Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	-	-
		Alpha BHC	mg/kg	0.1	<0.1	<0.1	-	-
		Lindane	mg/kg	0.1	<0.1	<0.1	-	-
		Heptachlor	mg/kg	0.1	0.3	<0.1	0.2	114
		Aldrin	mg/kg	0.1	0.3	<0.1	0.2	125
		Beta BHC	mg/kg	0.1	<0.1	<0.1	-	-
		Delta BHC	mg/kg	0.1	0.3	<0.1	0.2	124
		Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	-	-
		o,p'-DDE	mg/kg	0.1	<0.1	<0.1	-	-
		Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
		Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
		Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
		trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	-	-
		p,p'-DDE	mg/kg	0.1	<0.1	<0.1	-	-
		Dieldrin	mg/kg	0.2	0.3	<0.2	0.2	120
		Endrin	mg/kg	0.2	0.3	<0.2	0.2	126
		o,p'-DDD	mg/kg	0.1	<0.1	<0.1	-	-
		o,p'-DDT	mg/kg	0.1	<0.1	<0.1	-	-
		Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
		p,p'-DDD	mg/kg	0.1	<0.1	<0.1	-	-
		p,p'-DDT	mg/kg	0.1	0.2	<0.1	0.2	85
		Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	-	-
		Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	-	-
		Methoxychlor	mg/kg	0.1	<0.1	<0.1	-	-
		Endrin Ketone	mg/kg	0.1	<0.1	<0.1	-	-
		Isodrin	mg/kg	0.1	<0.1	<0.1	-	-
		Mirex	mg/kg	0.1	<0.1	<0.1	-	-
		Total CLP OC Pesticides	mg/kg	1	2	<1	-	-
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.18	0.16	-	119

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE217818.001	LB221177.004	Dichlorvos	mg/kg	0.5	1.3	<0.5	2	66
		Dimethoate	mg/kg	0.5	<0.5	<0.5	-	-
		Diazinon (Dimpylate)	mg/kg	0.5	1.7	<0.5	2	84
		Fenitrothion	mg/kg	0.2	<0.2	<0.2	-	-
		Malathion	mg/kg	0.2	<0.2	<0.2	-	-
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.5	<0.2	2	76
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	-	-
		Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	-	-
		Methodathion	mg/kg	0.5	<0.5	<0.5	-	-
		Ethion	mg/kg	0.2	1.4	<0.2	2	71
		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	-	-
		Total OP Pesticides*	mg/kg	1.7	6.0	<1.7	-	-
	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	-	87
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	-	80

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE217818.001	LB221177.004	Naphthalene	mg/kg	0.1	3.9	<0.1	4	98
		2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		Acenaphthylene	mg/kg	0.1	4.2	<0.1	4	103
		Acenaphthene	mg/kg	0.1	4.3	<0.1	4	106
		Fluorene	mg/kg	0.1	<0.1	<0.1	-	-
		Phenanthrene	mg/kg	0.1	4.8	1.2	4	90
		Anthracene	mg/kg	0.1	4.1	0.2	4	97
		Fluoranthene	mg/kg	0.1	5.4	2.5	4	74
		Pyrene	mg/kg	0.1	5.7	2.5	4	82
		Benzo(a)anthracene	mg/kg	0.1	0.5	0.8	-	-
		Chrysene	mg/kg	0.1	0.6	0.9	-	-
		Benzo(b&j)fluoranthene	mg/kg	0.1	0.3	0.5	-	-

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub-sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

**PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)**

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%	
SE217818.001	LB221177.004	Benzo(k)fluoranthene	mg/kg	0.1	0.5	0.7	-	-	
		Benzo(a)pyrene	mg/kg	0.1	4.8	0.9	4	99	
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.2	0.3	-	-	
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	-	-	
		Benzo(ghi)perylene	mg/kg	0.1	0.4	0.5	-	-	
		Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	5.0	1.1	-	-	
		Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	5.1	1.2	-	-	
		Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	5.0	1.1	-	-	
		Total PAH (18)	mg/kg	0.8	40	11	-	-	
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.4	-	91
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	-	87
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	-	80

**PCBs in Soil**

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE217818.001	LB221177.004	Arochlor 1016	mg/kg	0.2	<0.2	<0.2	-	-
		Arochlor 1221	mg/kg	0.2	<0.2	<0.2	-	-
		Arochlor 1232	mg/kg	0.2	<0.2	<0.2	-	-
		Arochlor 1242	mg/kg	0.2	<0.2	<0.2	-	-
		Arochlor 1248	mg/kg	0.2	<0.2	<0.2	-	-
		Arochlor 1254	mg/kg	0.2	<0.2	<0.2	-	-
		Arochlor 1260	mg/kg	0.2	0.3	<0.2	0.4	78
		Arochlor 1262	mg/kg	0.2	<0.2	<0.2	-	-
		Arochlor 1268	mg/kg	0.2	<0.2	<0.2	-	-
		Total PCBs (Arochlors)	mg/kg	1	<1	<1	-	-
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0	0	-

**Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES**

Method: ME-(AU)-[ENV]AN040/AN320

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE217818.001	LB221230.004	Arsenic, As	mg/kg	1	64	14	50	99
		Cadmium, Cd	mg/kg	0.3	43	<0.3	50	86
		Chromium, Cr	mg/kg	0.5	55	10	50	89
		Copper, Cu	mg/kg	0.5	56	9.8	50	92
		Nickel, Ni	mg/kg	0.5	52	11	50	82
		Lead, Pb	mg/kg	1	71	24	50	96
		Zinc, Zn	mg/kg	2	93	30	50	127

**TRH (Total Recoverable Hydrocarbons) in Soil**

Method: ME-(AU)-[ENV]AN403

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%	
SE217818.001	LB221177.004	TRH C10-C14	mg/kg	20	48	<20	40	120	
		TRH C15-C28	mg/kg	45	51	<45	40	93	
		TRH C29-C36	mg/kg	45	<45	<45	40	95	
		TRH C37-C40	mg/kg	100	<100	<100	-	-	
		TRH C10-C36 Total	mg/kg	110	<110	<110	-	-	
		TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	-	-	
		TRH F Bands	TRH >C10-C16	mg/kg	25	52	<25	40	120
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	48	<25	-	-
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	40	120
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	-	-			

**VOC's in Soil**

Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%		
SE217818.001	LB221176.004	Monocyclic	Benzene	mg/kg	0.1	4.1	<0.1	5	82	
			Aromatic	Toluene	mg/kg	0.1	4.1	<0.1	5	82
		Ethylbenzene		mg/kg	0.1	4.0	<0.1	5	80	
		m/p-xylene		mg/kg	0.2	8.2	<0.2	10	81	
		o-xylene		mg/kg	0.1	4.0	<0.1	5	80	
		Polycyclic		Naphthalene	mg/kg	0.1	<0.1	<0.1	-	-
			Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.0	9.0	10	90
				d8-toluene (Surrogate)	mg/kg	-	9.7	9.5	10	97
		Bromofluorobenzene (Surrogate)		mg/kg	-	7.2	7.5	10	72	
		Totals	Total Xylenes	mg/kg	0.3	12	<0.3	-	-	
			Total BTEX	mg/kg	0.6	24	<0.6	-	-	

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub-sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-(ENV)QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

VOCs in Water

Method: ME-(AU)-(ENV)JAN433

QC Sample	Sample Number	Parameter	Units	LOR	Original	Spike	Recovery%	
SE217783.001	LB221128.022	Monocyclic	Benzene	µg/L	0.5	<0.5	45.45	110
		Aromatic	Toluene	µg/L	0.5	<0.5	45.45	109
			Ethylbenzene	µg/L	0.5	<0.5	45.45	107
			m/p-xylene	µg/L	1	<1	90.9	107
			o-xylene	µg/L	0.5	<0.5	45.45	107
		Polycyclic	Naphthalene	µg/L	0.5	<0.5	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10	-	98
			d8-toluene (Surrogate)	µg/L	-	10	-	101
			Bromofluorobenzene (Surrogate)	µg/L	-	10	-	104

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-(ENV)JAN433

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%	
SE217818.001	LB221176.005	TRH C6-C10	mg/kg	25	70	<25	92.5	75	
		TRH C6-C9	mg/kg	20	61	<20	80	76	
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.0	9.0	10	90
			d8-toluene (Surrogate)	mg/kg	-	9.7	9.5	10	97
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.2	7.5	-	72
		VPH F	Benzene (F0)	mg/kg	0.1	4.1	<0.1	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	46	<25	62.5	72

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-(ENV)JAN433

QC Sample	Sample Number	Parameter	Units	LOR	Original	Spike	Recovery%	
SE217783.001	LB221128.022	TRH C6-C10	µg/L	50	<50	946.63	112	
		TRH C6-C9	µg/L	40	<40	818.71	113	
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10	-	98
			d8-toluene (Surrogate)	µg/L	-	10	-	101
			Bromofluorobenzene (Surrogate)	µg/L	-	10	-	104
		VPH F	Benzene (F0)	µg/L	0.5	<0.5	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	µg/L	50	<50	639.67	120

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula:  $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

The original result is the analyte concentration of the matrix spike. The Duplicate result is the analyte concentration of the matrix spike duplicate.

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula:  $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

QC Sample	Sample Number	Parameter	Units	LOR
-----------	---------------	-----------	-------	-----

Samples analysed as received.

Solid samples expressed on a dry weight basis.

QC criteria are subject to internal review according to the SGS QA/QC plan and may be provided on request or alternatively can be found here: [https://www.sgs.com.au/~media/Local/Australia/Documents/Technical Documents/MP-AU-ENV-QU-022\\_QA\\_QC\\_Plan.pdf](https://www.sgs.com.au/~/media/Local/Australia/Documents/Technical Documents/MP-AU-ENV-QU-022_QA_QC_Plan.pdf)

- \* NATA accreditation does not cover the performance of this service .
  - \*\* Indicative data, theoretical holding time exceeded.
  - \*\*\* Indicates that both \* and \*\* apply.
  - Sample not analysed for this analyte.
  - IS Insufficient sample for analysis.
  - LNR Sample listed, but not received.
  - LOR Limit of reporting.
  - QFH QC result is above the upper tolerance.
  - QFL QC result is below the lower tolerance.
- 
- ① At least 2 of 3 surrogates are within acceptance criteria.
  - ② RPD failed acceptance criteria due to sample heterogeneity.
  - ③ Results less than 5 times LOR preclude acceptance criteria for RPD.
  - ④ Recovery failed acceptance criteria due to matrix interference.
  - ⑤ Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).
  - ⑥ LOR was raised due to sample matrix interference.
  - ⑦ LOR was raised due to dilution of significantly high concentration of analyte in sample.
  - ⑧ Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
  - ⑨ Recovery failed acceptance criteria due to sample heterogeneity.
  - ⑩ LOR was raised due to high conductivity of the sample (required dilution).
  - † Refer to relevant report comments for further information.

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CLIENT DETAILS

LABORATORY DETAILS

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Project **AG-640**  
 Order Number **AG-640**  
 Samples **7**

Manager **Huong Crawford**  
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SGS Reference **SE217818 R0**  
 Date Received **18 Mar 2021**  
 Date Reported **25 Mar 2021**

COMMENTS

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accredited laboratory 2562(4354).

Trace metals subcontracted to SGS Melbourne, 10/585 Blackburn Road, Notting Hill, VIC, NATA Accreditation Numbe. 2562/14420, ME319624.

No respirable fibres detected in all soil samples using trace analysis technique.

Asbestos analysed by Approved Identifier Yusuf Kuthpudin.

SIGNATORIES

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**Ravee SIVASUBRAMANIAM**  
 Hygiene Team Leader

RESULTS

Fibre Identification in soil

Method AN602

Laboratory Reference	Client Reference	Matrix	Sample Description	Date Sampled	Fibre Identification	Est.%w/w*
SE217818.001	BH1-0.5	Soil	242g Clay, Rocks	15 Mar 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE217818.002	BH1_1.0	Soil	219g Clay, Rocks	15 Mar 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE217818.003	BH2	Soil	169g Clay, Sand, Soil, Rocks	15 Mar 2021	No Asbestos Found at reporting limit of 0.1g/kg Organic Fibres Detected	<0.01
SE217818.004	BH3	Soil	147g Clay, Sand, Soil, Rocks	15 Mar 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE217818.005	BH4	Soil	160g Clay, Sand, Soil, Rocks	15 Mar 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE217818.006	BH5	Soil	217g Clay, Sand, Soil, Rocks	15 Mar 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE217818.007	BH6	Soil	220g Clay, Sand, Soil, Rocks	15 Mar 2021	No Asbestos Found at reporting limit of 0.1g/kg Organic Fibres Detected	<0.01

METHOD

METHODOLOGY SUMMARY

- AN602 Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic 'clues', which provide a reasonable degree of certainty, dispersion staining is a mandatory 'clue' for positive identification. If sufficient 'clues' are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
- AN602 Fibres/material that cannot be unequivocally identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf) The fibres detected may or may not be asbestos fibres.
- AN602 AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples, Section 8.4, Trace Analysis Criteria, Note 4 states: "Depending upon sample condition and fibre type, the detection limit of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."
- AN602 The sample can be reported "no asbestos found at the reporting limit of 0.1 g/kg" (<0.01%w/w) where AN602 section 4.5 of this method has been followed, and if-
- (a) no trace asbestos fibres have been detected (i.e. no 'respirable' fibres);
  - (b) the estimated weight of non-respirable asbestos fibre bundles and/or the estimated weight of asbestos in asbestos-containing materials are found to be less than 0.1g/kg; and
  - (c) these non-respirable asbestos fibre bundles and/or the asbestos containing materials are only visible under stereo-microscope viewing conditions.

FOOTNOTES

Amosite	-	Brown Asbestos	NA	-	Not Analysed
Chrysotile	-	White Asbestos	LNR	-	Listed, Not Required
Crocidolite	-	Blue Asbestos	*	-	NATA accreditation does not cover the performance of this service.
Amphiboles	-	Amosite and/or Crocidolite	**	-	Indicative data, theoretical holding time exceeded.
			***	-	Indicates that both * and ** apply.

(In reference to soil samples only) This report does not comply with the analytical reporting recommendations in the Western Australian Department of Health Guidelines for the Assessment and Remediation and Management of Asbestos Contaminated sites in Western Australia - May 2009.

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.

Where reported: 'Asbestos Detected': Asbestos detected by polarised light microscopy, including dispersion staining.

Where reported: 'No Asbestos Found': No Asbestos Found by polarised light microscopy, including dispersion staining.

Where reported: 'UMF Detected': Mineral fibres of unknown type detected by polarised light microscopy, including dispersion staining. Confirmation by another independent analytical technique may be necessary.

Even after disintegration it can be very difficult, or impossible, to detect the presence of asbestos in some asbestos-containing bulk materials using polarised light microscopy. This is due to the low grade or small length or diameter of asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials.

The QC and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: [www.sgs.com.au/en-gb/environment-health-and-safety](http://www.sgs.com.au/en-gb/environment-health-and-safety).

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# CHAIN OF CUSTODY & ANALYSIS REQUEST

Page \_\_\_\_ of \_\_\_\_

**SGS Environmental Services**  
**Unit 16, 33 Maddox Street**  
**Alexandria NSW 2015**  
**Telephone No: (02) 85940400**  
**Facsimile No: (02) 85940499**  
**Email: au.samplereceipt.sydney@sgs.com**

Company Name:	Australian Geotechnical	Project Name/No:	AG-640
Address:	2 Shirley Street, Rose Hill, NSW	Purchase Order No:	AG-640
Contact Name:		Results Required By:	4 day TAT
		Telephone:	
		Facsimile:	
		Email Results:	info@austgeo.com.au

Client Sample ID	Date Sampled	Lab Sample ID	WATER	SOIL	PRESERVATIVE	NO OF CONTAINERS	CL10	SV9	Asbestos 0.001%	Asbestos 0.01%	Phenols	BTEX	Asbestos ID building material	Cyanide																								
BH1-0.5	15-03-21	1		x		2	X	x		x																												
BH1-1.0	15-03-21	2		X		2	X			X																												
BH2	15-03-21	3		x		2	x			x																												
BH3	15-03-21	4		x		2	x	x		X																												
BH4	15-03-21	5		x		2	x			x																												
BH5	15-03-21	6		x		2	x			x																												
BH6	15-03-21	7		x		2	x			x																												
SPLIT	15-03-21	8		X		1	X																															
Duplicate	15-03-21	9		x		1	x																															
RINS	15-03-21	10		x		6	X																															
Trip Spike/Blank		11/12			x	2						x																										

**SGS EHS Sydney COC**  
**SE217818**



Relinquished By: NS	Date/Time: 18-03-21	Received By: <i>[Signature]</i>	Date/Time: 18-3-21 4:20
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: <u>Yes</u> /No	Temperature: Ambient / Chilled <u>14.0</u>	Sample Cooler Sealed: <u>Yes</u> /No	Laboratory Quotation No:
Comments:			

CLIENT DETAILS

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Project **AG-640**  
 Order Number **SE217818**  
 Samples **12**

LABORATORY DETAILS

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 Laboratory **SGS Melbourne EH&S**  
 Address **10/585 Blackburn Road  
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 Facsimile **+61395743399**  
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SGS Reference **ME319624 R0**  
 Date Received **25 Mar 2021**  
 Date Reported **25 Mar 2021**

COMMENTS

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accredited laboratory 2562(14420).

SIGNATORIES

**Ryan ZHANG**  
 Inorganics Team Leader

Parameter	Units	LOR	Sample Number	Sample Matrix	Sample Date	Sample Name
			ME319624.001	Soil	15 Mar 2021	SE217818.001
			ME319624.002	Soil	15 Mar 2021	SE217818.002
			ME319624.003	Soil	15 Mar 2021	SE217818.003
			ME319624.004	Soil	15 Mar 2021	SE217818.004

Dissolved Metals in Water by ICPMS Method: MA-1400.WW.09 Tested: 25/3/2021

Parameter	Units	LOR	ME319624.001	ME319624.002	ME319624.003	ME319624.004
Arsenic	mg/L	0.0005	-	-	-	-
Cadmium	mg/L	0.00005	-	-	-	-
Chromium	mg/L	0.0005	-	-	-	-
Copper	mg/L	0.001	-	-	-	-
Lead	mg/L	0.0002	-	-	-	-
Nickel	mg/L	0.0005	-	-	-	-
Zinc	mg/L	0.001	-	-	-	-

	Sample Number	ME319624.005	ME319624.006	ME319624.007	ME319624.008
	Sample Matrix	Soil	Soil	Soil	Soil
	Sample Date	15 Mar 2021	15 Mar 2021	15 Mar 2021	15 Mar 2021
	Sample Name	SE217818.005	SE217818.006	SE217818.007	SE217818.008
Parameter	Units	LOR			

Dissolved Metals in Water by ICPMS Method: MA-1400.WW.09 Tested: 25/3/2021

Arsenic	mg/L	0.0005	-	-	-	-
Cadmium	mg/L	0.00005	-	-	-	-
Chromium	mg/L	0.0005	-	-	-	-
Copper	mg/L	0.001	-	-	-	-
Lead	mg/L	0.0002	-	-	-	-
Nickel	mg/L	0.0005	-	-	-	-
Zinc	mg/L	0.001	-	-	-	-

	Sample Number	ME319624.009	ME319624.010	ME319624.011	ME319624.012
	Sample Matrix	Soil	Water	Soil	Soil
	Sample Date	15 Mar 2021	15 Mar 2021	15 Mar 2021	15 Mar 2021
	Sample Name	SE217818.009	SE217818.010	SE217818.011	SE217818.012
Parameter	Units	LOR			

**Dissolved Metals in Water by ICPMS Method: MA-1400.WW.09 Tested: 25/3/2021**

Parameter	Units	LOR	ME319624.009	ME319624.010	ME319624.011	ME319624.012
Arsenic	mg/L	0.0005	-	<0.0005	-	-
Cadmium	mg/L	0.00005	-	<0.00005	-	-
Chromium	mg/L	0.0005	-	<0.0005	-	-
Copper	mg/L	0.001	-	<0.001	-	-
Lead	mg/L	0.0002	-	<0.0002	-	-
Nickel	mg/L	0.0005	-	<0.0005	-	-
Zinc	mg/L	0.001	-	<0.001	-	-

MB blank results are compared to the Limit of Reporting

LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.

DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

Dissolved Metals in Water by ICPMS Method: MA-1400.WW.09

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Arsenic	LB040089	mg/L	0.0005	<0.0005	107%
Cadmium	LB040089	mg/L	0.00005	<0.00005	106%
Chromium	LB040089	mg/L	0.0005	<0.0005	106%
Copper	LB040089	mg/L	0.001	<0.001	107%
Lead	LB040089	mg/L	0.0002	<0.0002	105%
Nickel	LB040089	mg/L	0.0005	<0.0005	106%
Zinc	LB040089	mg/L	0.001	<0.001	102%

METHOD

METHODOLOGY SUMMARY

MA-1400.09

Filtered sample is acidified and analysed by ICP-MS.

FOOTNOTES

IS	Insufficient sample for analysis.	LOR	Limit of Reporting
LNR	Sample listed, but not received.	↑↓	Raised or Lowered Limit of Reporting
*	NATA accreditation does not cover the performance of this service.	QFH	QC result is above the upper tolerance
**	Indicative data, theoretical holding time exceeded.	QFL	QC result is below the lower tolerance
***	Indicates that both * and ** apply.	-	The sample was not analysed for this analyte
		NVL	Not Validated

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.  
Solid samples expressed on a dry weight basis.

Where "Total" analyte groups are reported (for example, Total PAHs, Total OC Pesticides) the total will be calculated as the sum of the individual analytes, with those analytes that are reported as <LOR being assumed to be zero. The summed (Total) limit of reporting is calculated by summing the individual analyte LORs and dividing by two. For example, where 16 individual analytes are being summed and each has an LOR of 0.1 mg/kg, the "Totals" LOR will be 1.6 / 2 (0.8 mg/kg). Where only 2 analytes are being summed, the "Total" LOR will be the sum of those two LORs.

Some totals may not appear to add up because the total is rounded after adding up the raw values.

If reported, measurement uncertainty follow the ± sign after the analytical result and is expressed as the expanded uncertainty calculated using a coverage factor of 2, providing a level of confidence of approximately 95%, unless stated otherwise in the comments section of this report.

Results reported for samples tested under test methods with codes starting with ARS-SOP, radionuclide or gross radioactivity concentrations are expressed in becquerel (Bq) per unit of mass or volume or per wipe as stated on the report. Becquerel is the SI unit for activity and equals one nuclear transformation per second.

Note that in terms of units of radioactivity:

- a. 1 Bq is equivalent to 27 pCi
- b. 37 MBq is equivalent to 1 mCi

For results reported for samples tested under test methods with codes starting with ARS-SOP, less than (<) values indicate the detection limit for each radionuclide or parameter for the measurement system used. The respective detection limits have been calculated in accordance with ISO 11929.

The QC and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: [www.sgs.com.au/en-gb/environment-health-and-safety](http://www.sgs.com.au/en-gb/environment-health-and-safety).

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 Email nathan@austgeo.com.au

Project **AG-640**  
 Order Number **AG-640**  
 Samples 12

LABORATORY DETAILS

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 Laboratory SGS Alexandria Environmental  
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 Alexandria NSW 2015

Telephone +61 2 8594 0400  
 Facsimile +61 2 8594 0499  
 Email au.environmental.sydney@sgs.com

Samples Received Thu 18/3/2021  
 Report Due Wed 24/3/2021  
 SGS Reference **SE217818**

SUBMISSION DETAILS

This is to confirm that 12 samples were received on Thursday 18/3/2021. Results are expected to be ready by COB Wednesday 24/3/2021. Please quote SGS reference SE217818 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Samples clearly labelled	Yes	Complete documentation received	Yes
Sample container provider	SGS	Sample cooling method	Ice Bricks
Samples received in correct containers	Yes	Sample counts by matrix	11 Soil, 1 Water
Date documentation received	18/3/2021	Type of documentation received	COC
Number of eskies/boxes received		Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	14.0°C
Sufficient sample for analysis	Yes	Turnaround time requested	Standard

Unless otherwise instructed, water and bulk samples will be held for one month from date of report, and soil samples will be held for two months.

COMMENTS

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CLIENT DETAILS

Client **AUSTRALIAN GEOTECHNICAL PTY LTD**

Project **AG-640**

SUMMARY OF ANALYSIS

No.	Sample ID	OC Pesticides in Soil	OP Pesticides in Soil	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	PCBs in Soil	Total Recoverable Elements in Soil/Waste	TRH (Total Recoverable Hydrocarbons) in Soil	VOC's in Soil	Volatile Petroleum Hydrocarbons in Soil
001	BH1-0.5	29	14	26	11	7	10	11	7
002	BH1_1.0	-	-	26	-	7	10	11	7
003	BH2	-	-	26	-	7	10	11	7
004	BH3	29	14	26	11	7	10	11	7
005	BH4	-	-	26	-	7	10	11	7
006	BH5	-	-	26	-	7	10	11	7
007	BH6	-	-	26	-	7	10	11	7
008	SPLIT	-	-	26	-	7	10	11	7
009	Duplicate	-	-	26	-	7	10	11	7
011	Trip Spike	-	-	-	-	-	-	11	-
012	Trip Blank	-	-	-	-	-	-	11	-

CONTINUED OVERLEAF

The above table represents SGS' interpretation of the client-supplied Chain Of Custody document.  
 The numbers shown in the table indicate the number of results requested in each package.  
 Please indicate as soon as possible should your request differ from these details .  
 Testing as per this table shall commence immediately unless the client intervenes with a correction .

CLIENT DETAILS

Client **AUSTRALIAN GEOTECHNICAL PTY LTD**

Project **AG-640**

SUMMARY OF ANALYSIS

No.	Sample ID	Fibre Identification in soil	Mercury in Soil	Moisture Content	VOCs in Water
001	BH1-0.5	2	1	1	-
002	BH1_1.0	2	1	1	-
003	BH2	2	1	1	-
004	BH3	2	1	1	-
005	BH4	2	1	1	-
006	BH5	2	1	1	-
007	BH6	2	1	1	-
008	SPLIT	-	1	1	-
009	Duplicate	-	1	1	-
010	RINS	-	-	-	11
012	Trip Blank	-	-	1	-

CONTINUED OVERLEAF

The above table represents SGS' interpretation of the client-supplied Chain Of Custody document.  
 The numbers shown in the table indicate the number of results requested in each package.  
 Please indicate as soon as possible should your request differ from these details .  
 Testing as per this table shall commence immediately unless the client intervenes with a correction .

CLIENT DETAILS

Client **AUSTRALIAN GEOTECHNICAL PTY LTD**

Project **AG-640**

SUMMARY OF ANALYSIS

No.	Sample ID	Mercury (dissolved) in Water	PAH (Polynuclear Aromatic Hydrocarbons) in Water	Trace Metals (Dissolved) in Water by ICPMS	TRH (Total Recoverable Hydrocarbons) in Water	Volatile Petroleum Hydrocarbons in Water
010	RINS	1	22	7	9	7

The above table represents SGS' interpretation of the client-supplied Chain Of Custody document. The numbers shown in the table indicate the number of results requested in each package. Please indicate as soon as possible should your request differ from these details. Testing as per this table shall commence immediately unless the client intervenes with a correction.

## QA/QC Acceptance Limits

QC Sample Type	Method of Assessment	Acceptable Range
<b>Field QC</b>		
Blind Replicates and Split Samples	<p>The assessment of split replicate is undertaken by calculating the Relative Percent Difference (RPD) of the replicate concentration compared with the original sample concentration. The RPD is defined as:</p> $RPD = 100 \times \frac{X_1 - X_2}{\text{Average}}$ <p>Where: <math>X_1</math> and <math>X_2</math> are the concentration of the original and replicate samples.</p>	<p>The acceptable range depends upon the levels detected:</p> <ul style="list-style-type: none"> <li>0 – 100% RPD (When the average concentration is &lt; 5 times the LOR/EQL)</li> <li>0 – 75% RPD (When the average concentration is 5 to 10 times the LOR/EQL)</li> <li>0 – 50% RPD (When the average concentration is &gt; 10 times the LOR/EQL)</li> </ul>
Blanks (Rinsate and Trip Blanks)	Each blank is analysed as per the original samples.	Analytical Result < LOR/EQL
Laboratory-prepared Trip Spike	The trip spike is analysed after returning from the field and the % recovery of the known spike is calculated.	70% - 130%
<b>Laboratory QC</b>		
Laboratory Duplicates	Assessment as per Blind Replicates and Split Samples.	<p>The acceptable range depends upon the levels detected:</p> <ul style="list-style-type: none"> <li>0 – 100% RPD (When the average concentration is &lt; 4 times the LOR/EQL)</li> <li>0 – 50% RPD (When the average concentration is 4 to 10 times the LOR/EQL) <ul style="list-style-type: none"> <li>0 – 30% RPD (When the average concentration is &gt; 10 times the LOR/EQL)</li> </ul> </li> </ul>
Surrogates  Matrix Spikes Laboratory Control Samples	<p>Assessment is undertaken by determining the percent recovery of the known spike or addition to the sample.</p> $\% \text{ Recovery} = 100 \times \frac{C - A}{B}$ <p>Where: A = Concentration of analyte determined in the original sample; B = Added Concentration; C = Calculated Concentration.</p>	<p>70% - 130% (General Analytes)</p> <p>50% - 130% (Phenols)</p> <p>60% - 130% (OP Pesticides)</p> <p>If the result is outside the above ranges, the result must be &lt; 3x Standard Deviation of the Historical Mean (calculated over past 12 months)</p>
Method Blanks	Each blank is analysed as per the original samples.	Analytical Result < LOR/EQL
<p><b>Note:</b> EQL = Laboratory Estimated Quantitation Limit (EQL) or the minimum detection limit for a particular analyte. LOR = Limit of Reporting or the minimum</p>		

## APPENDIX C

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### SUPPORTING INFORMATION

Image 1: Borehole No 2

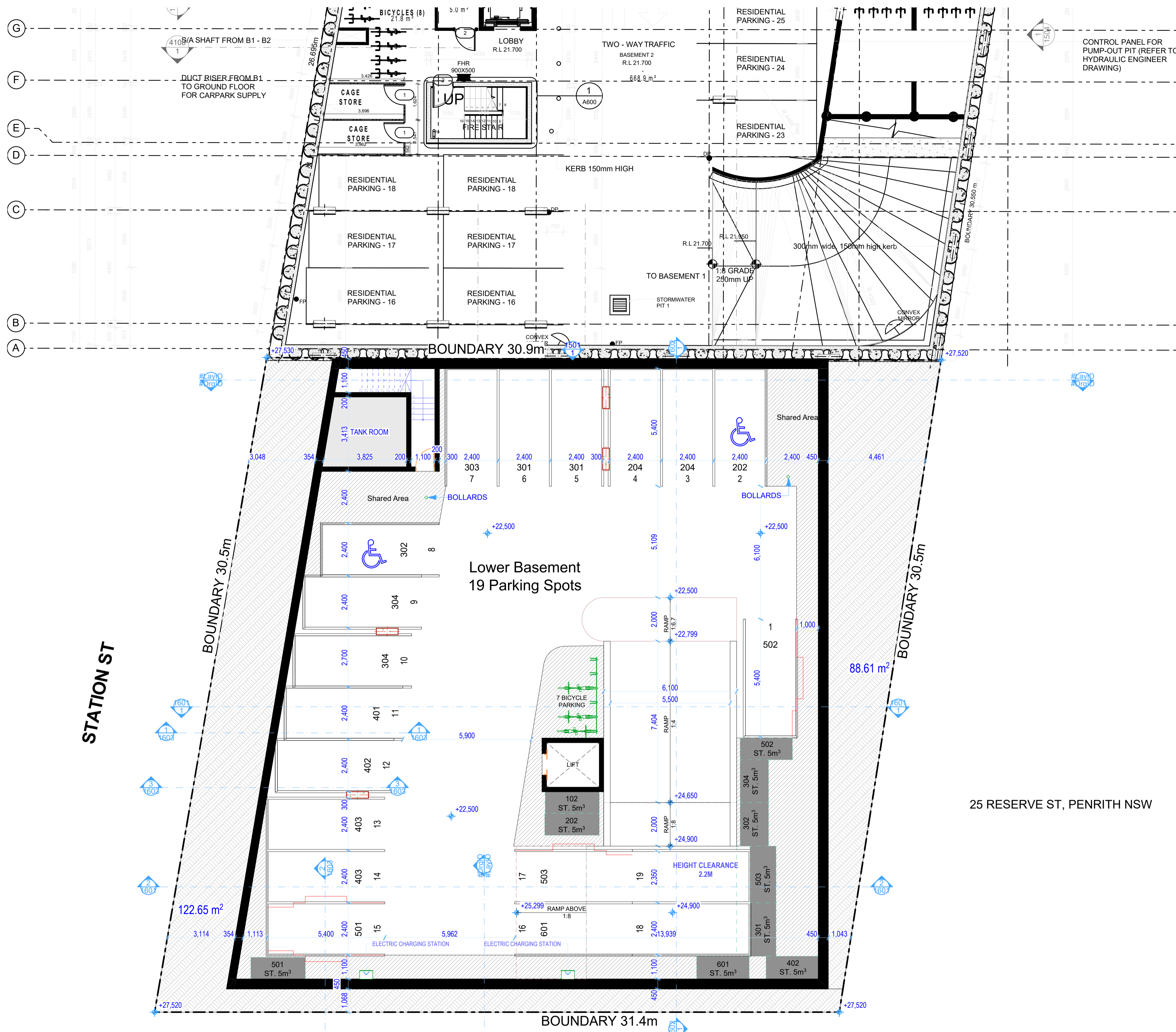


Image 2: Borehole No 2



Image 3: Borehole 4





STATION ST

BOUNDARY 30.5m

BOUNDARY 30.5m

Lower Basement  
19 Parking Spots

25 RESERVE ST, PENRITH NSW

RESERVE ST

BOUNDARY 31.4m

10m

Issue For Revised DA

Rev	Date	Amendment	By	Rev	Date	Amendment	By
01	05/02/2020	Issue For Consultation	VA				
02	24/02/2020	Issue For Consultation	VA				
03	16/03/2020	Issue For Consultation	VA				
04	23/02/2020	Issue For DA	SM				
05	Work in Progress	Issue For Revised DA	SM				

**GENERAL NOTES:**  
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 3. INFORMATION INDICATED IN THIS DOCUMENT MAY BE CRUCIAL TO THE SAFE AND PROPER FUNCTIONING OF THE PROJECT. DO NOT ALTER ANY ASPECT.  
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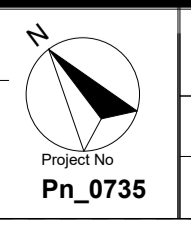


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 Pavlo Doroch 9170

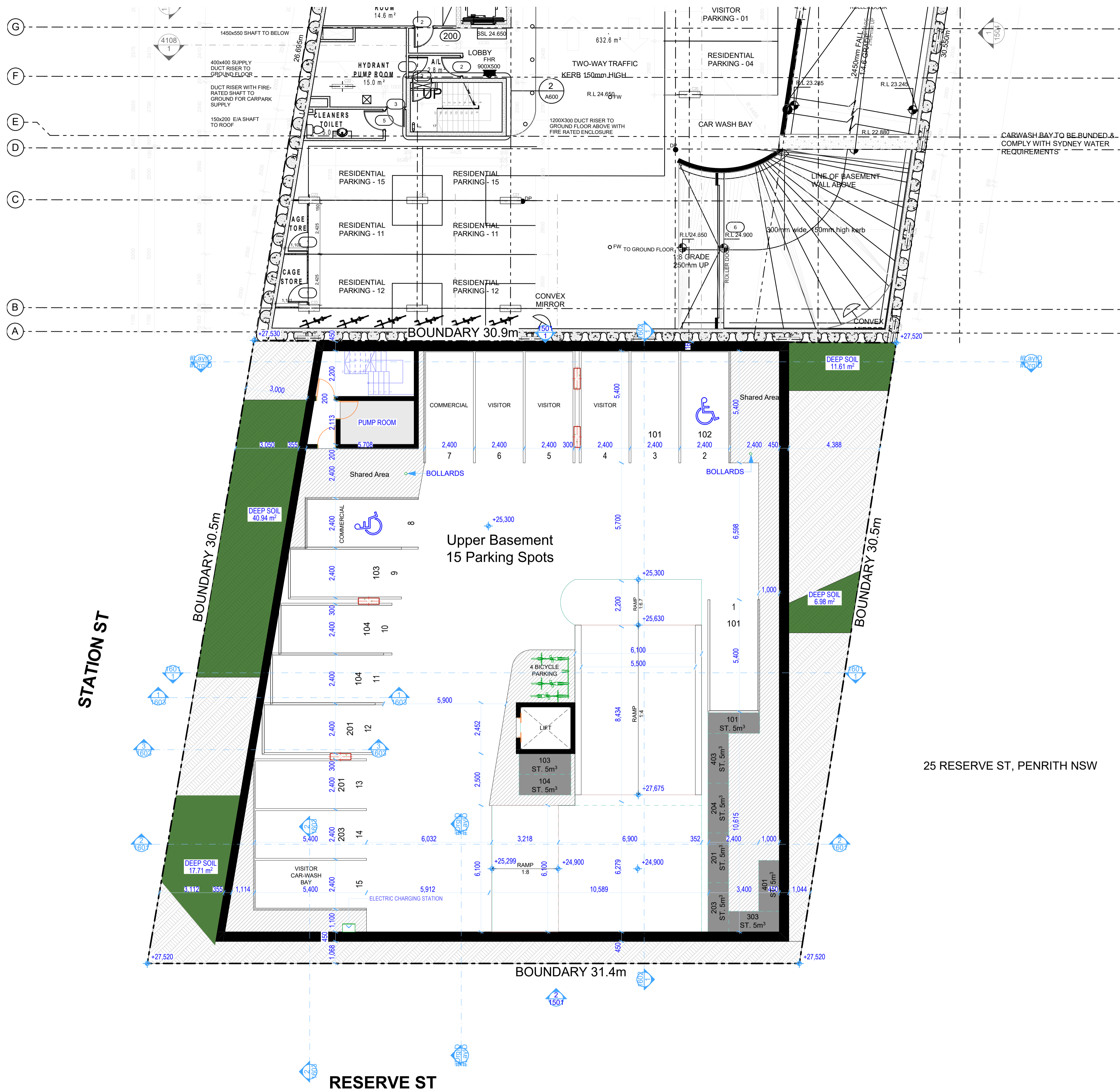
Structural Engineer: #Structural Engineer  
 Mechanical Services: #Mechanical Engineer  
 Electrical Services: #Electrical Engineer  
 Hydraulic Services: #Hydraulic Engineer  
 Fire Services: #Fire Engineer  
 BCA and Access Consultant: #BCA & Access Consultant  
 Principal Certifying Authority: #Principal Certifying Authority  
 Landscape Architect: #Landscape Architect  
 Acoustic Engineer: #Acoustic Engineer



Client: MR David Reeves  
 Project: MIXED USE DEVELOPMENT  
 Address: 118 - 120 STATION STREET PENRITH NSW 2750 Australia



Drawing Title: LOWER BASEMENT FLOOR  
 Drawing No: 1101  
 Revision: 05 -  
 Date: 23/03/2021  
 A1 Scale: 1:100  
 A3 Scale: 50%  
 WIP checked by IS



25 RESERVE ST, PENRITH NSW

STATION ST

RESERVE ST

**Issue For Revised DA**

Rev	Date	Amendment	By	Rev	Date	Amendment	By
01	05/02/2021	Issue For Consultation	VA				
02	24/02/2021	Issue For Consultation	VA				
03	16/03/2021	Issue For Consultation	VA				
04	23/03/2021	Issue For DA	SM				
05	Work in Progress	Issue For Revised DA	SM				

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 NSW Nominated Architect  
 Pavlo Doroch 9170

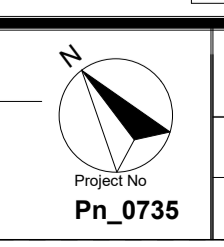
Structural Engineer: #Structural Engineer  
 Mechanical Services: #Mechanical Engineer  
 Electrical Services: #Electrical Engineer

Hydraulic Services: #Hydraulic Engineer  
 Fire Services: #Fire Engineer  
 BCA and Access Consultant: #BCA & Access Consultant

Principal Certifying Authority: #Principal Certifying Authority  
 Landscape Architect: #Landscape Architect  
 Acoustic Engineer: #Acoustic Engineer



Client: **MR David Reeves**  
 Project: **MIXED USE DEVELOPMENT**  
 Address: **118 - 120 STATION STREET PENRITH NSW 2750 Australia**



Drawing Title: **UPPER BASEMENT FLOOR BASEMENT PLAN**  
 Drawing No: **1102**  
 Revision: **05 -**  
 Date: **23/03/2021**  
 A1 Scale: **1:100**  
 A3 Scale: **50%**  
 WIP checked IS



# MIXED USE DEVELOPMENT

## 118 - 120 | STATION STREET | PENRITH

### DEVELOPMENT APPLICATION

Dwg No.	Title	Drawing Scales	Current Issue
0000	Title Sheet	1:1, 1:100	04
0301	Demolition Plan	1:100	03
0302	Site Management and Sediment Plan	1:200	04
0303	Consolidation Plan	1:100	02
0401	Site Plan	1:100	04
0601	Site Analysis Plan		01
1101	LOWER BASEMENT FLOOR	1:100	05
1102	UPPER BASEMENT FLOOR	1:100	05
1201	GROUND FLOOR	1:100	05
1301	FIRST FLOOR	1:100	04
1302	SECOND FLOOR	1:100	04
1303	THIRD FLOOR	1:100	04
1304	FOURTH FLOOR	1:100	04
1305	FIFTH FLOOR	1:100	04
1306	SIXTH FLOOR	1:100	04
1401	ROOF	1:100	04
1501	North & South Elevations	1:100	04
1502	East & West Elevations	1:100	04
1601	Section 01 & 02	1:100	04
1602	Section 03	1:100	05
1603	Detail Section		02
2701	WALL TYPES	1:10	01
3001	TYPICAL ACCESSIBLE UNIT CONFIGURATION	1:200, 1:50	04
3021	GROUND FLOOR - GFA	1:100	04
3022	FIRST FLOOR - GFA	1:100	04
3023	SECOND FLOOR - GFA	1:100	04
3024	THIRD FLOOR - GFA	1:100	04
3025	FOURTH FLOOR - GFA	1:100	04
3026	FIFTH FLOOR - GFA	1:100	04
3027	SIXTH FLOOR - GFA	1:100	04
3041	NOTIFICATION PLANS 1/2	1:100	04
3042	NOTIFICATION PLANS 2/2	1:200	04
3061	GROUND FLOOR - BASIX	1:100	01
3062	FIRST FLOOR - BASIX	1:100	01
3063	SECOND FLOOR - BASIX	1:100	01
3064	THIRD FLOOR - BASIX	1:100	01
3065	FOURTH FLOOR - BASIX	1:100	01
3066	FIFTH FLOOR - BASIX	1:100	01
3067	SIXTH FLOOR - BASIX	1:100	01
6001	FINISHES SCHEDULE 1/2	1:100	02
6002	FINISHES SCHEDULE 2/2	1:100	02
8001	SHADOW DIAGRAMS	1:500	04
8002	LIVING ROOM U01-02 SHADOW DIAGRAMS		01
8003	LIVING ROOM U02-02 SHADOW DIAGRAMS		01
8004	LIVING ROOM U03-02 SHADOW DIAGRAMS		01

UNIT SCHEDULE																
Apartment No:	No of Bedrooms	Area (m2)	Adaptable	Cross Ventilation	09.00	10.00	11.00	12.00	13.00	14.00	15.00	Total Solar Access	Car Spaces	Carpark Storage (m3)	Unit Storage (m3)	Total Storage (m3)
01-01	2 BEDROOM AFFORDABLE	77.06	NO	YES	0	0	0	0	0	0	0	0 HRS	1	5	4	9.00
01-02	3 BEDROOM	96.48	NO	YES	0	0	0	1	1	1	0	3 HRS	2	5	5	10.00
01-03	2 BEDROOM LIVABLE	75.10	NO	YES	0	1	1	1	1	1	1	6 HRS	1	5	4	9.00
01-04	3 BEDROOM	101.08	NO	YES	0	0	0.5	1	1	1	1	4.5 HRS	2	5	5	10.00
02-01	2 BEDROOM AFFORDABLE	77.06	NO	YES	0	0	0	0	0	0	0	0 HRS	1	5	4	9.00
02-02	3 BEDROOM	96.48	NO	YES	0	0	0	1	1	1	0	3 HRS	2	5	5	10.00
02-03	2 BEDROOM LIVABLE	75.10	NO	YES	0	1	1	1	1	1	1	6 HRS	1	5	4	9.00
02-04	3 BEDROOM	101.08	NO	YES	0	0	0	1	1	1	1	4 HRS	2	5	5	10.00
03-01	2 BEDROOM AFFORDABLE	77.06	NO	YES	0	0	0	0	0	0	0	0 HRS	1	5	4	9.00
03-02	3 BEDROOM	96.48	NO	YES	0	0	0	1	1	1	0	3 HRS	2	5	5	10.00
03-03	2 BEDROOM LIVABLE	75.10	NO	YES	0	1	1	1	1	1	1	6 HRS	1	5	4	9.00
03-04	3 BEDROOM	101.08	NO	YES	0	0	0	1	1	1	1	4 HRS	2	5	5	10.00
04-01	2 BEDROOM AFFORDABLE	77.40	NO	YES	1	1	1	1	1	0	0	5 HRS	1	5	4	9.00
04-02	2 BEDROOM ADAP	75.94	YES	YES	0	0	0	1	1	1	1	4 HRS	1	5	4	9.00
04-03	3 BEDROOM	95.25	NO	YES	0	0.5	1	1	1	1	1	4.5 HRS	2	5	5	10.00
05-01	2 BEDROOM	77.40	NO	YES	1	1	1	1	1	0	0	5 HRS	1	5	4	9.00
05-02	2 BEDROOM ADAP	75.94	YES	YES	0	0	0	1	1	1	1	4 HRS	1	5	4	9.00
05-03	3 BEDROOM	95.25	NO	YES	0	0	1	1	1	1	1	5 HRS	2	5	5	10.00
18		1,546.34 m²	6/18	18/18								18/18				
			31.6%	100%								100%				

Eco Certificates Pty Ltd  
info@ecocertificates.com.au  
1300 16 24 36  
PO Box 5172 South Turramurra NSW 2074

Building Components Performance and Specifications Schedule

NatHERS Thermal Comfort Modeling

These are the specifications upon which the certified NatHERS assessment is based. Any deviation from these specifications will invalidate the NatHERS certificate and therefore voids compliance of the development with the National Construction Code of Australia 2016 and 2019. In case of any variation from these specifications contact Eco Certificates Pty Ltd to obtain updated NatHERS and BASIX certificates and an updated copy of these specifications.

Assessment Date : 17/9/2021  
Assessor : Manuel Basiri - DMN Accredited Assessor VIC/BDV/12/1462 / MIEAust  
Thermal Modeling Software : BERS Pro v4.4.0.6 (3.21)  
Development : 118-120 Station Street Penrith 2750

Windows and Skylights				
	Description	Type	U Value	SHGC
1	All external windows and glazed doors windows of Units 3-03 and 5-03	Aluminium framed Single Glazed	5.40	0.58
2	All external windows and glazed doors windows of Units 1-01, 3-01 and 3-02	Aluminium framed Double Glazed	4.10	0.52
3	All external windows and glazed doors windows of Units 1-02, 2-01, 2-02, 4-01 and 5-01	Aluminium framed Double Glazed	4.30	0.53
4	All other windows of all other units	Aluminium framed Single Glazed	6.70	0.70

Window and skylight U and SHGC values, if specified, are according to NFRC. Alternate products or specifications may be used if their U value is lower, and the SHGC value is less than 10% higher or lower, than the U and SHGC values of the product specified above. Note that the NatHERS Technical Notes 2019 allows only a 5% tolerance for the SHGC value however this is overridden by BASIX Thermal Comfort Protocol 2017 to be 10%.

External and Internal Walls				
	Description	Construction Type	Insulation	Colour (Solar Absorbance)
1	All external walls of all units	Brick Veneer	R 2.0	Medium (0.30 < SA < 0.85)
2	All internal walls of all units	Plasterboard	None	N/A
3	All party walls	Concrete Block	None	N/A
4	All common area walls	Concrete Block	R 2.0	N/A

The solar absorbance values are as per definition of Light, Medium and Dark Colours in the BERS Pro software and the naming might differ according to the BASIX thermal comfort protocol 2017.

Floors				
	Description	Construction Type	Insulation	Floor Covering
1	All floors of all Level 1 Units	Concrete	R 2.0	Not Specified (Defaults Applied)
2	All other floors of all other units	Concrete	None	Not Specified (Defaults Applied)

Ceilings and Roofs				
	Description	Construction Type	Insulation	Colour (Solar Absorbance)
1	All ceilings of all units under another floor	Plasterboard	None	N/A
2	All ceilings of all units under terraces and roof	Plasterboard	R 2.5	N/A
3	All roof of all units	Concrete	None	Light (SA < 0.30)

No ceiling penetration(s) as a result of installation of sealed or unsealed recessed downlights is being considered in the NatHERS thermal comfort modeling associated with this specifications schedule. If recessed downlights are introduced to the project at a later date the NatHERS certificate associated with this specification and the BASIX certificate of this development, if any, would become invalid and must be updated.

SCHEDULE OF AREAS	
ADDRESS	118 - 120 STATION STREET PENRITH NSW 2750 Australia
LOT AND DP	LOTS 4 & 5 IN DP 112466 & LOT 6 DP 1003862
SITE AREA	934.8 m2

COMMUNAL OPEN SPACE (29.72% OF SITE AREA)	277.90 m²
DEEP SOIL (8.8 % OF SITE AREA)	82.32 m²
LANDSCAPING (38.1 % OF SITE AREA)	356.76 m²
TOTAL LANDSCAPE AREA	421.7 m²

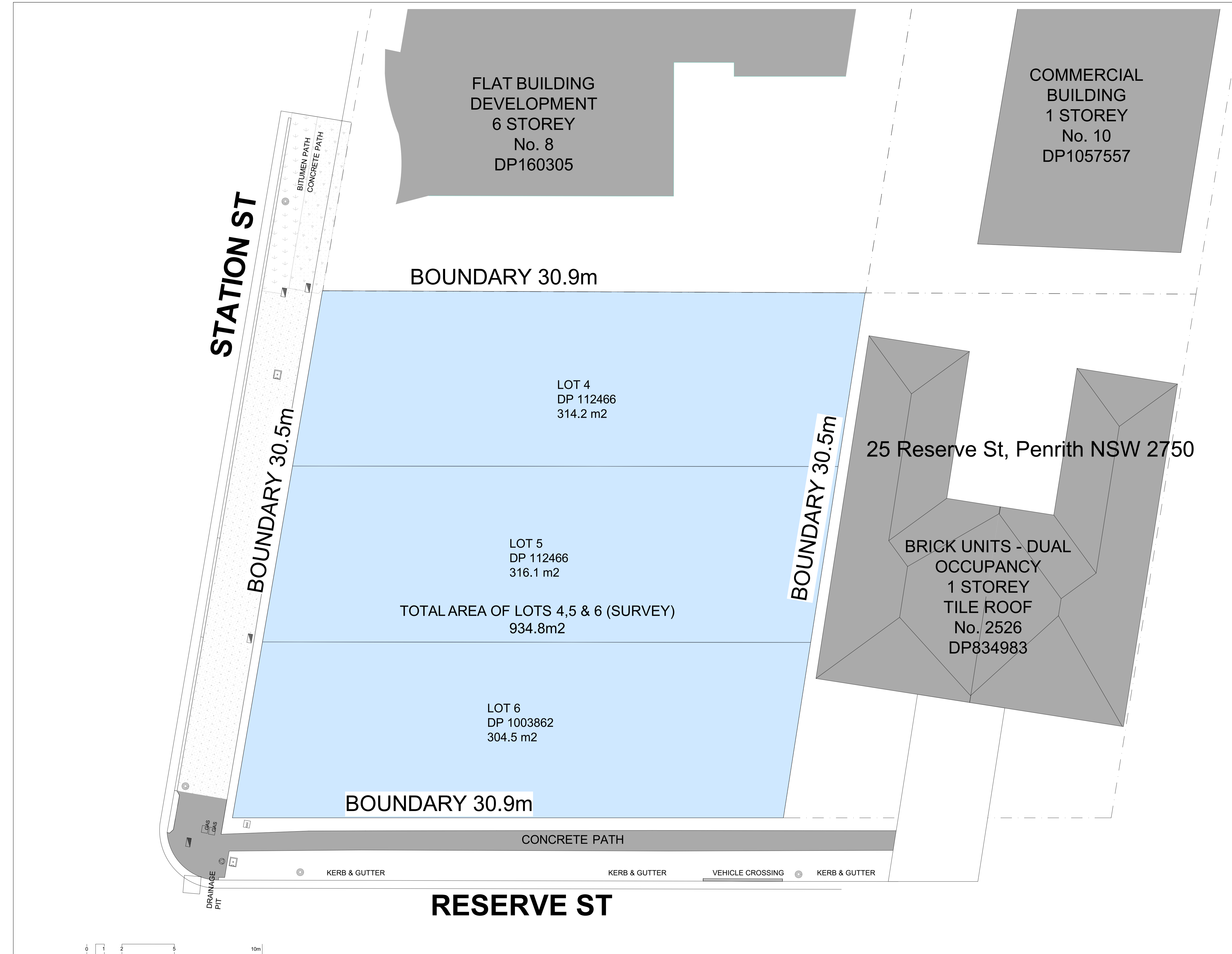
ALLOWABLE FSR	2:1
TOTAL GFA	1955.31 m²
FSR	2.09:1

PROPOSED -- RESIDENTIAL :	18 x UNITS 10 x 2 BEDROOM 8 x 3 BEDROOM
---------------------------	---

CAR PARKING :	RESIDENTIAL: 26 VISITORS: 4 COMMERCIAL: 2 TOTAL SPACES: 32
---------------	---

Apartment Type Count	
2 BEDROOM	1
2 BEDROOM ADAP	2
2 BEDROOM AFFORDABLE	4
2 BEDROOM LIVABLE	3
3 BEDROOM	8
	18

Area Schedule - GFA	
Zone Type	Area
GFA - Fifth Floor	269.99
GFA - First Floor	373.49
GFA - Fourth Floor	269.99
GFA - Ground Floor	283.45
GFA - Second Floor	373.49
GFA - Sixth Floor	11.41
GFA - Third Floor	373.49
	1,955.31 m²



**LEGEND**

	Telephone Pit Lid (Single)
	Power Pole
	Gas Value
	Water Hydrant
	Water Stop Valve

**Issue For Amended DA**

Rev	Date	Amendment	By	Rev	Date	Amendment	By
01	24/09/2020	Issue For Consultation	VA				
02	23/09/2020	Issue For DA	VA				
03	28/09/2021	Issue For Amended DA	VA				

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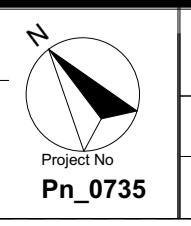
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NSW Nominated Architect  
 Pavlo Doroch 9170

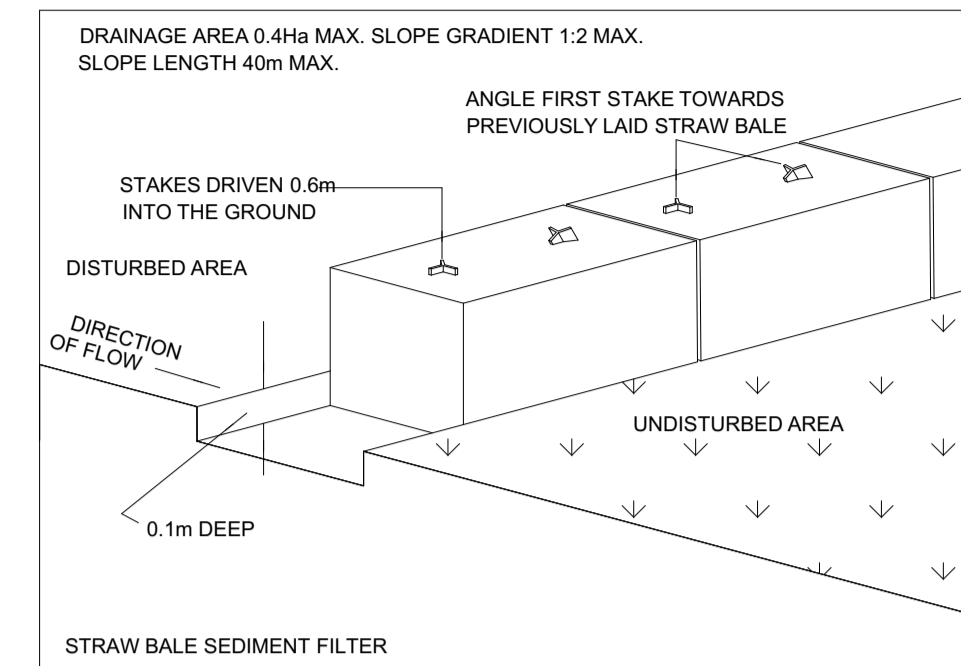
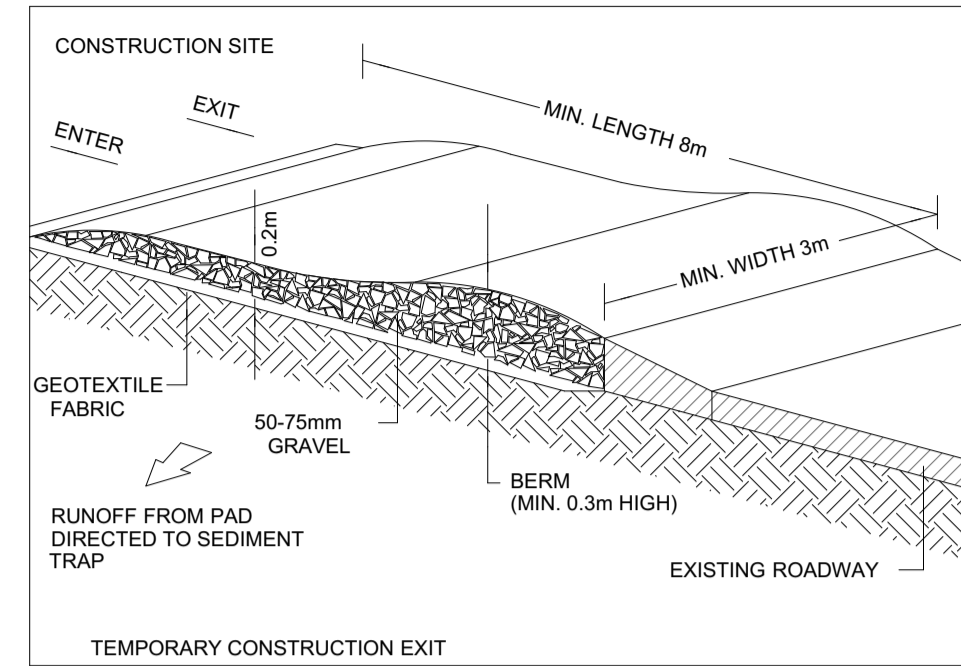
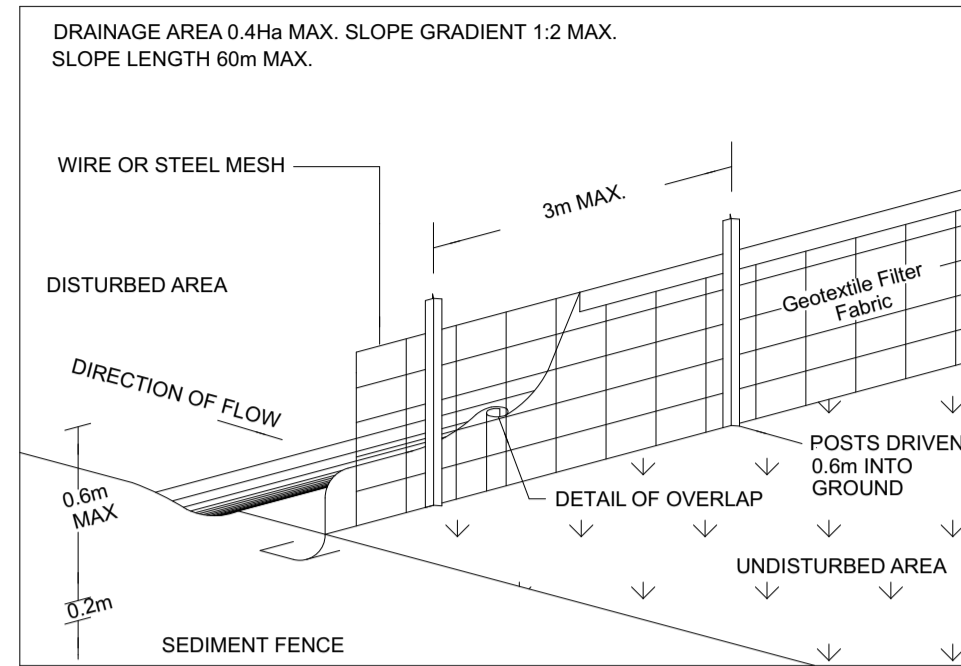
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 Acoustic Engineer: #Acoustic Engineer



Client: **MR David Reeves**  
 Project: **MIXED USE DEVELOPMENT**  
 Address: **118 - 120 STATION STREET PENRITH NSW 2750 Australia**



Drawing Title: <b>Demolition Plan SITE DEMOLITION PLAN</b>	Revision: <b>03</b>
Drawing No: <b>0301</b>	Checked: <b>IS</b>
Date: <b>28/09/2021</b>	A1 Scale: <b>1:100</b>
	A3 Scale: <b>50%</b>



**LEGEND**

- 1 Site Sheed
- 2 WC
- 3 Waste Bin Durin Construction
- 4 Waste Bin Recyclable Material
- 5 Stoke Pile Area for Soil Re-use
- 6 Stock Pile Area During Construction
- 7 Cover Stock Piles for Dust Abatement
- 8 Temporary Driveway Gate
- 9 Safety Signs During Construction
- 10 Truck Washdown Area 200mm Thick DGB20 or Crushed Rock on Narural Subgrade and Cover Filter Fabrick with Shaker Pad

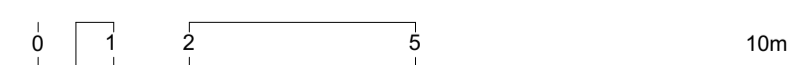
**NOTES**

All stockpiles of building material such as sand and soil must be protected to prevent scour and erosion. The stockpiles should never be placed in the street gutter where they will wash away with the first rainstorm.

The removal of excess stormwater during periods of rain while construction is in progress, is to be flocculated and pumped through a filtration system.



1 Sediment Control Plan  
1:200



Rev	Date	Amendment	By	Rev	Date	Amendment	By
01	21/08/2020	Issue For Consultation	VA				
02	24/08/2020	Issue For Comments	VA				
03	24/08/2020	Issue For DA	VA				
04	28/09/2021	Issue For Amended DA	VA				

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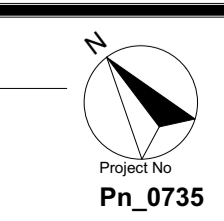
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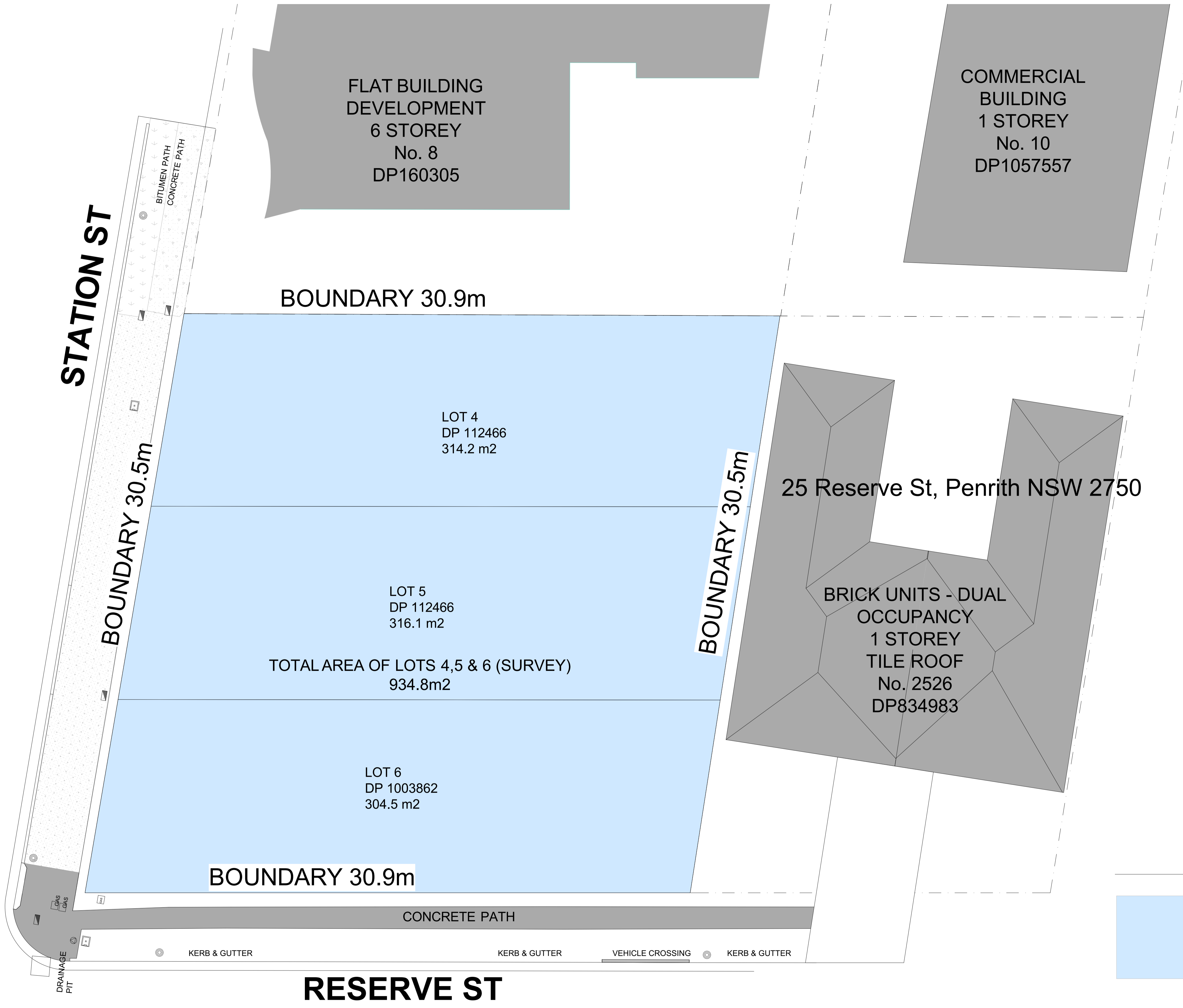


Client: MR David Reeves  
 Project: MIXED USE DEVELOPMENT  
 Address: 118 - 120 STATION STREET PENRITH NSW 2750 Australia



Project No	Date	A1 Scale	A3 Scale	Checked
0302	28/09/2021	1:200	50%	IS

**Issue For Amended DA**



**STATION ST**

FLAT BUILDING  
DEVELOPMENT  
6 STOREY  
No. 8  
DP160305

COMMERCIAL  
BUILDING  
1 STOREY  
No. 10  
DP1057557

BOUNDARY 30.9m

LOT 4  
DP 112466  
314.2 m2

BOUNDARY 30.5m

LOT 5  
DP 112466  
316.1 m2

TOTAL AREA OF LOTS 4,5 & 6 (SURVEY)  
934.8m2

BOUNDARY 30.5m

25 Reserve St, Penrith NSW 2750

BRICK UNITS - DUAL  
OCCUPANCY  
1 STOREY  
TILE ROOF  
No. 2526  
DP834983

LOT 6  
DP 1003862  
304.5 m2

BOUNDARY 30.9m

CONCRETE PATH

DRAINAGE  
PIT

KERB & GUTTER

KERB & GUTTER

VEHICLE CROSSING

KERB & GUTTER

**RESERVE ST**

**LEGEND**



Combined Lot

**Issue For Amended DA**

Rev	Date	Amendment	By	Rev	Date	Amendment	By
01	20/09/2021	Issue For DA					
02	28/09/2021	Issue For Amended DA					

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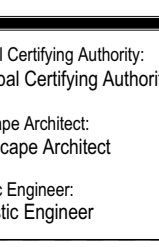


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Client: **MR David Reeves**  
 Project: **MIXED USE DEVELOPMENT**  
 Address: **118 - 120 STATION STREET PENRITH NSW 2750 Australia**

Project No: **Pr\_0735**

Drawing Title	Revision
Consolidation Plan SITE DEMOLITION PLAN	02
Drawing No 0303	
Date 28/09/2021	Checked
A1 Scale 1:100	
A3 Scale 50%	

114 Station St, Penrith NSW 2750

FLAT BUILDING DEVELOPMENT  
6 STOREY  
No. 8  
DP160305

234 Derby St, Penrith NSW 2750

COMMERCIAL BUILDING  
1 STOREY  
No. 10  
DP1057557



RESERVE ST

BRICK UNITS - DUAL OCCUPANCY  
1 STOREY  
TILE ROOF  
No. 2526  
DP884983  
25 RESERVE ST, PENRITH NSW

Notes:  
Please refer to Landscape drawings for details

**Issue For Amended DA**

Rev	Date	Amendment	By	Rev	Date	Amendment	By
01	21/08/2020	Issue For Consultation	VA				
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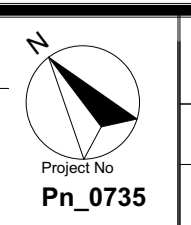
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









Client: MR David Reeves  
 Project: MIXED USE DEVELOPMENT  
 Address: 118 - 120 STATION STREET  
 PENRITH NSW 2750 Australia

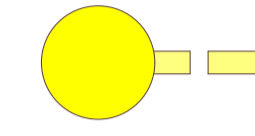


Project No	Date	A1 Scale	A3 Scale	Checked
0401	28/09/2021	1:100	50%	IS

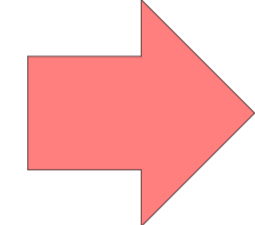
**LEGEND**

-  Existing Vegetation
-  Sun Path
-  Sun Angle
-  Fire Exit
-  Vehiculat Direction of Travel
-  Pedestrian Entry
-  Main Building Entry
-  Cool Breezes
-  Warm Breezes

 Existing Vegetation

 Sun Path

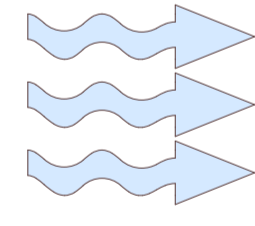
 Sun Angle

 Fire Exit

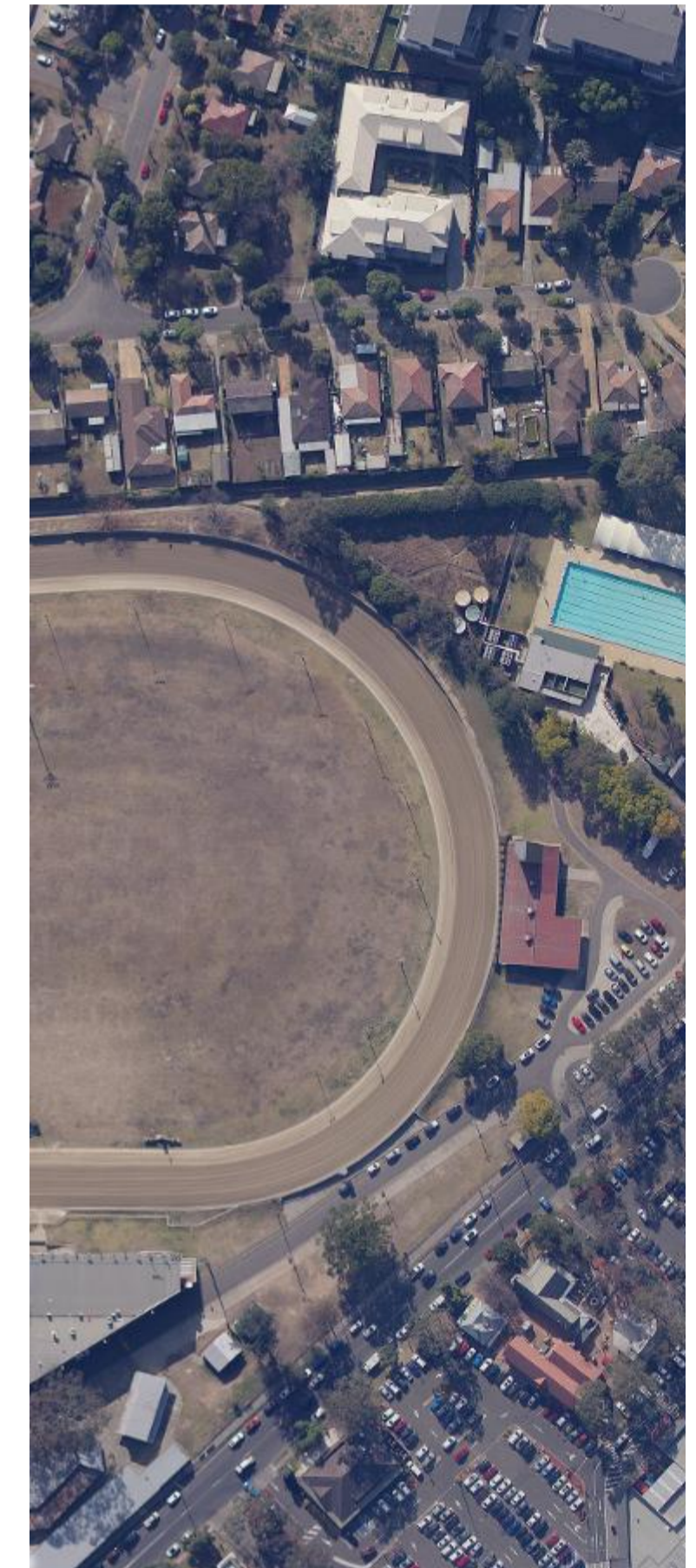
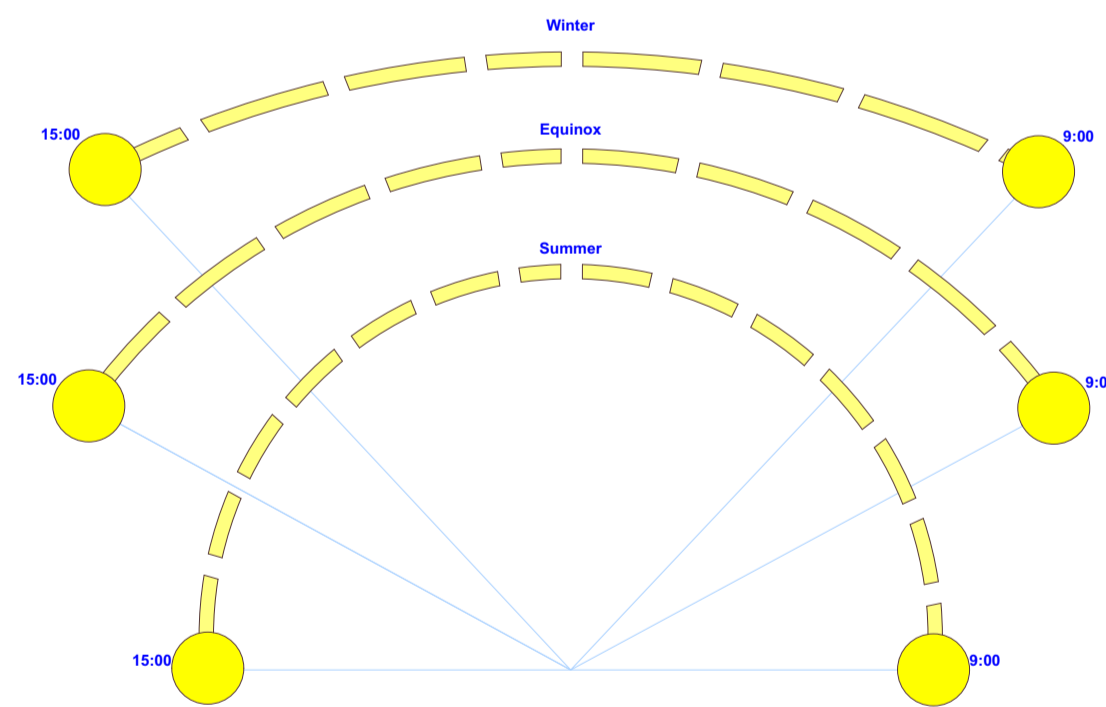
 Vehiculat Direction of Travel

 Pedestrian Entry

 Main Building Entry

 Cool Breezes

 Warm Breezes



**Issue For Amended DA**

Rev	Date	Amendment	By	Rev	Date	Amendment	By
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 ABN: 90 616 216 196

NSW Nominated Architect  
 Pavlo Doroch 9170

Structural Engineer:  
 #Structural Engineer

Mechanical Services:  
 #Mechanical Engineer

Electrical Services:  
 #Electrical Engineer

Hydraulic Services:  
 #Hydraulic Engineer

Fire Services:  
 #Fire Engineer

BCA and Access Consultant:  
 #BCA & Access Consultant

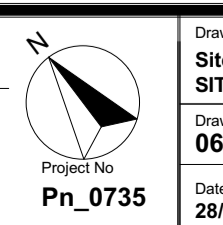
Principal Certifying Authority:  
 #Principal Certifying Authority

Landscape Architect:  
 #Landscape Architect

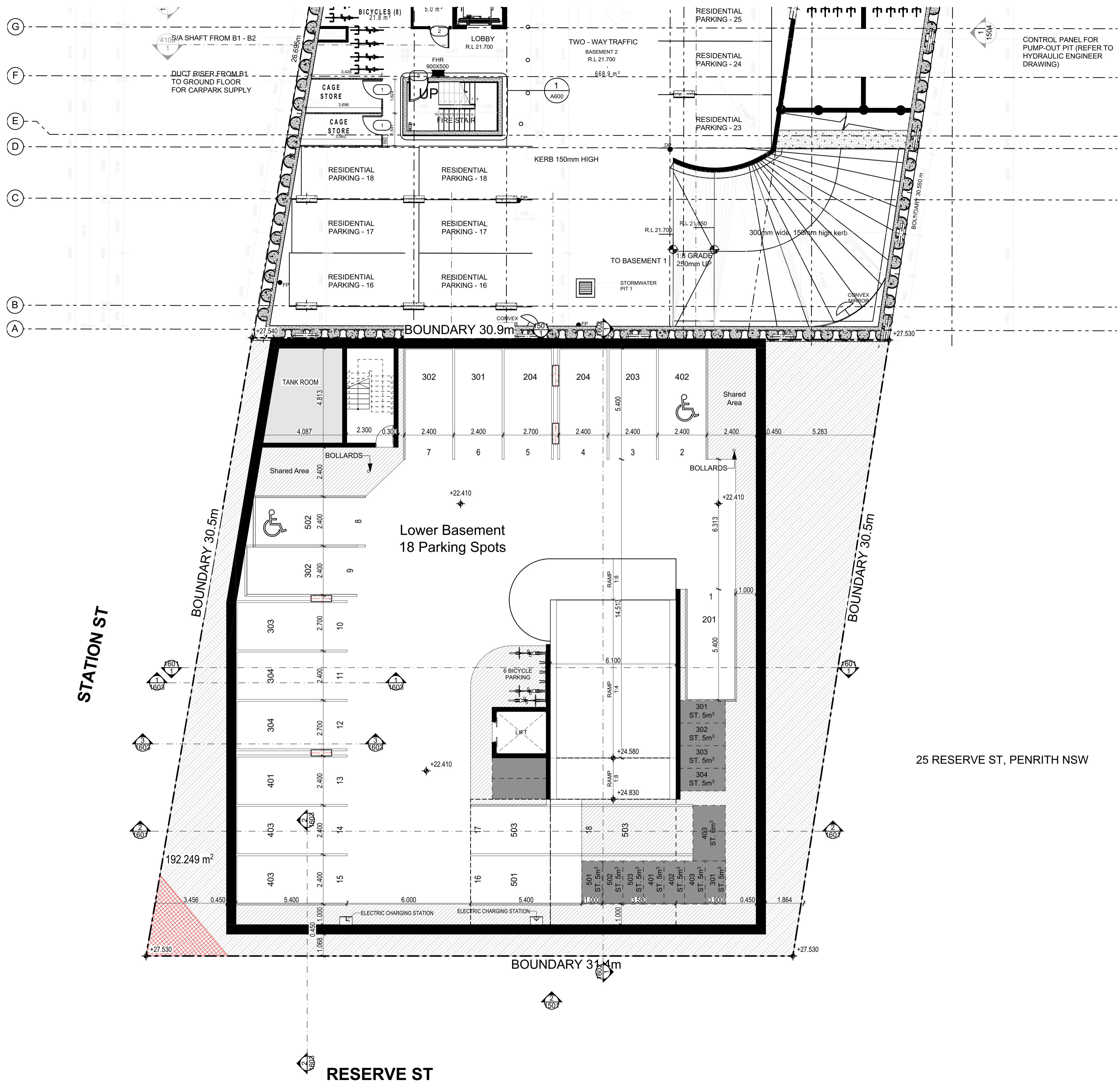
Acoustic Engineer:  
 #Acoustic Engineer



Client: **MR David Reeves**  
 Project: **MIXED USE DEVELOPMENT**  
 Address: **118 - 120 STATION STREET PENRITH NSW 2750 Australia**



Drawing Title	Revision
Site Analysis Plan	01
<b>SITE ANALYSIS PLAN</b>	
Drawing No: <b>0601</b>	Revision: <b>01</b>
Date: <b>28/09/2021</b>	Checked: <b>IS</b>
A1 Scale: <b>100%</b>	A3 Scale: <b>50%</b>



STATION ST

25 RESERVE ST, PENRITH NSW

RESERVE ST

**Issue For Amended DA**

Rev	Date	Amendment	By	Rev	Date	Amendment	By
01	10/08/2020	Issue For Consultation	VA				
02	24/08/2020	Issue For Consultation	VA				
03	16/09/2020	Issue For Consultation	VA				
04	23/09/2020	Issue For DA	SH				
05	28/09/2021	Issue For Amended DA	SH				

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 Pavlo Doroch 9170

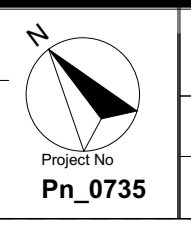
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 Mechanical Services: #Mechanical Engineer  
 Electrical Services: #Electrical Engineer

Hydraulic Services: #Hydraulic Engineer  
 Fire Services: #Fire Engineer  
 BCA and Access Consultant: #BCA & Access Consultant

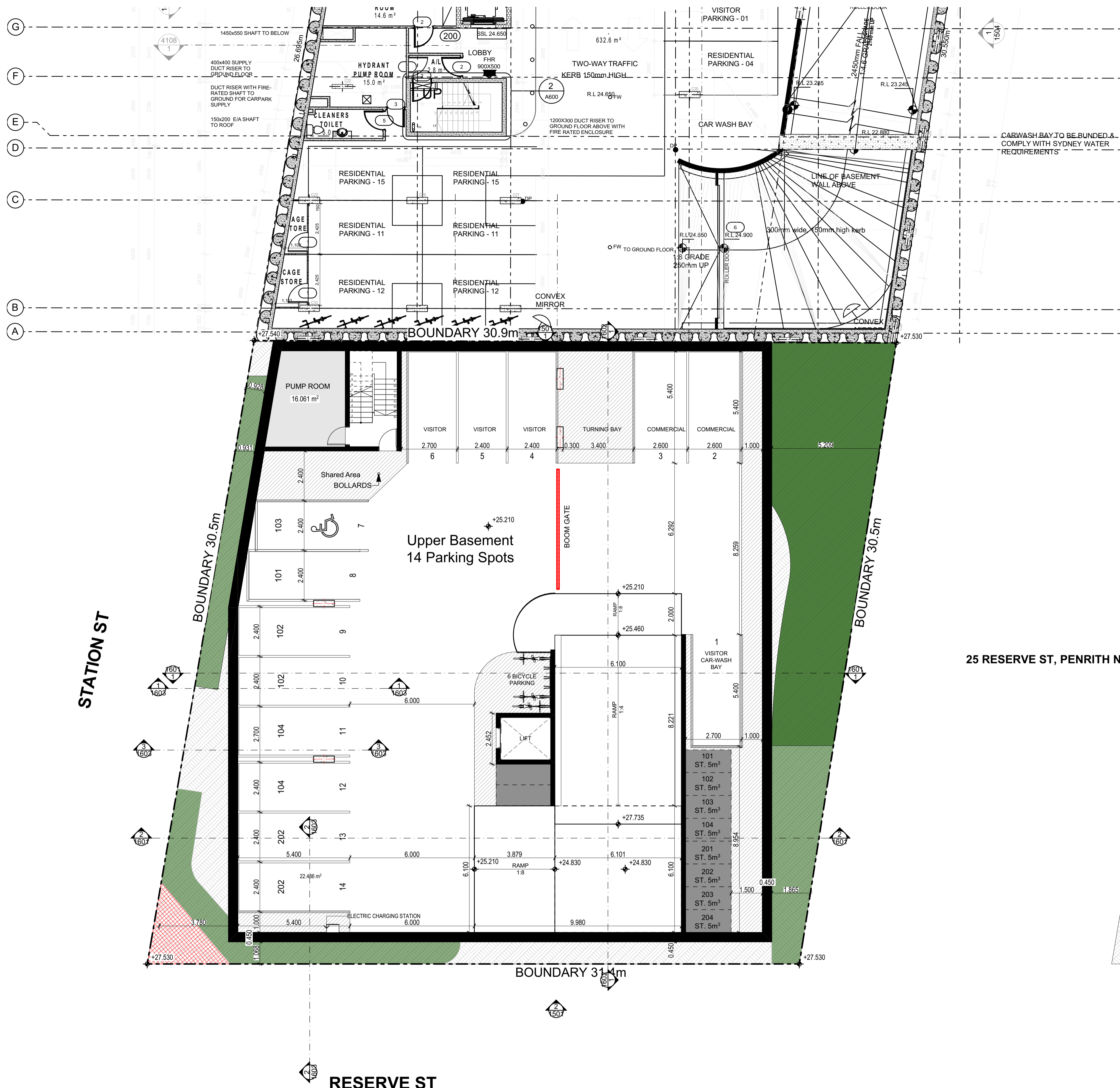
Principal Certifying Authority: #Principal Certifying Authority  
 Landscape Architect: #Landscape Architect  
 Acoustic Engineer: #Acoustic Engineer



Client: **MR David Reeves**  
 Project: **MIXED USE DEVELOPMENT**  
 Address: **118 - 120 STATION STREET PENRITH NSW 2750 Australia**



Project No	Date	A1 Scale	A3 Scale	Checked
1101	18/11/2021	1:100	50%	IS



STATION ST

25 RESERVE ST, PENRITH NS

RESERVE ST

**Issue For Amended DA**

Rev	Date	Amendment	By	Rev	Date	Amendment	By
01	10/08/2020	Issue For Consultation	VA				
02	24/08/2020	Issue For Consultation	VA				
03	16/09/2020	Issue For Consultation	VA				
04	23/09/2020	Issue For DA	SH				
05	28/09/2021	Issue For Amended DA	SH				

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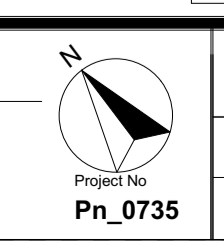
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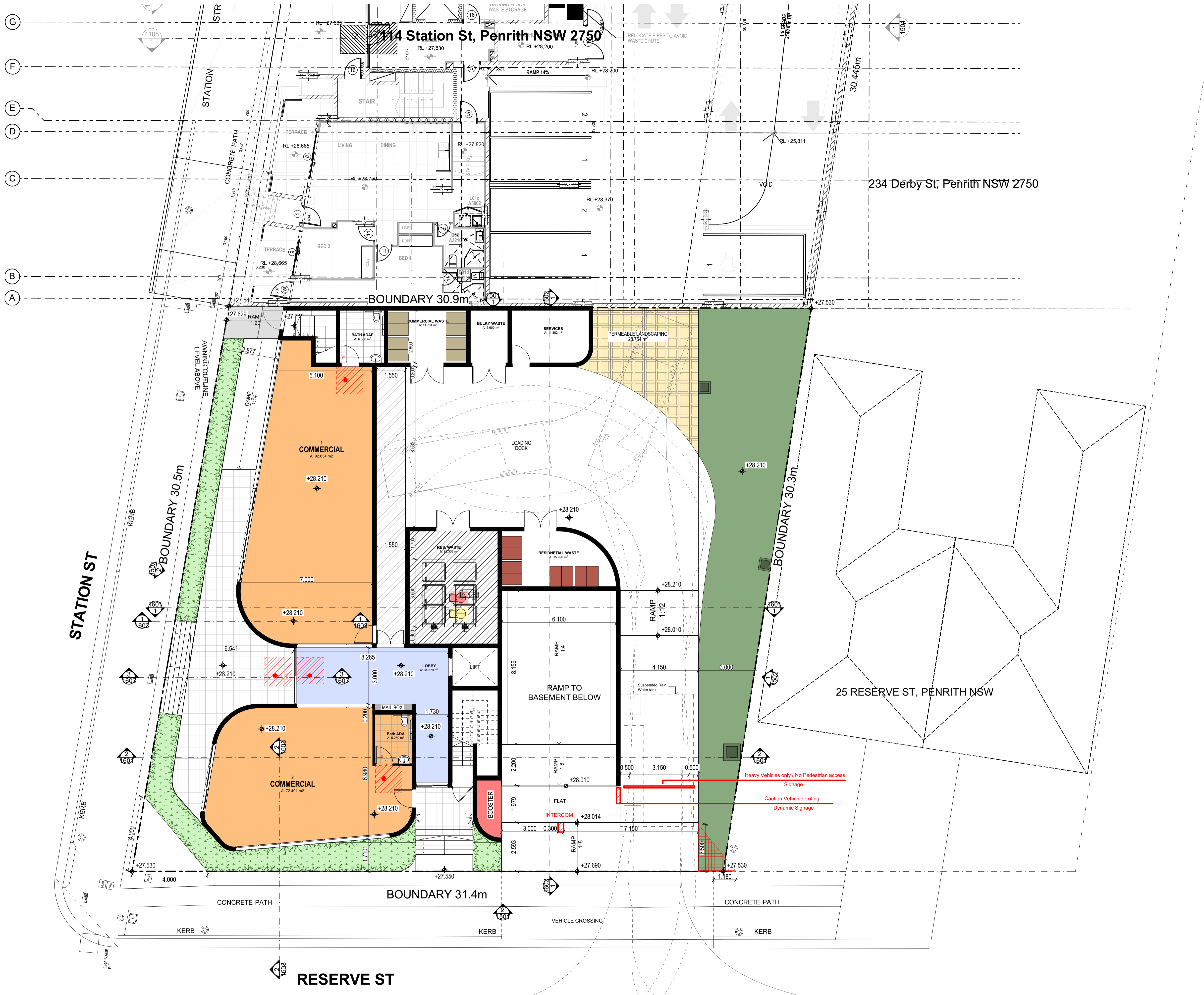


Client: MR David Reeves  
 Project: MIXED USE DEVELOPMENT  
 Address: 118 - 120 STATION STREET PENRITH NSW 2750 Australia



Drawing Title	Drawing No	Revision
UPPER BASEMENT FLOOR BASEMENT PLAN	1102	05

Date: 18/11/2021 | A1 Scale: 1:100 | A3 Scale: 50% | Checked: IS



Notes:  
Please refer to Landscape drawings for details

**Issue For Amended DA**

Rev	Date	Amendment	By	Rev	Date	Amendment	By
01	10/08/2020	Issue For Consultation	VA				
02	24/08/2020	Issue For Consultation	VA				
03	16/09/2020	Issue For Consultation	VA				
04	23/09/2020	Issue For DA	SH				
05	28/09/2021	Issue For Amended DA	SH				

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 BCA and Access Consultant: #BCA & Access Consultant  
 Principal Certifying Authority: #Principal Certifying Authority  
 Landscape Architect: #Landscape Architect  
 Acoustic Engineer: #Acoustic Engineer



Client: **MR David Reeves**  
 Project: **MIXED USE DEVELOPMENT**  
 Address: **118 - 120 STATION STREET PENRITH NSW 2750 Australia**

Project No	Date	A1 Scale	A3 Scale	Revision
<b>Prn_0735</b>	<b>18/11/2021</b>	<b>1:100</b>	<b>50%</b>	<b>05</b>

Drawing Title: **GROUND FLOOR / PODIUM PLAN**  
 Drawing No: **1201**  
 Checked: **IS**



Notes:  
Please refer to Landscape drawings for details

**Issue For Amended DA**

Rev	Date	Amendment	By	Rev	Date	Amendment	By
01	21/09/2020	Issue For Consultation					
02	24/09/2020	Issue For Consultation					
03	24/09/2020	Issue For DA					
04	28/09/2021	Issue For Amended DA					

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 ABN: 90 616 216 196

NSW Nominated Architect  
 Pavlo Doroch 9170

Structural Engineer: #Structural Engineer  
 Mechanical Services: #Mechanical Engineer  
 Electrical Services: #Electrical Engineer

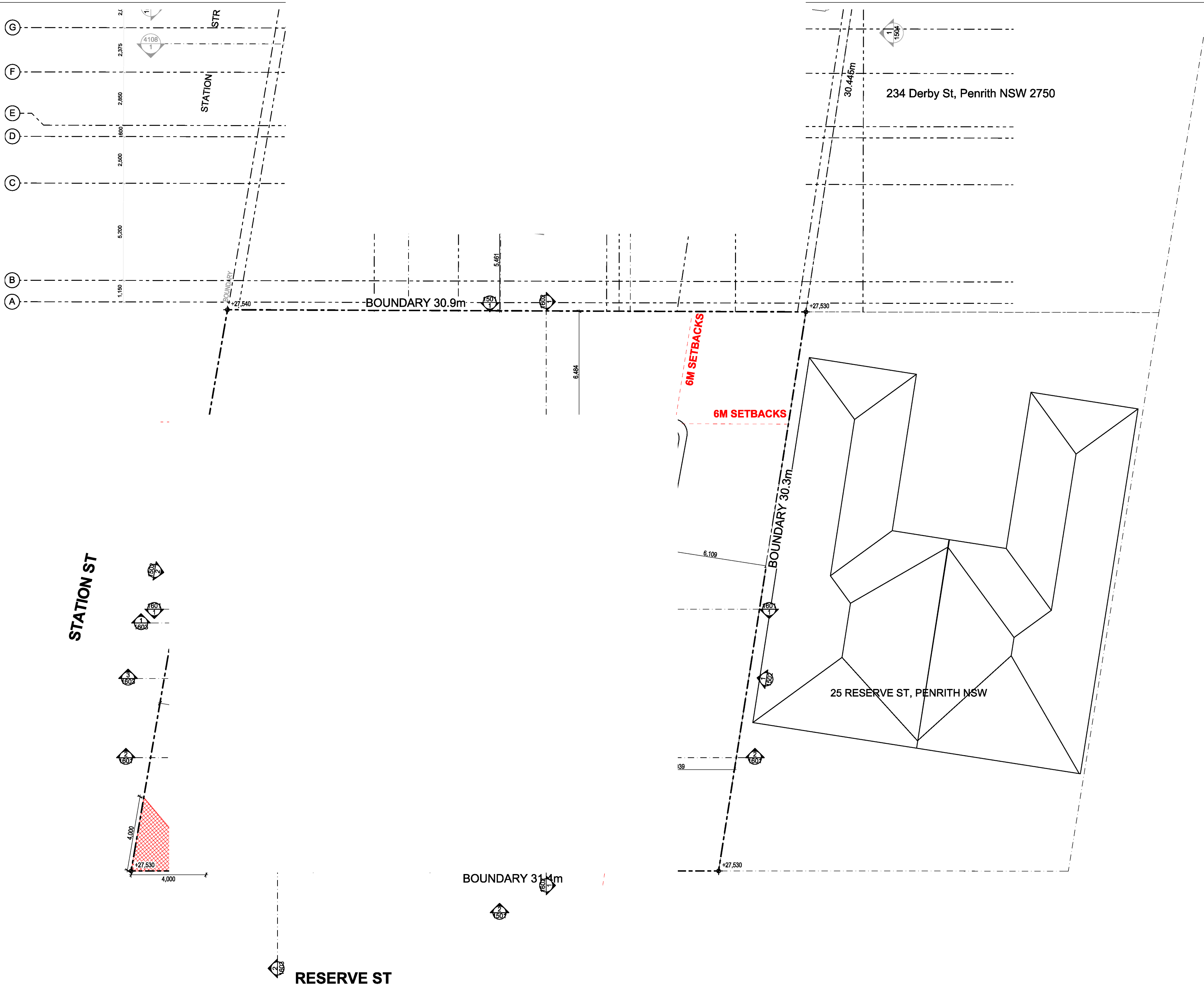
Hydraulic Services: #Hydraulic Engineer  
 Fire Services: #Fire Engineer  
 BCA and Access Consultant: #BCA & Access Consultant

Principal Certifying Authority: #Principal Certifying Authority  
 Landscape Architect: #Landscape Architect  
 Acoustic Engineer: #Acoustic Engineer



Client: MR David Reeves  
 Project: MIXED USE DEVELOPMENT  
 Address: 118 - 120 STATION STREET PENRITH NSW 2750 Australia

 Prn_0735	Drawing Title: <b>FIRST FLOOR PLAN</b>	Revision: <b>04</b>
	Drawing No: <b>1301</b>	Date: <b>28/09/2021</b>
A1 Scale: <b>1:100</b>	A3 Scale: <b>50%</b>	Checked: _____



STATION ST

RESERVE ST

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25 RESERVE ST, PENRITH NSW

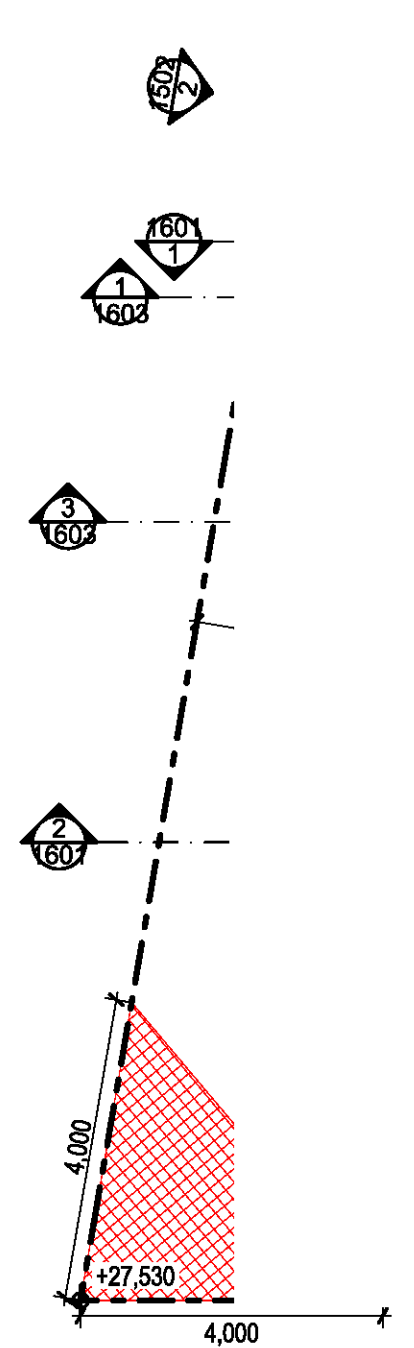
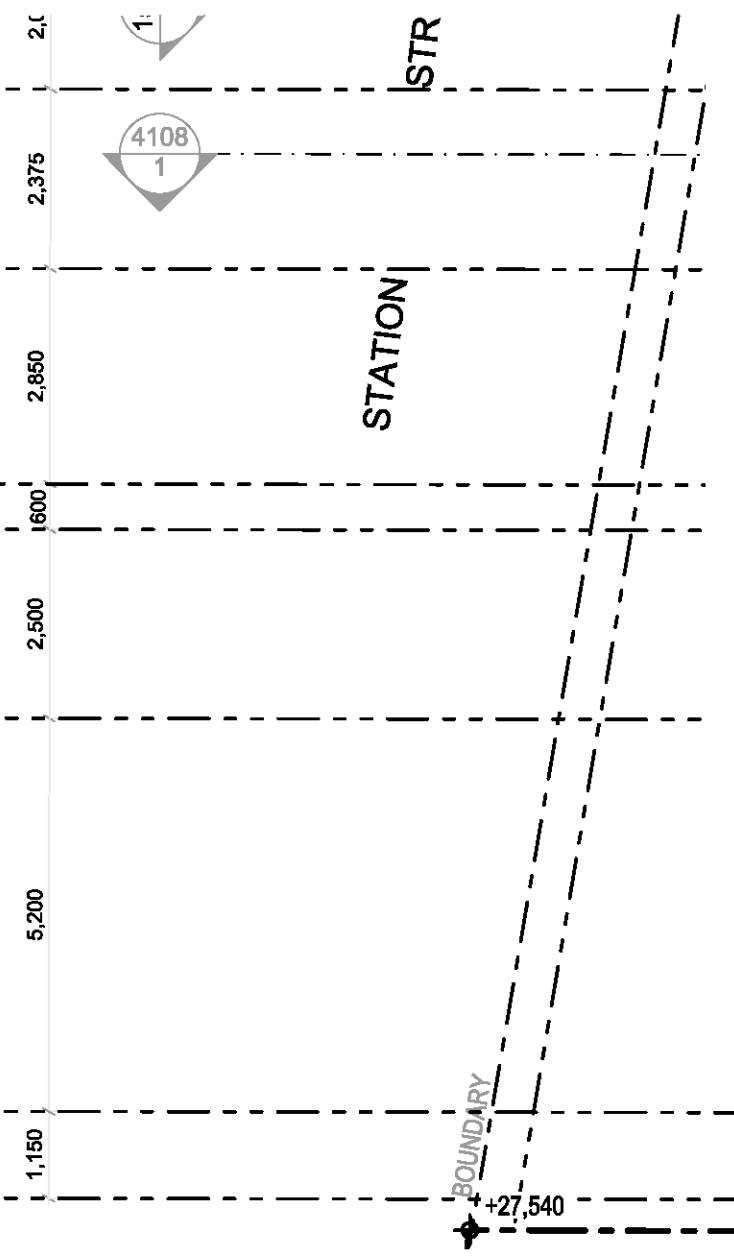
BOUNDARY 30.9m

BOUNDARY 30.3m

BOUNDARY 31.4m

6M SETBACKS

6M SETBACKS



Notes:  
Please refer to Landscape drawings for details

**Issue For Amended DA**

Rev	Date	Amendment	By	Rev	Date	Amendment	By
01	10/09/2020	Issue For Commencement	VA				
02	20/09/2020	Issue For Commencement	VA				
03	20/09/2020	Issue For DA	VA				
04	28/09/2021	Issue For Amended DA	VA				

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 ABN: 90 616 216 196  
 NSW Nominated Architect  
 Pavlo Doroch 9170

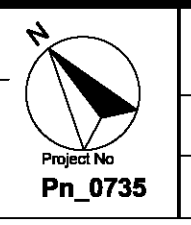
Structural Engineer:  
#Structural Engineer  
Mechanical Services:  
#Mechanical Engineer  
Electrical Services:  
#Electrical Engineer

Hydraulic Services:  
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Fire Services:  
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BCA and Access Consultant:  
#BCA & Access Consultant

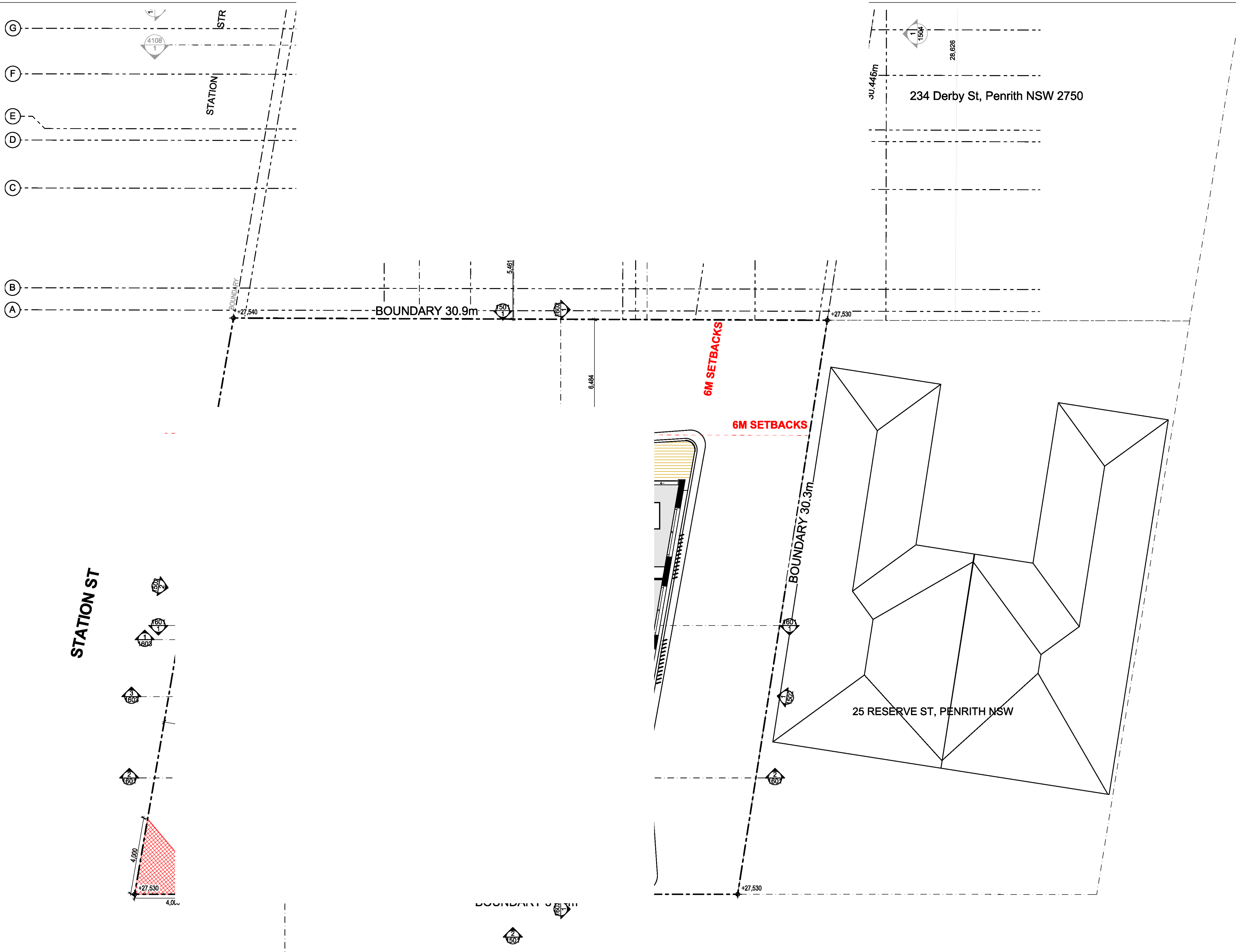
Principal Certifying Authority:  
#Principal Certifying Authority  
Landscape Architect:  
#Landscape Architect  
Acoustic Engineer:  
#Acoustic Engineer



Client:  
MR David Reeves  
Project:  
MIXED USE DEVELOPMENT  
Address:  
118 - 120 STATION STREET  
PENRITH NSW 2750 Australia



Project No	Date	A1 Scale	A3 Scale	Revision
1302	28/09/2021	1:100	50%	04



Notes:  
Please refer to Landscape drawings for details

**Issue For Amended DA**

Rev	Date	Amendment	By	Rev	Date	Amendment	By
01	10/09/2020	Issue For Consultation	VA				
02	20/09/2020	Issue For Consultation	VA				
03	20/09/2020	Issue For DA	VA				
04	28/09/2021	Issue For Amended DA	VA				

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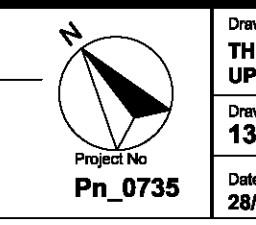


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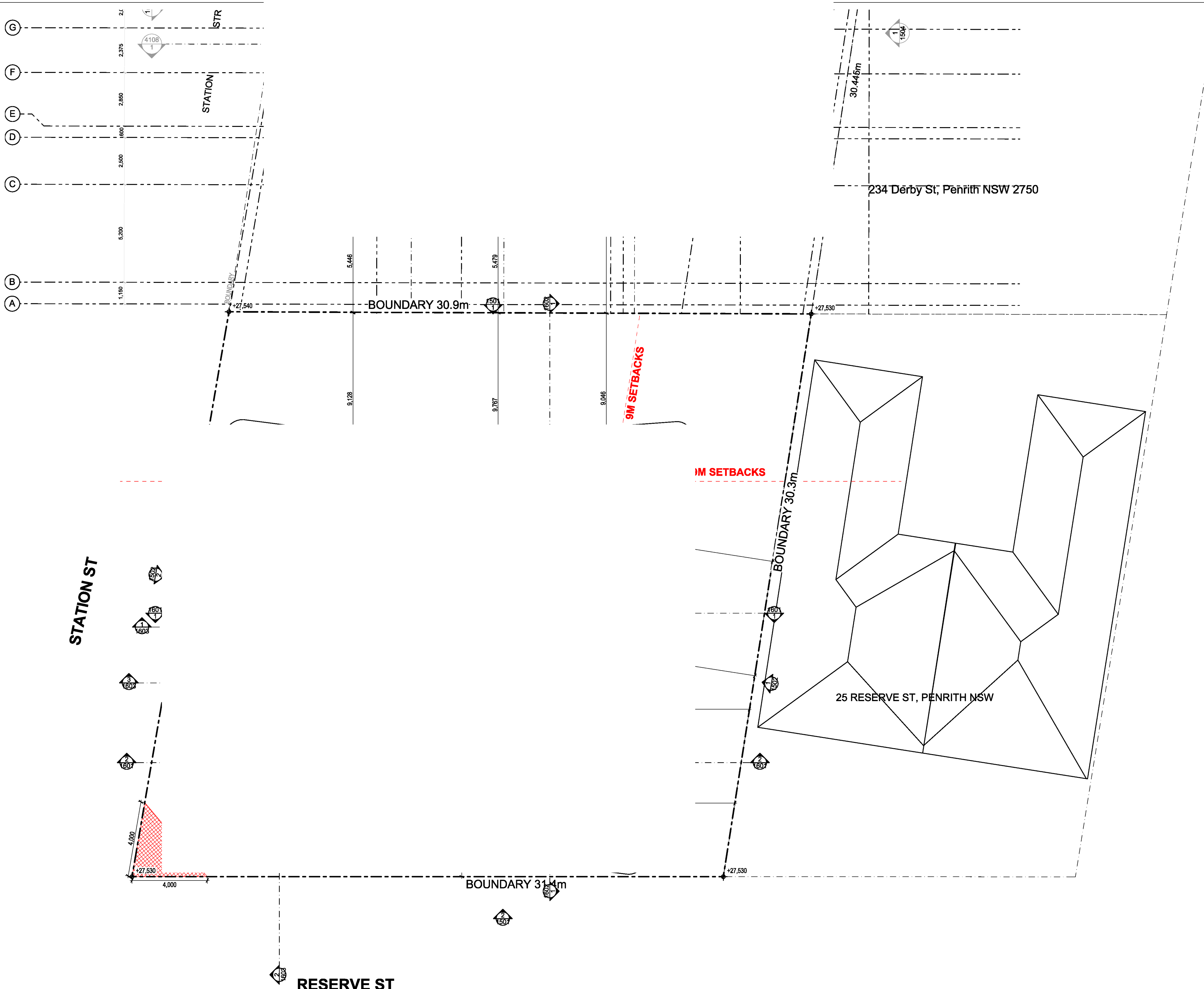
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Mechanical Services: #Mechanical Engineer	Fire Services: #Fire Engineer	Landscape Architect: #Landscape Architect
Electrical Services: #Electrical Engineer	BCA and Access Consultant: #BCA & Access Consultant	Acoustic Engineer: #Acoustic Engineer



Client: MR David Reeves  
 Project: MIXED USE DEVELOPMENT  
 Address: 118 - 120 STATION STREET  
 PENRITH NSW 2750 Australia



Project No	Revision
1303	04
Date: 28/09/2021	Checked: IS
A1 Scale: 1:100	A3 Scale: 50%



Notes:  
Please refer to Landscape drawings for details

**Issue For Amended DA**

Rev	Date	Amendment	By
01	10/09/2020	Issue For Consultation	VA
02	24/09/2020	Issue For Consultation	VA
03	24/09/2020	Issue For DA	VA
04	28/09/2021	Issue For Amended DA	VA

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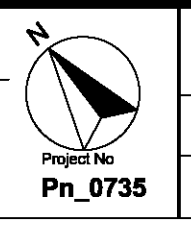
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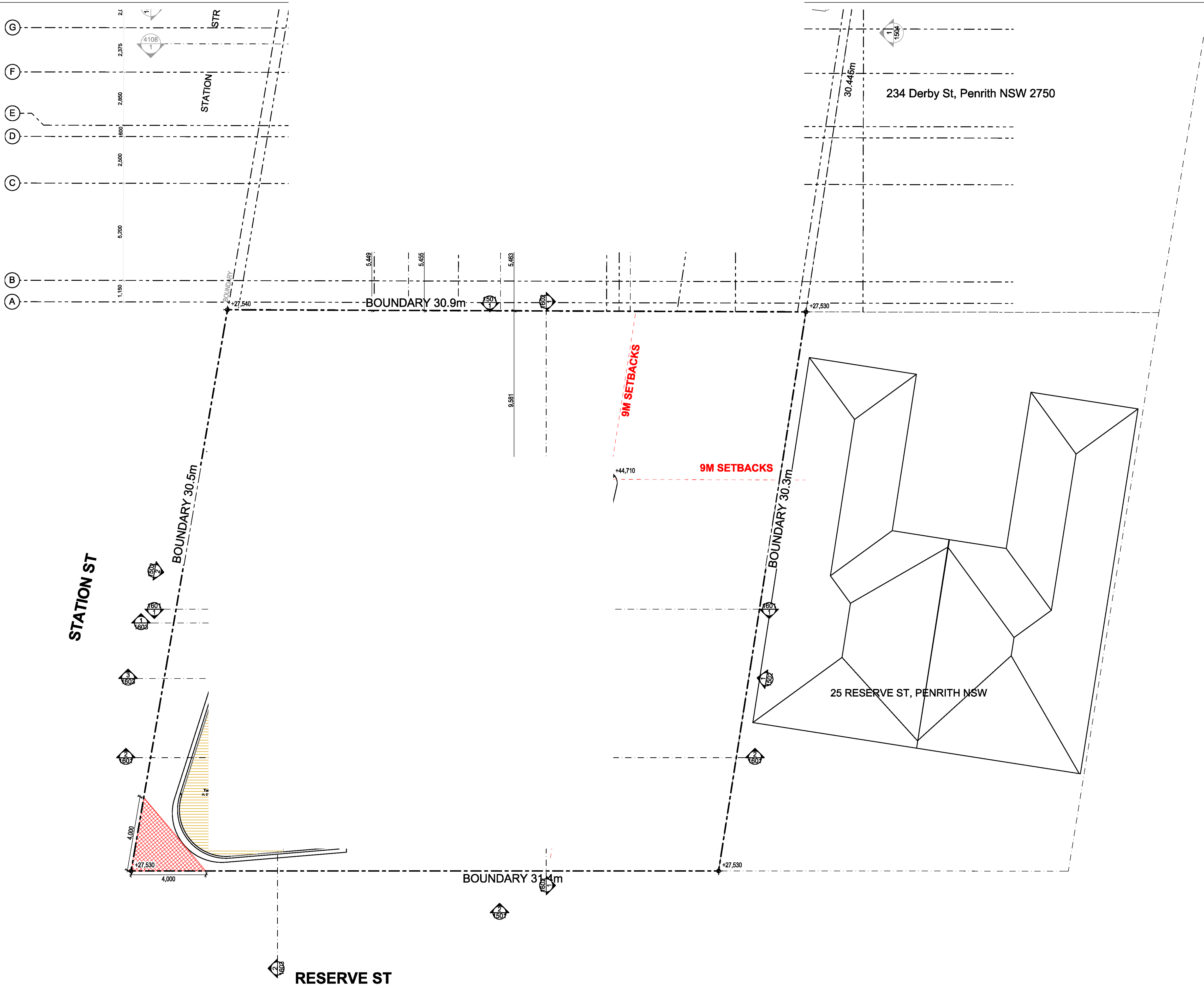
Structural Engineer: #Structural Engineer	Hydraulic Services: #Hydraulic Engineer	Principal Certifying Authority: #Principal Certifying Authority
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Client: MR David Reeves  
 Project: MIXED USE DEVELOPMENT  
 Address: 118 - 120 STATION STREET  
 PENRITH NSW 2750 Australia



Project No	Date	A1 Scale	A3 Scale	Checked
1304	28/09/2021	1:100	50%	IS



Notes:  
Please refer to Landscape drawings for details

**Issue For Amended DA**

Rev	Date	Amendment	By	Rev	Date	Amendment	By
01	10/09/2020	Issue For Consultation	VA				
02	24/09/2020	Issue For Consultation	VA				
03	24/09/2020	Issue For DA	VA				
04	28/09/2021	Issue For Amended DA	VA				

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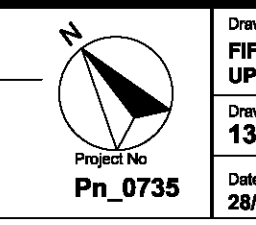
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 Fire Services: #Fire Engineer  
 BCA and Access Consultant: #BCA & Access Consultant

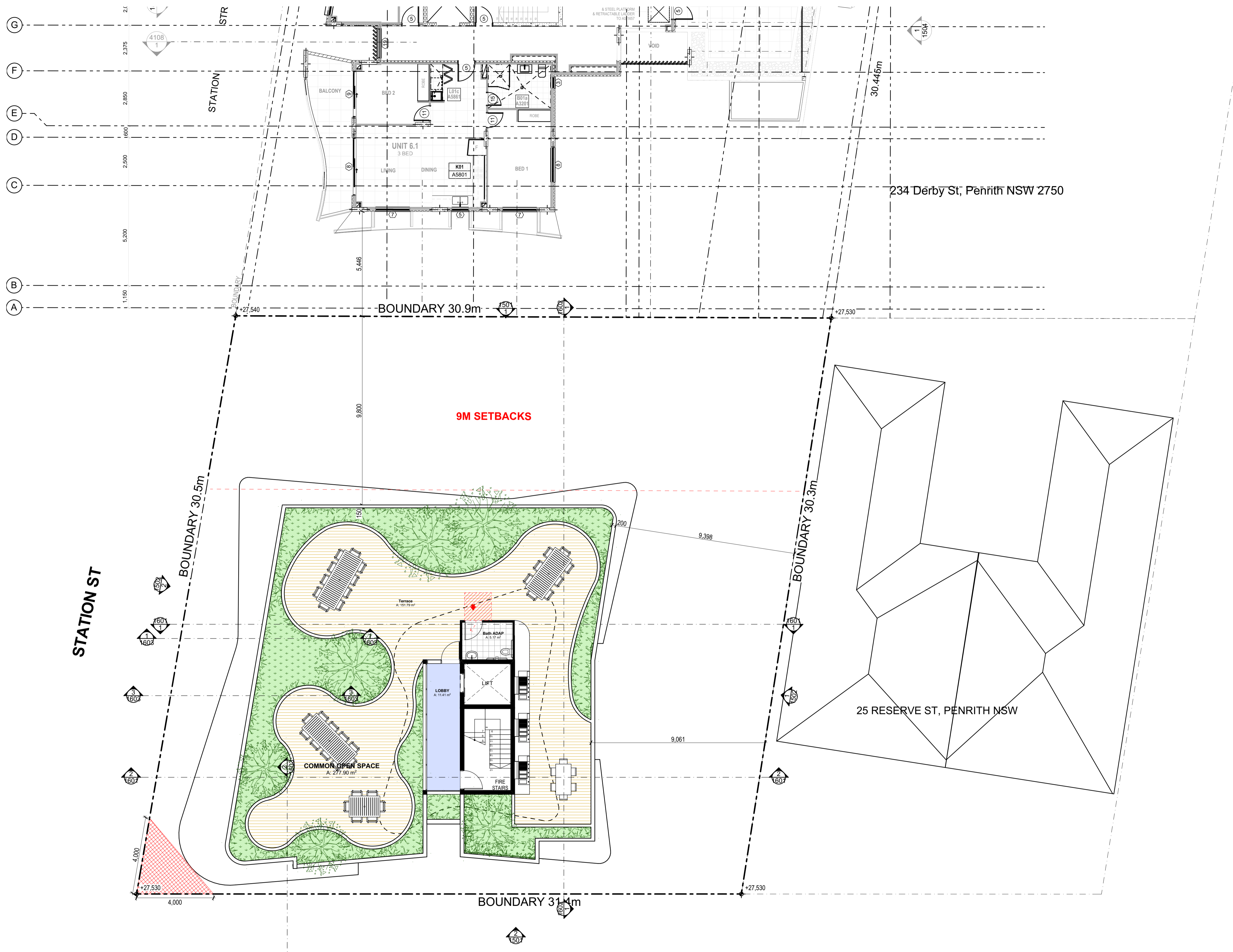
Principal Certifying Authority: #Principal Certifying Authority  
 Landscape Architect: #Landscape Architect  
 Acoustic Engineer: #Acoustic Engineer



Client: MR David Reeves  
 Project: MIXED USE DEVELOPMENT  
 Address: 118 - 120 STATION STREET PENRITH NSW 2750 Australia



Project No	Date	A1 Scale	A3 Scale	Checked
1305	28/09/2021	1:100	50%	IS



234 Derby St, Penrith NSW 2750

25 RESERVE ST, PENRITH NSW

Notes:  
Please refer to Landscape drawings for details

**Issue For Amended DA**

Rev	Date	Amendment	By	Rev	Date	Amendment	By
01	05/02/2020	Issue For Consultation	VA				
02	24/02/2020	Issue For Consultation	VA				
03	24/02/2020	Issue For DA	VA				
04	28/02/2021	Issue For Amended DA	VA				

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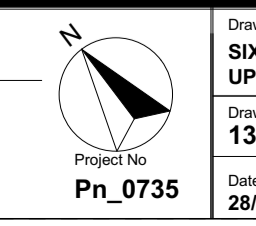
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 ABN: 90 616 216 196

NSW Nominated Architect  
 Pavlo Doroch 9170

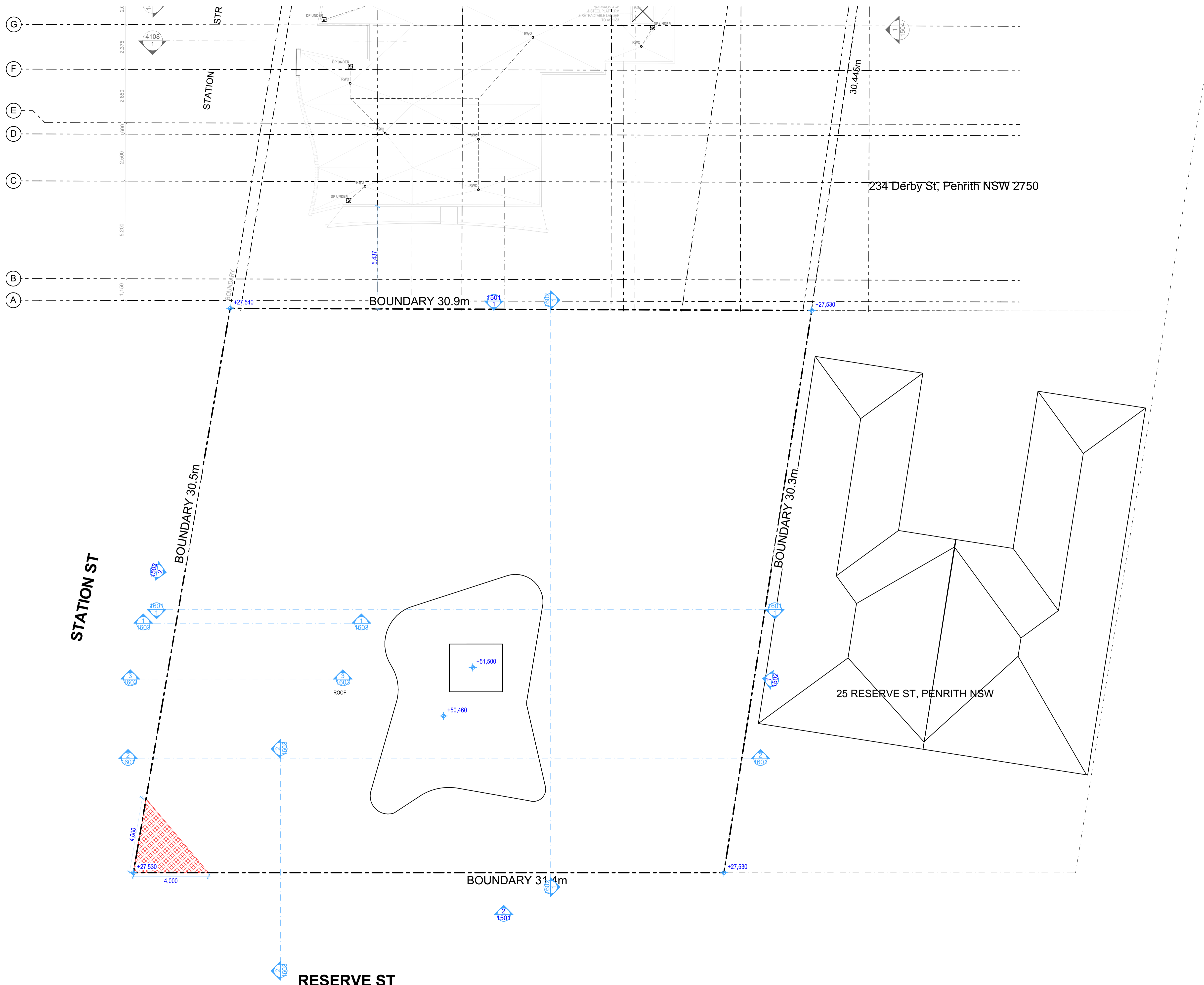
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 Mechanical Services: #Mechanical Engineer  
 Electrical Services: #Electrical Engineer  
 Hydraulic Services: #Hydraulic Engineer  
 Fire Services: #Fire Engineer  
 BCA and Access Consultant: #BCA & Access Consultant  
 Principal Certifying Authority: #Principal Certifying Authority  
 Landscape Architect: #Landscape Architect  
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Client: **MR David Reeves**  
 Project: **MIXED USE DEVELOPMENT**  
 Address: **118 - 120 STATION STREET PENRITH NSW 2750 Australia**



Project No	Date	A1 Scale	A3 Scale	Checked
1306	28/09/2021	1:100	50%	IS



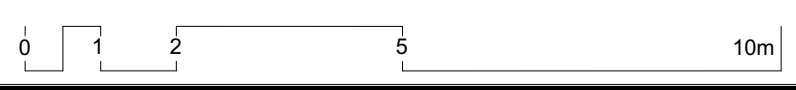
234 Derby St, Penrith NSW 2750

25 RESERVE ST, PENRITH NSW

STATION ST

RESERVE ST

**Issue For Amended DA**



Rev	Date	Amendment	By	Rev	Date	Amendment	By
01	10/08/2020	Issue For Consultation	VA				
02	24/08/2020	Issue For Consultation	VA				
03	24/08/2020	Issue For DA	VA				
04	28/09/2021	Issue For Amended DA	VA				

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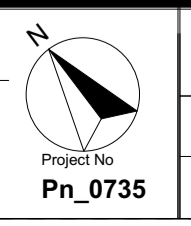


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 NSW Nominated Architect  
 Pavlo Doroch 9170

Structural Engineer: #Structural Engineer	Hydraulic Services: #Hydraulic Engineer	Principal Certifying Authority: #Principal Certifying Authority
Mechanical Services: #Mechanical Engineer	Fire Services: #Fire Engineer	Landscape Architect: #Landscape Architect
Electrical Services: #Electrical Engineer	BCA and Access Consultant: #BCA & Access Consultant	Acoustic Engineer: #Acoustic Engineer



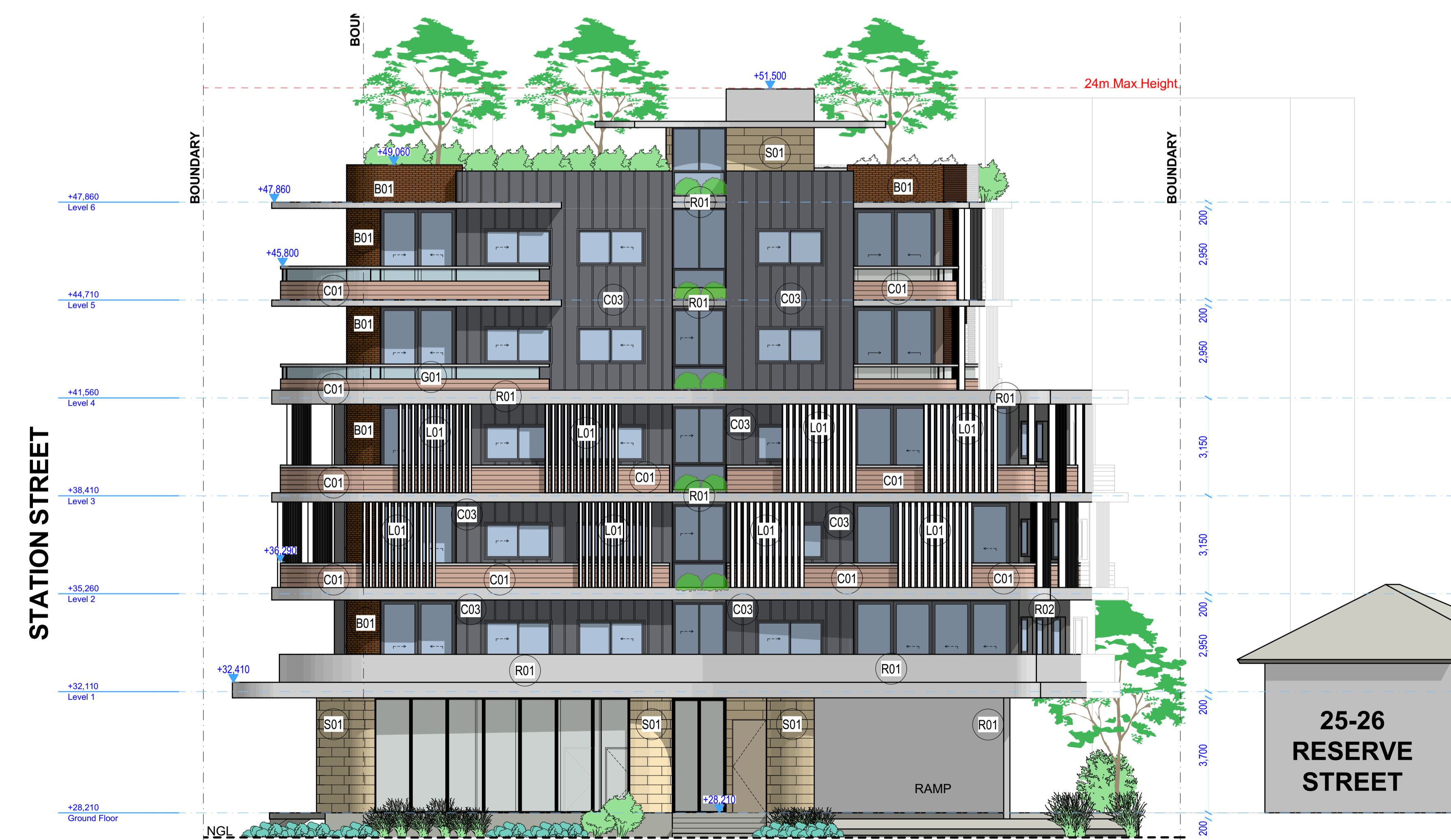
Client: **MR David Reeves**  
 Project: **MIXED USE DEVELOPMENT**  
 Address: **118 - 120 STATION STREET PENRITH NSW 2750 Australia**



Drawing Title	Revision
ROOF PLAN	04
Drawing No: 1401	Checked: IS
Date: 28/09/2021	A1 Scale: 1:100
	A3 Scale: 50%



1 - North Elevation  
1:100



2 - South Elevation  
1:100

CODE	MATERIAL & FINISH
R01	RENDER - WHITE DULUX - Weathershield Low Sheen - LRV: 5-20% Blissful White LRV: 81%
R02	RENDER - GREY DULUX - Weathershield Medium Sheen - LRV: 5-20% Dark Grey LRV Value: 13
B01	FACE BRICK AUSTRAL BRICKS - Brick San Selmo Reclaimed 230x76-110-240
C01	ALUMINIUM CLADDING PANEL TIMBER FINISH COVET - Interlocking Timber Look Plank Cladding - Ever Art Wood Express Finish: Baraun Eboni LRV: 10.12%
C03	CLADDING PANEL BLACK Cladding Standing Seam - 330mm Sheet Cover. Finish: DULUX COLORBOND Woodland Grey (LRV: 12%)
L01	VERTICAL ALUMINIUM LOUVRE DULUX - Powder Coat Finish: Shoji White Satin LRV: 76%
S01	SANDSTONE
G01	GLASS BALUSTRADE

Rev	Date	Amendment	By	Rev	Date	Amendment	By
01	05/02/2020	Issue For Consultation	VA				
02	24/02/2020	Issue For Consultation	VA				
03	23/03/2020	Issue For DA	VA				
04	28/02/2021	Issue For Amended DA	VA				

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 Acoustic Engineer: #Acoustic Engineer



Client: **MR David Reeves**  
 Project: **MIXED USE DEVELOPMENT**  
 Address: **118 - 120 STATION STREET PENRITH NSW 2750 Australia**  
 Project No: **Pn\_0735**

Drawing Title	Revision
North & South Elevations GA ELEVATION	04
Drawing No: 1501	04
Date: 28/09/2021	Checked: IS
A1 Scale: 1:100	A3 Scale: 50%

**Issue For Amended DA**



East Elevation  
1:100



West Elevation  
1:100

CODE	MATERIAL & FINISH
R01	RENDER - WHITE DULUX - Weathershield Low Sheen - LRV: 5-20% Blissful White LRV: 81%
R02	RENDER - GREY DULUX - Weathershield Medium Sheen - LRV: 5-20% Dark Grey LRV Value: 13
B01	FACE BRICK AUSTRAL BRICKS - Brick San Selmo Reclaimed 230x76-110-240
C01	ALUMINIUM CLADDING PANEL TIMBER FINISH COVET - Interlocking Timber Look Plank Cladding - Ever Art Wood Express Finish: Baraun Ebony LRV: 10.12%
C03	CLADDING PANEL BLACK Cladding Standing Seam - 330mm Sheet Cover. Finish: DULUX COLORBOND Woodland Grey (LRV: 12%)
L01	VERTICAL ALUMINIUM LOUVRE DULUX - Powder Coat Finish: Shoji White Satin LRV: 76%

RESERVE STREET

**Issue For  
Amended DA**

Rev	Date	Amendment	By	Rev	Date	Amendment	By
01	20/09/2020	Issue For Consultation	VA				
02	24/09/2020	Issue For Consultation	VA				
03	24/09/2020	Issue For DA	VA				
04	28/09/2021	Issue For Amended DA	VA				

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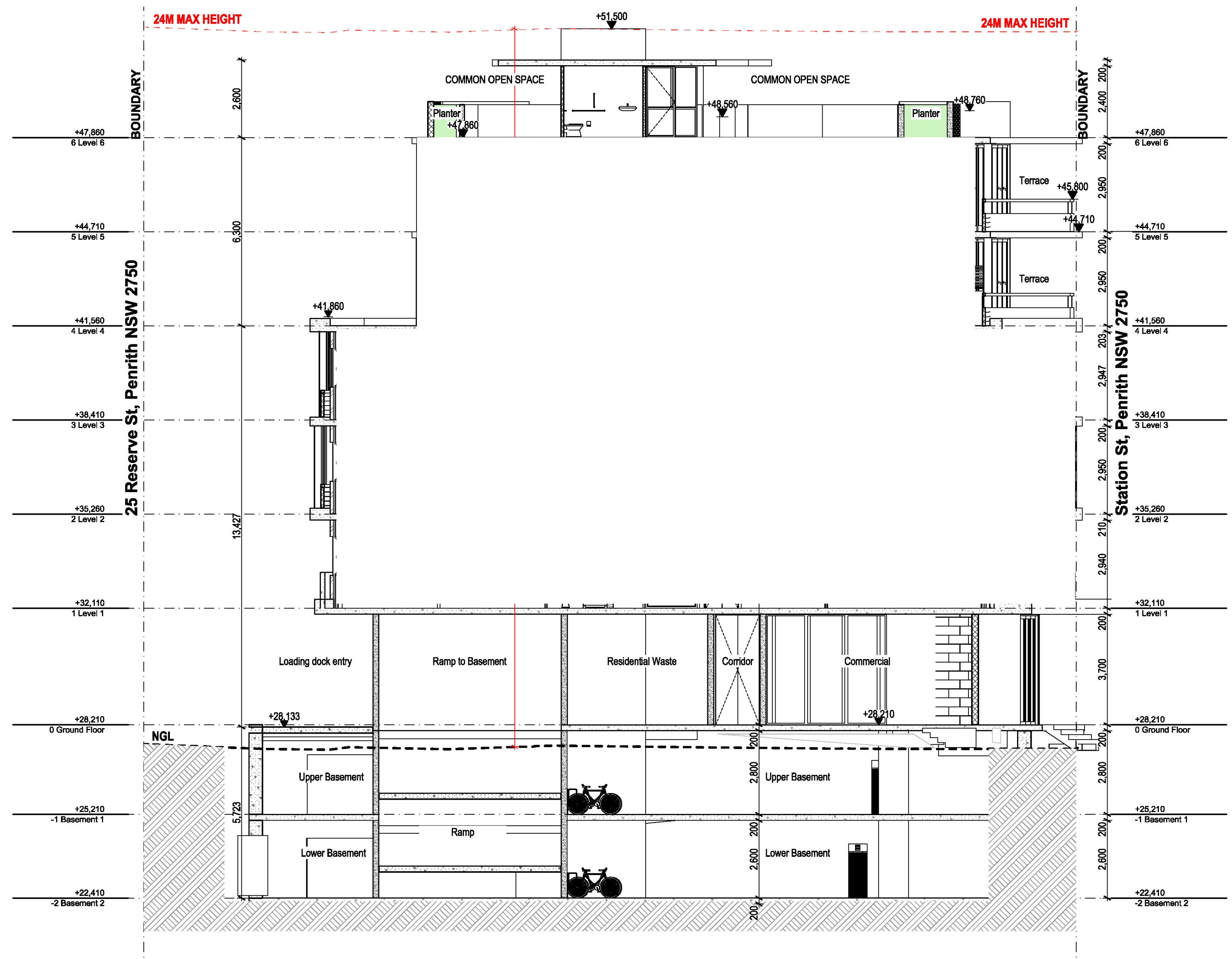
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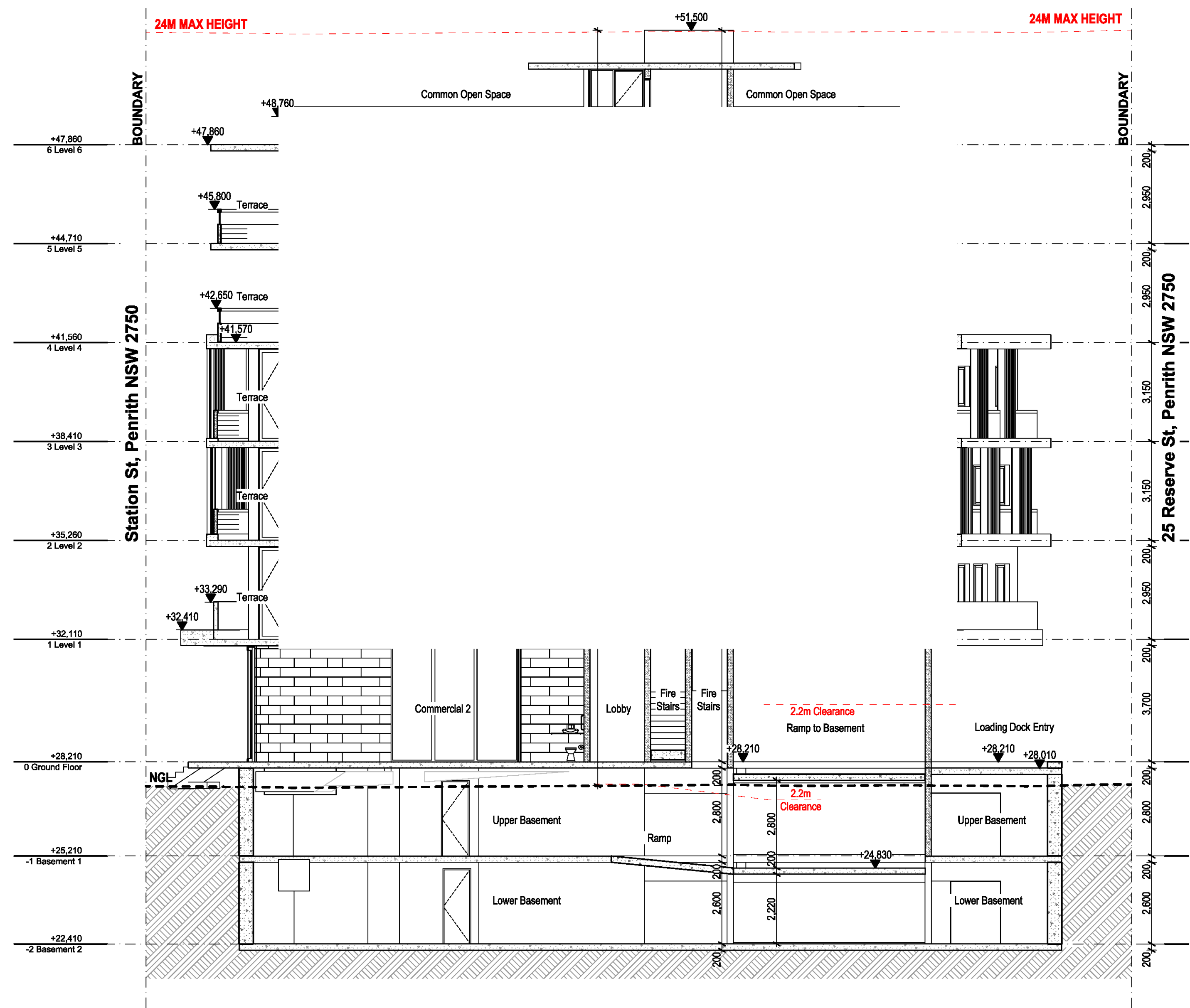


Client: MR David Reeves  
 Project: MIXED USE DEVELOPMENT  
 Address: 118 - 120 STATION STREET  
 PENRITH NSW 2750 Australia  
 Project No: Pn.0735

Revision	Date	Checked	IS
04	28/09/2021		



1 Section 01  
1:100



2 Section 02  
1:100

Rev	Date	Amendment	By	Rev	Date	Amendment	By
01	10/09/2020	Issue For Commencement	VA				
02	20/09/2020	Issue For Commencement	VA				
03	20/09/2020	Issue For DA	VA				
04	28/09/2021	Issue For Amended DA	VA				

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Hydraulic Services: #Hydraulic Engineer  
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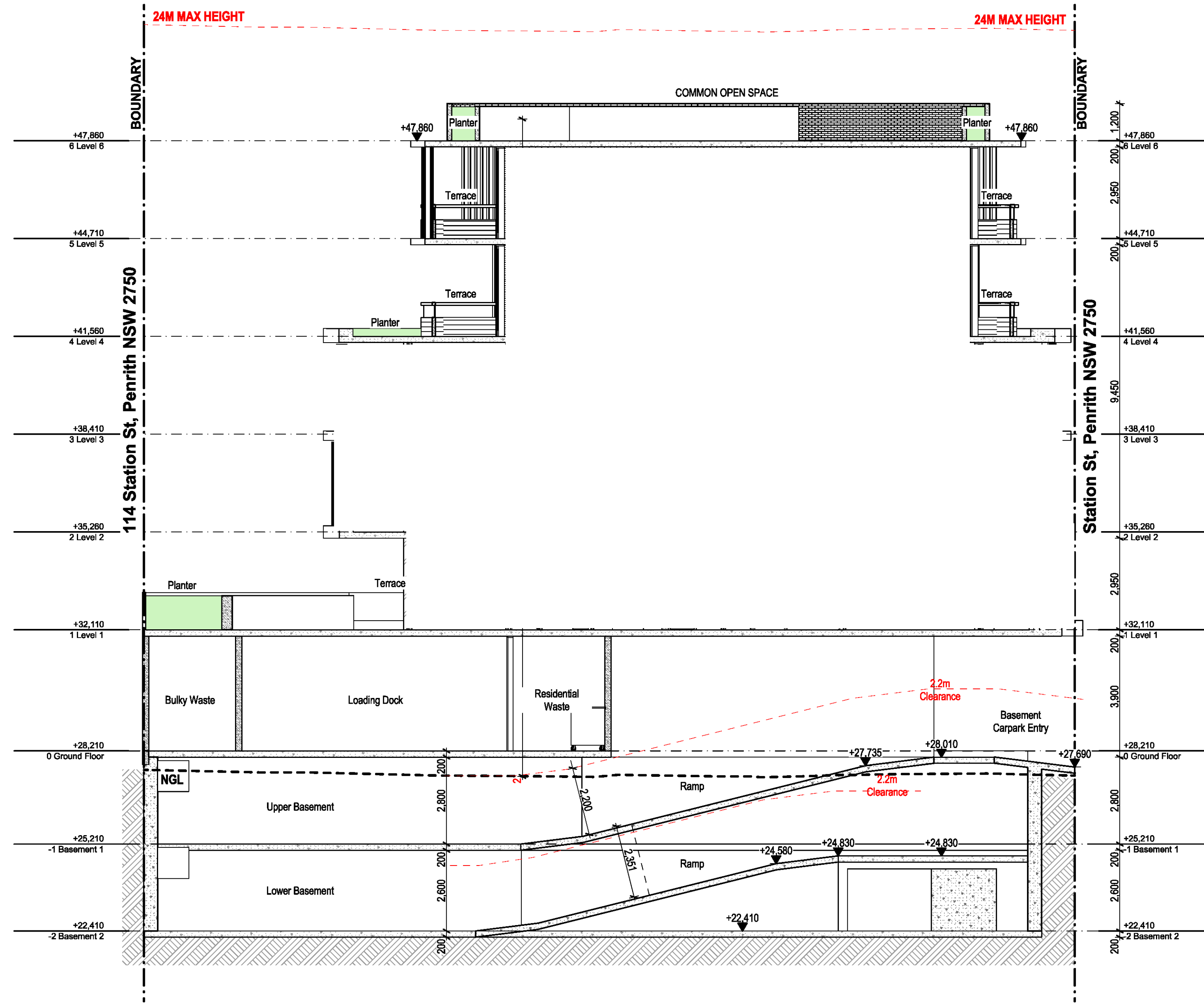
Principal Certifying Authority: #Principal Certifying Authority  
 Landscape Architect: #Landscape Architect  
 Acoustic Engineer: #Acoustic Engineer



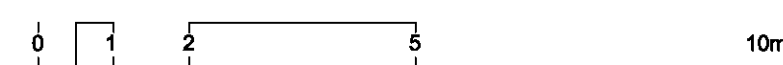
Client: MR David Reeves  
 Project: MIXED USE DEVELOPMENT  
 Address: 118 - 120 STATION STREET PENRITH NSW 2750 Australia  
 Project No: Prn\_0735

Drawing Title	Drawing No	Revision
Section 01 & 02 GA SECTION	1601	04
Date	A1 Scale	A3 Scale
28/09/2021	1:100	50%
Checked	IS	

**Issue For Amended DA**



1  
-  
Section 03  
1:100



**Issue For Amended DA**

Rev	Date	Amendment	By	Rev	Date	Amendment	By
01	10/09/2020	Issue For Consultation	VA				
02	24/09/2020	Issue For Consultation	VA				
03	16/09/2021	Issue For Consultation	VA				
04	23/09/2021	Issue For DA	BT				
05	28/09/2021	Issue For Amended DA	BT				

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Structural Engineer: #Structural Engineer  
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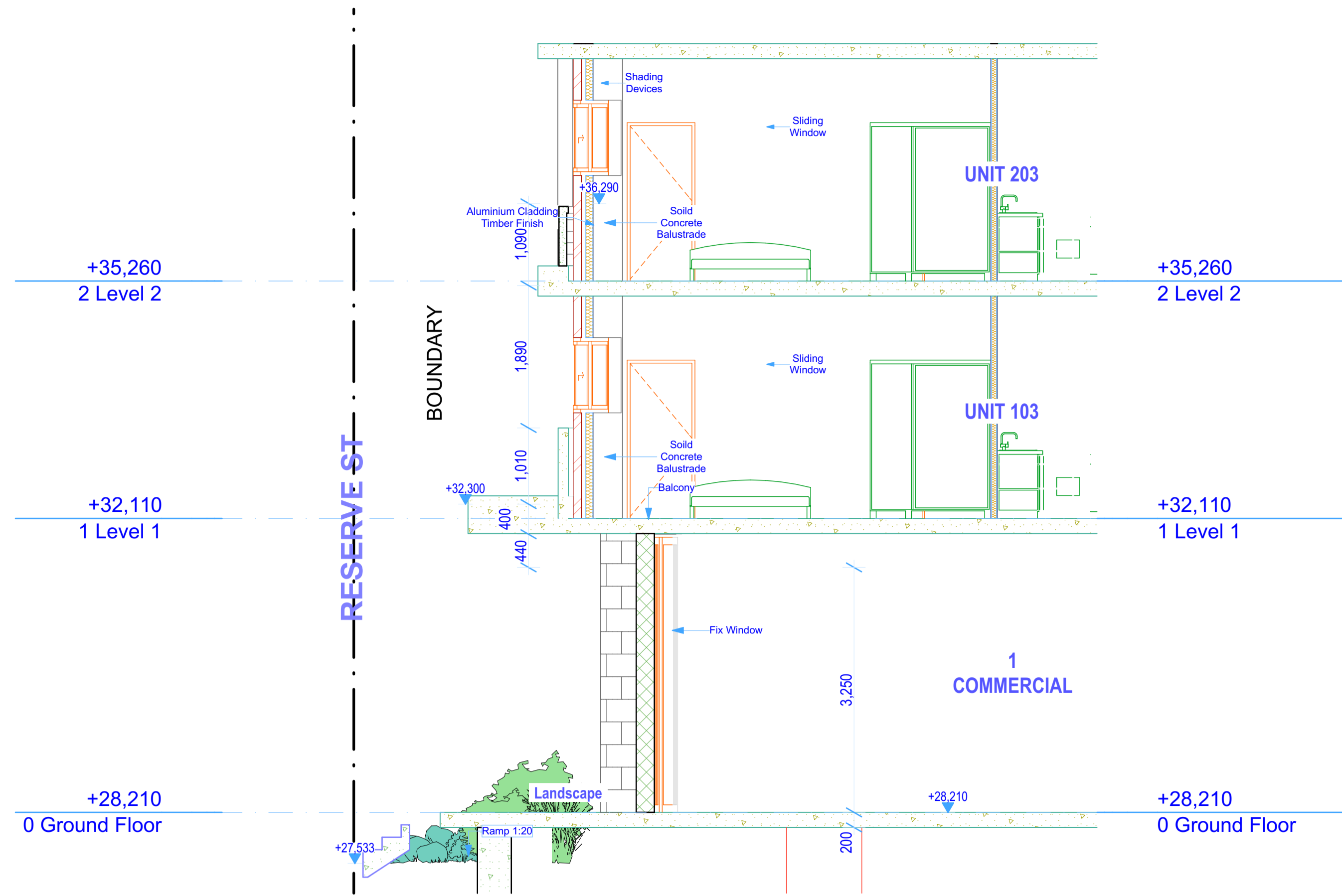
Hydraulic Services: #Hydraulic Engineer  
 Fire Services: #Fire Engineer  
 BCA and Access Consultant: #BCA & Access Consultant

Principal Certifying Authority: #Principal Certifying Authority  
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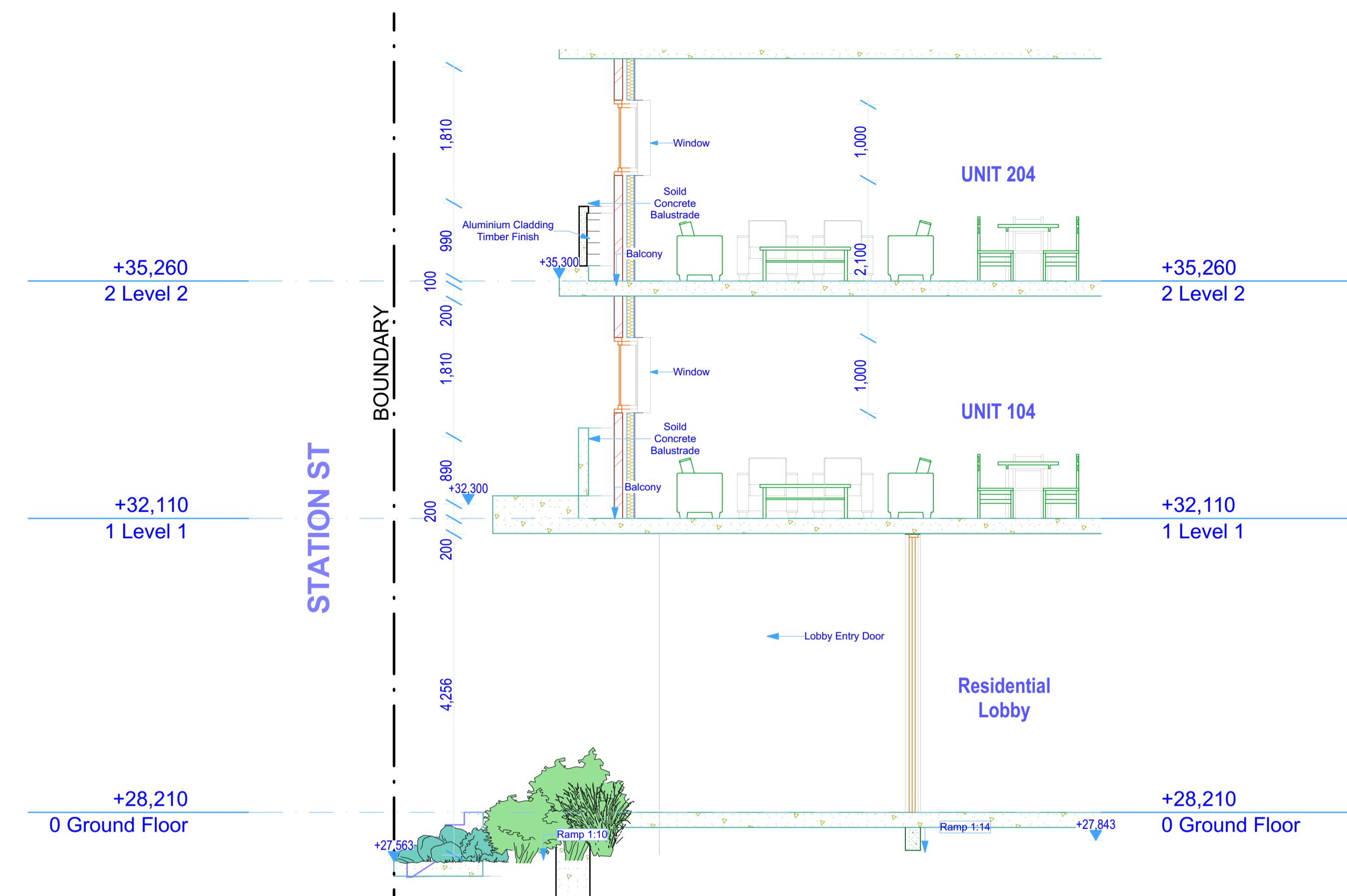
Client: MR David Reeves  
 Project: MIXED USE DEVELOPMENT  
 Address: 118 - 120 STATION STREET PENRITH NSW 2750 Australia  
 Project No: Pn\_0735

Drawing Title: Section 03 GA SECTION  
 Drawing No: 1602  
 Revision: 05  
 Date: 28/09/2021  
 A1 Scale: 1:100  
 A3 Scale: 50%

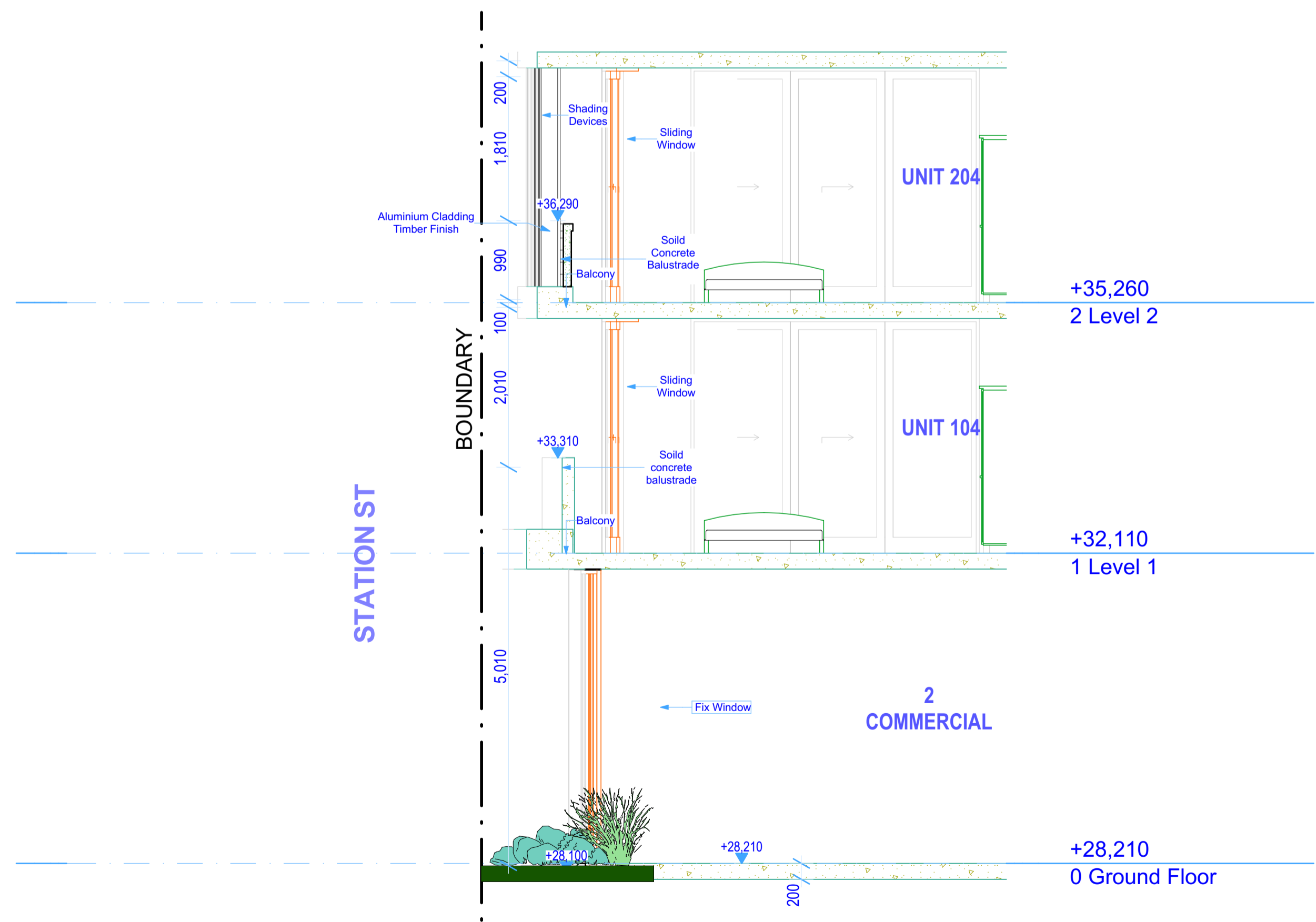




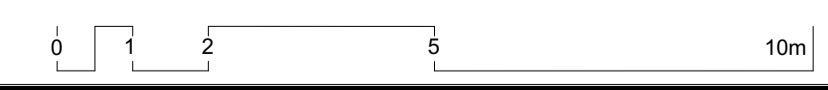
1 A Section  
1:50



3 C Section  
1:50



2 B Section  
1:50



**Issue For Amended DA**

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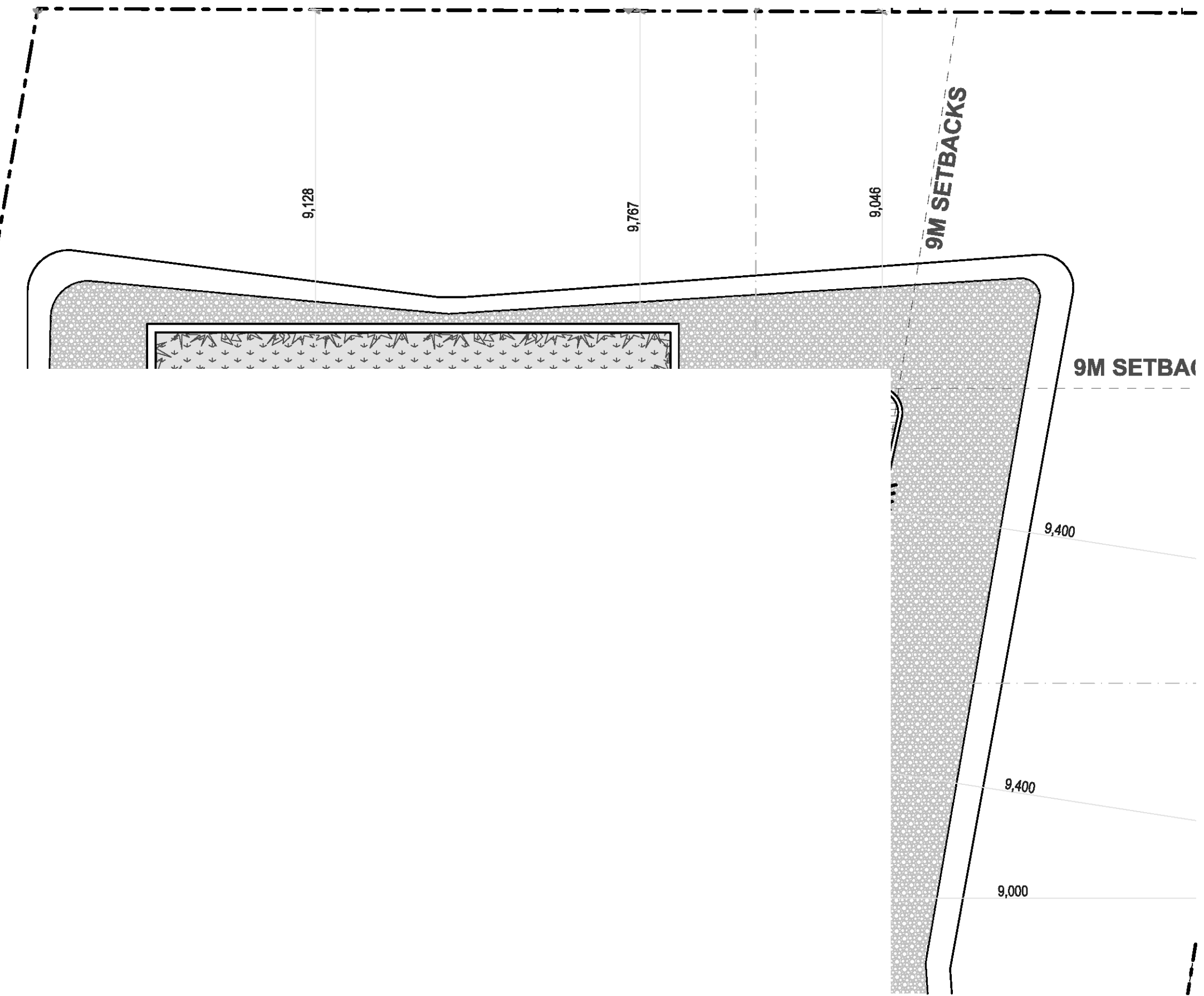
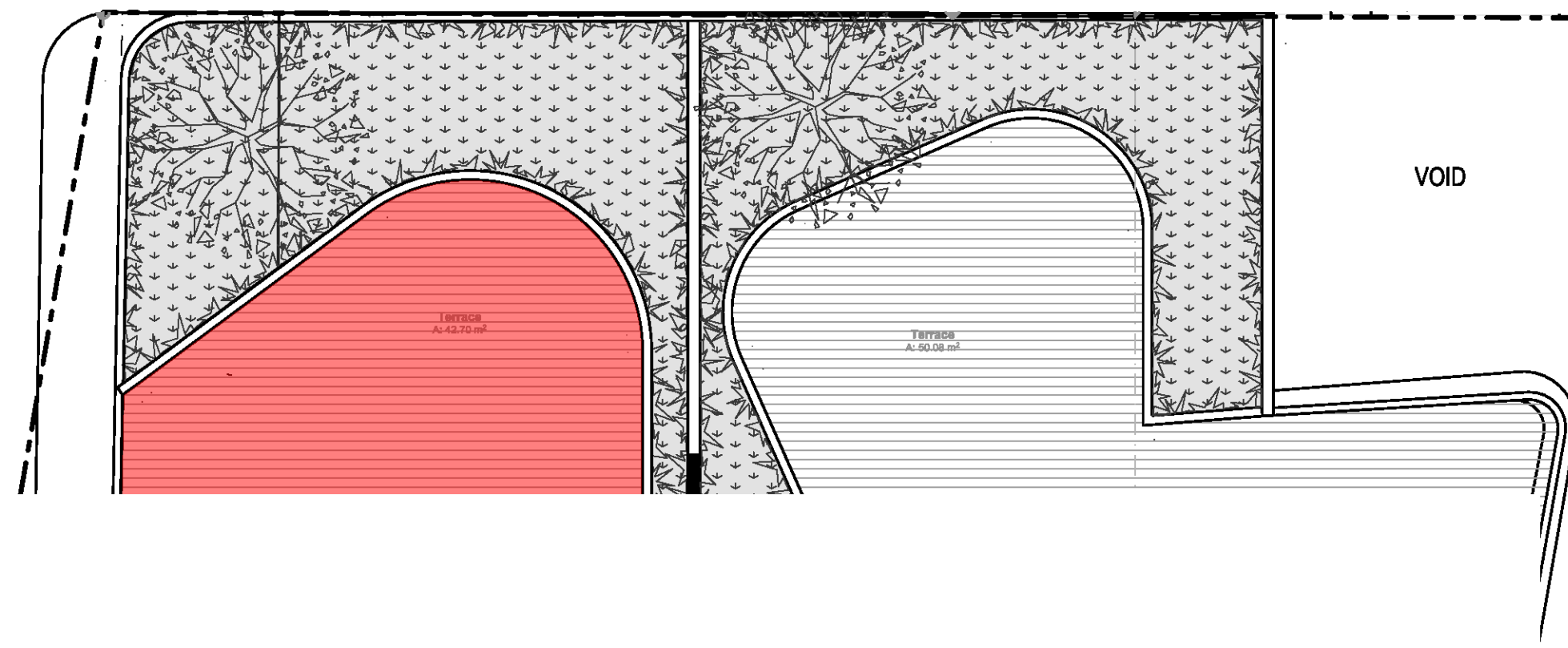
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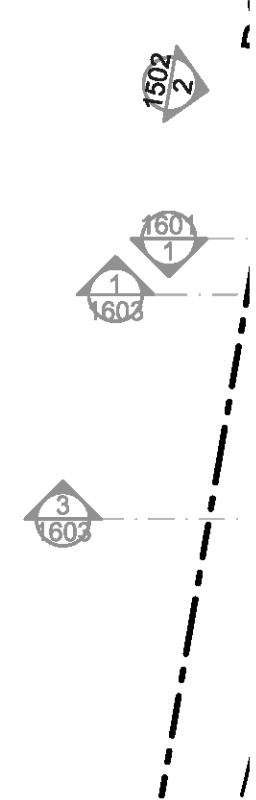


Client: **MR David Reeves**  
 Project: **MIXED USE DEVELOPMENT**  
 Address: **118 - 120 STATION STREET PENRITH NSW 2750 Australia**

Project No:	<b>Prn_0735</b>
Drawing Title:	<b>Detail Section GA SECTION</b>
Drawing No:	<b>1603</b>
Revision:	<b>02</b>
Date:	<b>28/09/2021</b>
A1 Scale:	<b>50%</b>
A3 Scale:	<b>50%</b>
Checked:	

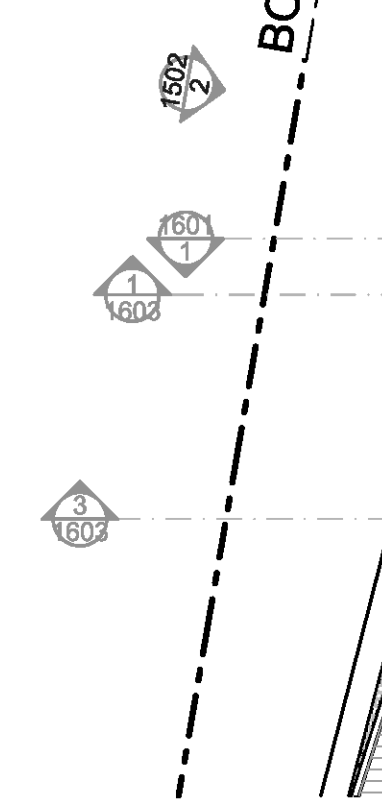


STATION ST



1 KEY MAP LIVABLE UNITS LEVEL 1,2&3  
1:100

STATION ST



3 KEY MAP ADAPTABLE UNITS LEVEL 4 & 5  
1:100



2 TYPICAL ACCESSIBLE UNIT CONFIGURATION  
1:50

- TOTAL UNITS**  
01-02, 01-03, 02-02, 02-03, 03-02 & 03-03
- ADAPTABLE UNITS**  
04-02 & 05-02
- LIVABLE UNITS**  
01-03, 02-03 & 03-03

Circulation spaces at doorways to comply with AS 1428.1

Bed clearances comply with AS 1428.1

Circulation spaces at doorways to comply with AS 1428.1

Folding Seat

Circulation spaces at Kitchen to comply with AS 4299

Shower recess with no hob min 1150mm x 1100mm to comply with AS 1428.1

**Issue For Amended DA**

Rev	Date	Amendment	By	Rev	Date	Amendment	By
01	10/09/2020	Issue For Consultation	YA				
02	20/09/2020	Issue For Consultation	YA				
03	20/09/2020	Issue For DA	YA				
04	28/09/2021	Issue For Amended DA	YA				

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 info@ad-s.com.au | www.ad-s.com.au  
 ABN: 90 616 216 196  
 NSW Nominated Architect  
 Pavlo Doroch 9170

Structural Engineer: #Structural Engineer  
 Mechanical Services: #Mechanical Engineer  
 Electrical Services: #Electrical Engineer

Hydraulic Services: #Hydraulic Engineer  
 Fire Services: #Fire Engineer  
 BCA and Access Consultant: #BCA & Access Consultant

Principal Certifying Authority: #Principal Certifying Authority  
 Landscape Architect: #Landscape Architect  
 Acoustic Engineer: #Acoustic Engineer



Client: MR David Reeves  
 Project: MIXED USE DEVELOPMENT  
 Address: 118 - 120 STATION STREET PENRITH NSW 2750 Australia  
 Project No: Prn\_0735

Drawing Title		Revision	
TYPICAL ACCESSIBLE UNIT CONFIGURATION		04	
Drawing No	3001	Date	28/09/2021
A1 Scale	1:100, 1:50	A3 Scale	50%
Checked	IS	Checked	IS



**LEGEND**

CALCULATED GFA

Natural Ventilation

STATION ST

RESERVE ST

**Issue For Amended DA**

Rev	Date	Amendment	By	Rev	Date	Amendment	By
01	20/09/2020	Issue For Consultation	VA				
02	24/09/2020	Issue For Consultation	VA				
03	24/09/2020	Issue For DA	VA				
04	28/09/2021	Issue For Amended DA	VA				

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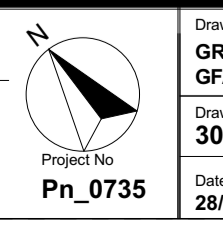
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 Pavlo Doroch 9170

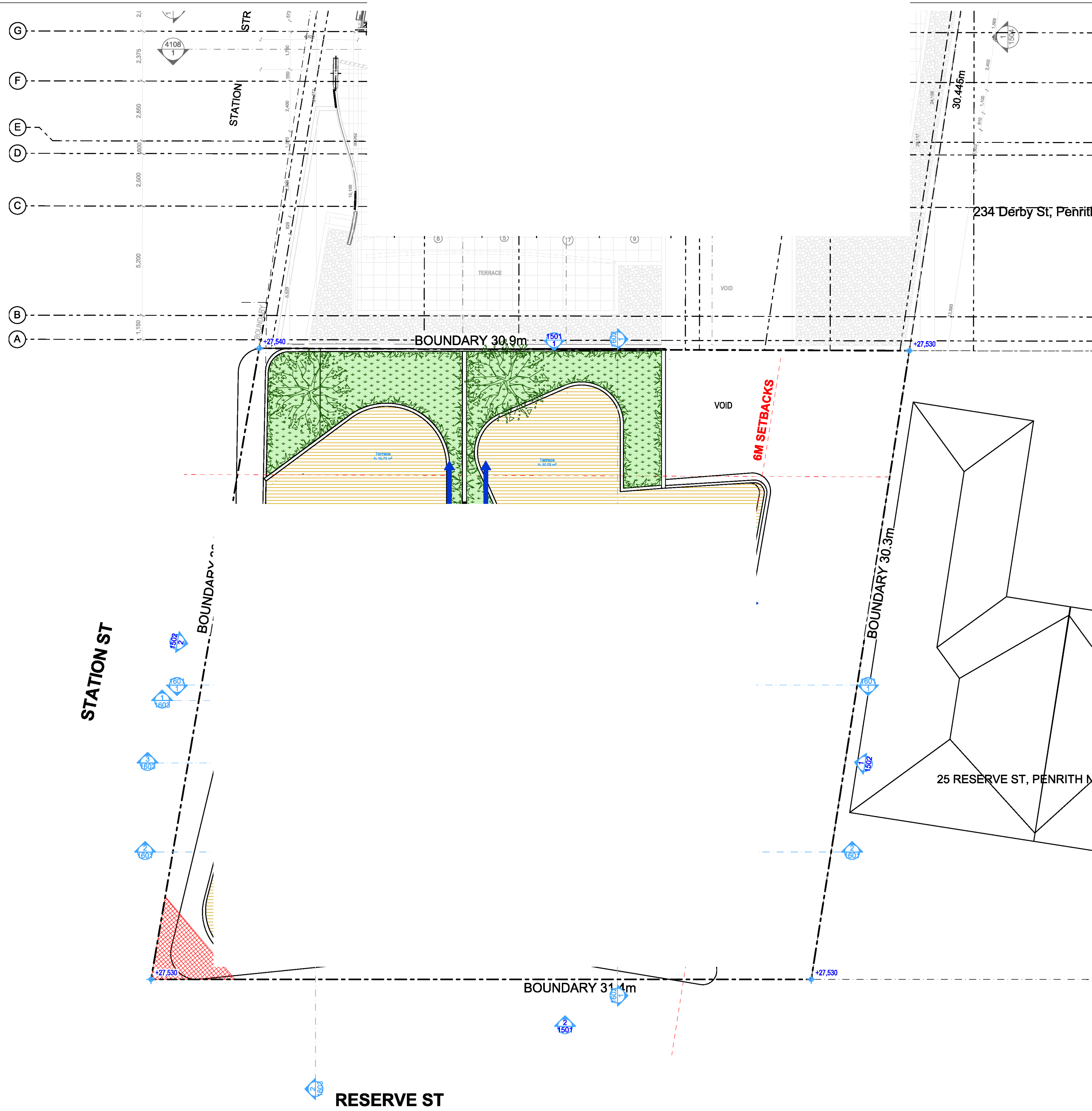
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 Mechanical Services: #Mechanical Engineer  
 Electrical Services: #Electrical Engineer  
 Hydraulic Services: #Hydraulic Engineer  
 Fire Services: #Fire Engineer  
 BCA and Access Consultant: #BCA & Access Consultant  
 Principal Certifying Authority: #Principal Certifying Authority  
 Landscape Architect: #Landscape Architect  
 Acoustic Engineer: #Acoustic Engineer



Client: **MR David Reeves**  
 Project: **MIXED USE DEVELOPMENT**  
 Address: **118 - 120 STATION STREET PENRITH NSW 2750 Australia**



Drawing Title	Revision
GROUND FLOOR - GFA & CROSS VENTILATION	04
Drawing No: 3021	Checked: IS
Date: 28/09/2021	A1 Scale: 1:100
	A3 Scale: 50%



**LEGEND**

CALCULATED GFA

Natural Ventilation

**STATION ST**

**RESERVE ST**

234 Derby St, Penrith

25 RESERVE ST, PENRITH

BOUNDARY 30.9m

BOUNDARY 30.3m

BOUNDARY 31.4m

6M SETBACKS

VOID

TERRACE

VOID

Structural Engineer: #Structural Engineer	Hydraulic Services: #Hydraulic Engineer	Principal Certifying Authority: #Principal Certifying Authority
Mechanical Services: #Mechanical Engineer	Fire Services: #Fire Engineer	Landscape Architect: #Landscape Architect
Electrical Services: #Electrical Engineer	BCA and Access Consultant: #BCA & Access Consultant	Acoustic Engineer: #Acoustic Engineer

**Jim Aitken**  
Partners

Client: MR David Reeves  
Project: MIXED USE DEVELOPMENT  
Address: 118 - 120 STATION STREET  
PENRITH NSW 2750 Australia

**Prn\_0735**

**Issue For Amended DA**

Drawing Title: <b>FIRST FLOOR - GFA &amp; CROSS VENTILATION</b>	Revision: <b>04</b>
Drawing No: <b>3022</b>	Checked: <b>IS</b>
Date: <b>28/09/2021</b>	A1 Scale: <b>1:100</b>
A3 Scale: <b>50%</b>	

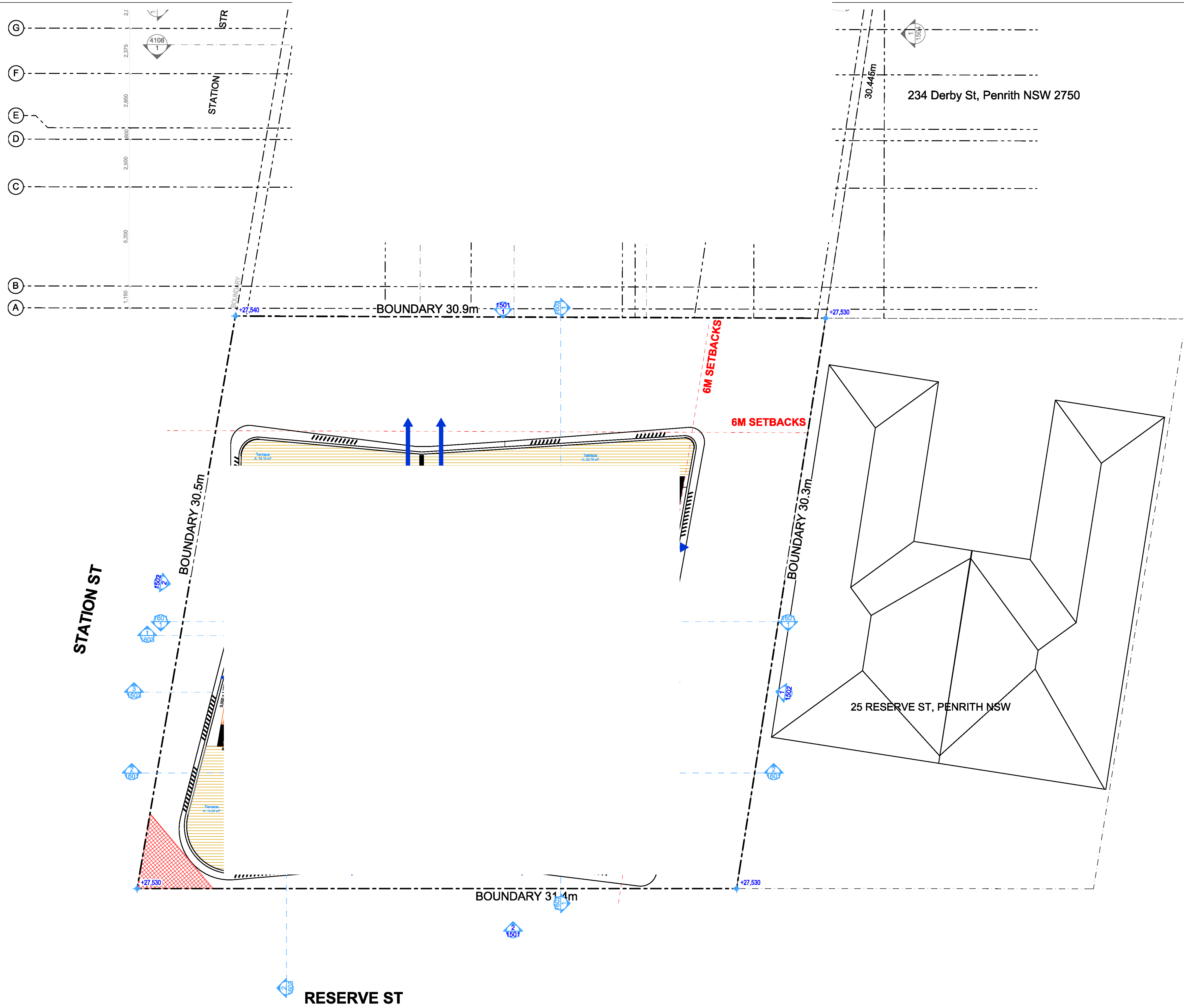
Rev	Date	Amendment	By	Rev	Date	Amendment	By
01	10/09/2020	Issue For Consultation	VA				
02	20/09/2020	Issue For Consultation	VA				
03	20/09/2020	Issue For DA	VA				
04	28/09/2021	Issue For Amended DA	VA				

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ARCHITECTS

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ABN: 90 616 216 196



**LEGEND**

CALCULATED GFA

Natural Ventilation

**Issue For Amended DA**

Rev	Date	Amendment	By	Rev	Date	Amendment	By
01	10/09/2020	Issue For Consultation	VA				
02	24/09/2020	Issue For Consultation	VA				
03	24/09/2020	Issue For DA	VA				
04	28/09/2021	Issue For Amended DA	VA				

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NSW Nominated Architect  
 Pavlo Doroch 9170

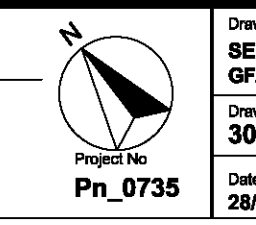
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Hydraulic Services: #Hydraulic Engineer  
 Fire Services: #Fire Engineer  
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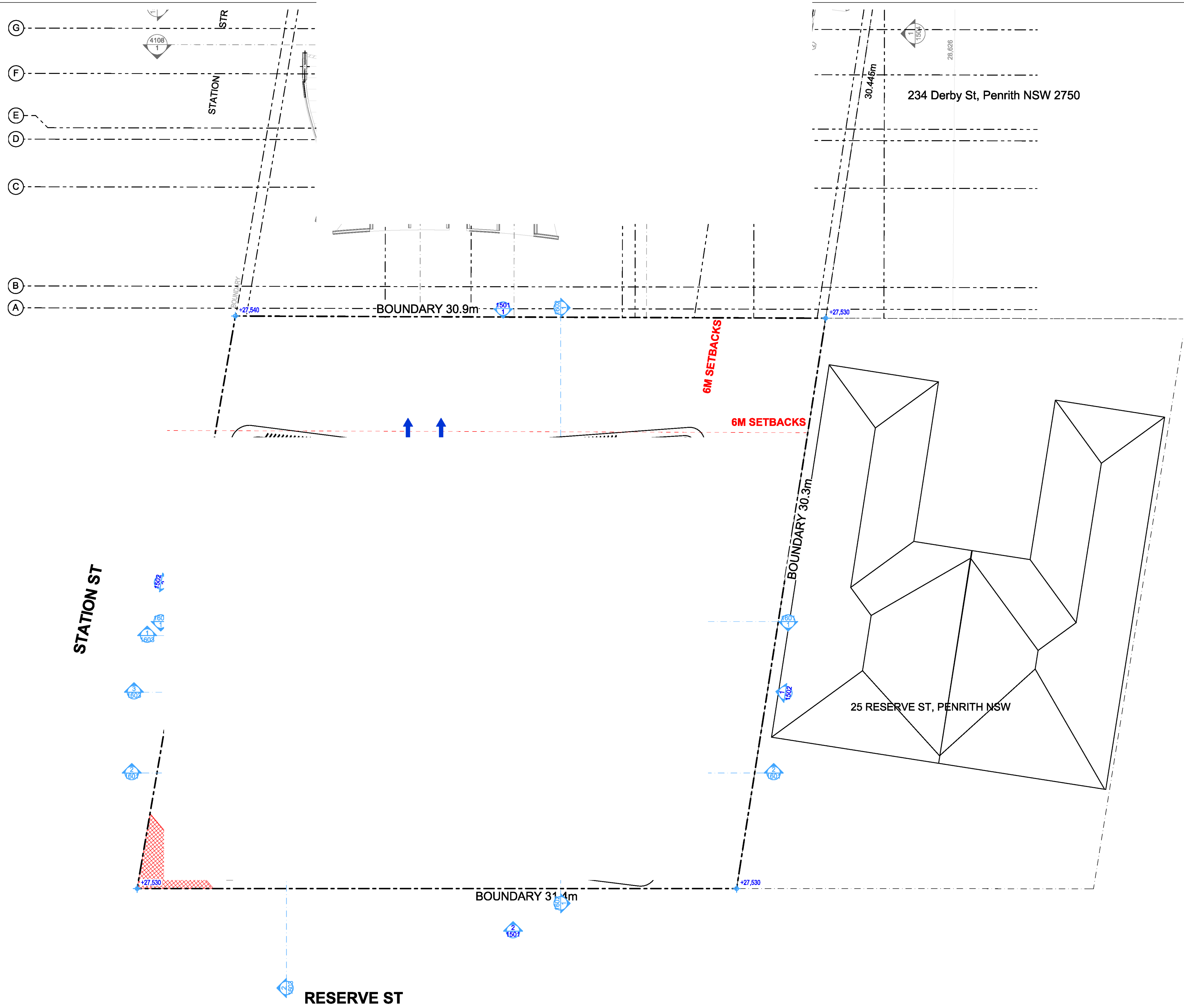
Principal Certifying Authority: #Principal Certifying Authority  
 Landscape Architect: #Landscape Architect  
 Acoustic Engineer: #Acoustic Engineer



Client: MR David Reeves  
 Project: MIXED USE DEVELOPMENT  
 Address: 118 - 120 STATION STREET PENRITH NSW 2750 Australia



Project No	Date	A1 Scale	A3 Scale	Checked
3023	28/09/2021	1:100	50%	IS



**LEGEND**

CALCULATED GFA

Natural Ventilation

STATION ST

RESERVE ST

234 Derby St, Penrith NSW 2750

25 RESERVE ST, PENRITH NSW

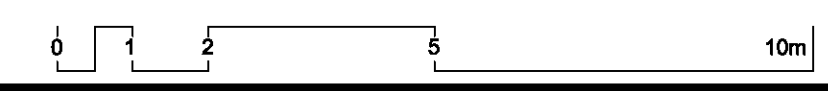
BOUNDARY 30.9m

BOUNDARY 30.3m

BOUNDARY 31.4m

6M SETBACKS

6M SETBACKS



**Issue For Amended DA**

Rev	Date	Amendment	By	Rev	Date	Amendment	By
01	10/09/2020	Issue For Consultation	VA				
02	20/09/2020	Issue For Consultation	VA				
03	20/09/2020	Issue For DA	VA				
04	28/09/2021	Issue For Amended DA	VA				

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NSW Nominated Architect  
 Pavlo Doroch 9170

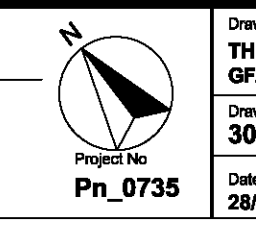
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 Mechanical Services: #Mechanical Engineer  
 Electrical Services: #Electrical Engineer

Hydraulic Services: #Hydraulic Engineer  
 Fire Services: #Fire Engineer  
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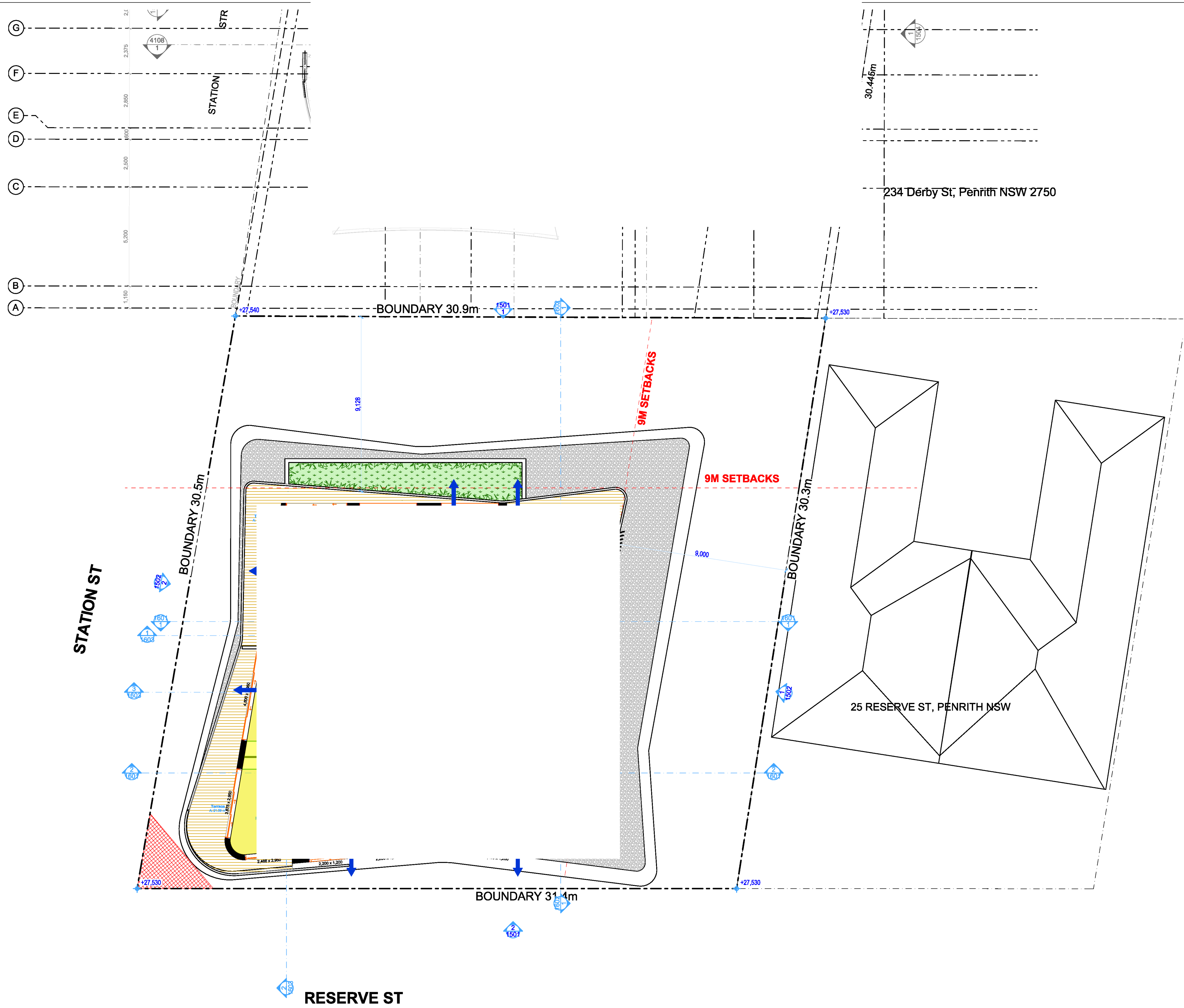
Principal Certifying Authority: #Principal Certifying Authority  
 Landscape Architect: #Landscape Architect  
 Acoustic Engineer: #Acoustic Engineer



Client: MR David Reeves  
 Project: MIXED USE DEVELOPMENT  
 Address: 118 - 120 STATION STREET PENRITH NSW 2750 Australia



Drawing Title		Revision	
THIRD FLOOR - GFA & CROSS VENTILATION		04	
Drawing No	3024	Date	28/09/2021
Project No	Pr_0735	A1 Scale	1:100
		A3 Scale	50%
Checked	IS		



**LEGEND**

CALCULATED GFA

Natural Ventilation

**Issue For Amended DA**

Rev	Date	Amendment	By	Rev	Date	Amendment	By
01	10/09/2020	Issue For Consultation	VA				
02	24/09/2020	Issue For Consultation	VA				
03	24/09/2020	Issue For DA	VA				
04	28/09/2021	Issue For Amended DA	VA				

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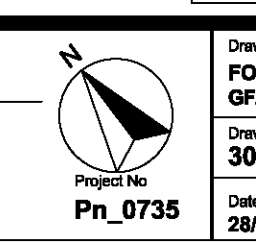
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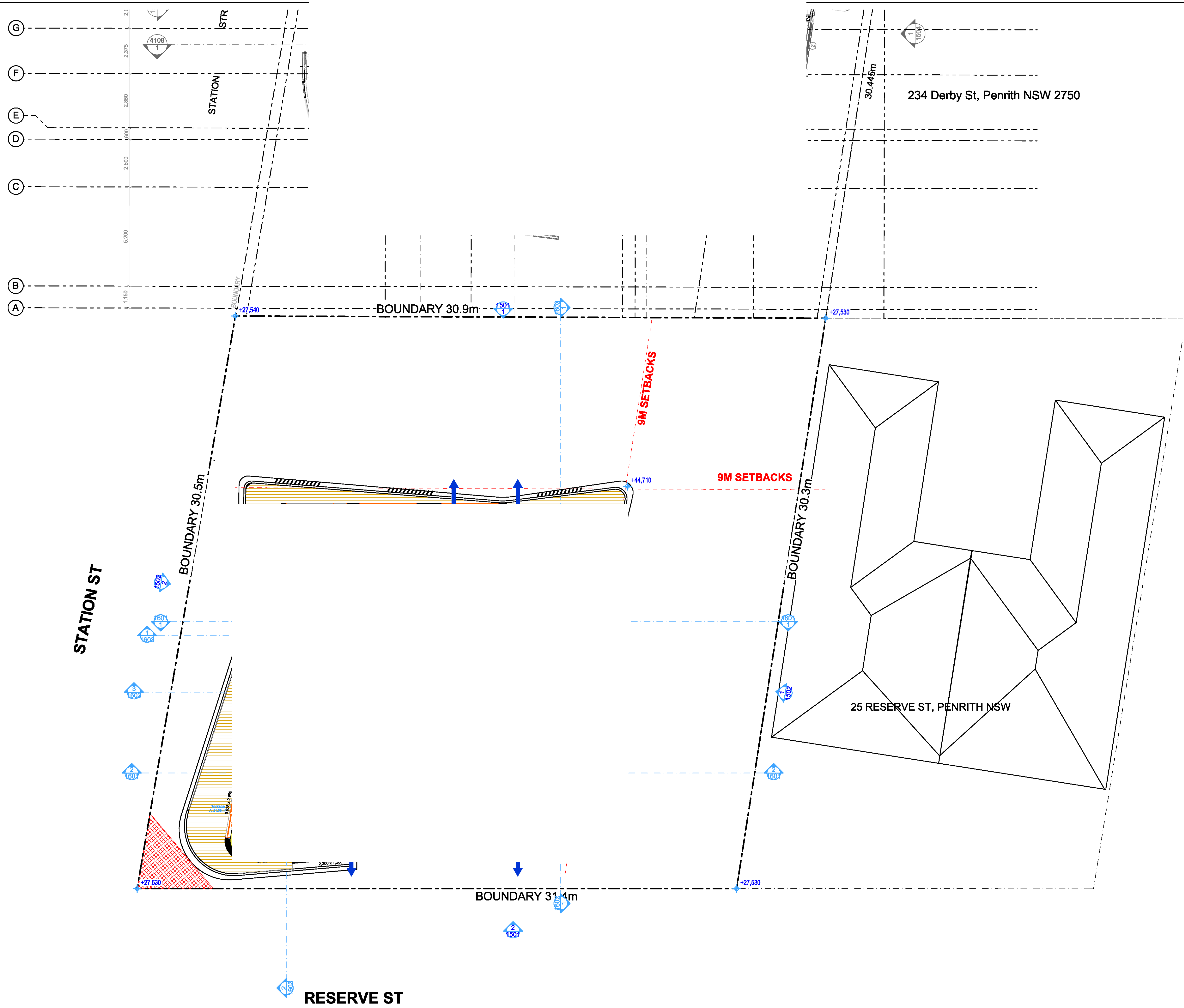
Structural Engineer: #Structural Engineer	Hydraulic Services: #Hydraulic Engineer	Principal Certifying Authority: #Principal Certifying Authority
Mechanical Services: #Mechanical Engineer	Fire Services: #Fire Engineer	Landscape Architect: #Landscape Architect
Electrical Services: #Electrical Engineer	BCA and Access Consultant: #BCA & Access Consultant	Acoustic Engineer: #Acoustic Engineer



Client: MR David Reeves  
 Project: MIXED USE DEVELOPMENT  
 Address: 118 - 120 STATION STREET  
 PENRITH NSW 2750 Australia



Revision	Date	A1 Scale	A3 Scale	Checked
04	28/09/2021	1:100	50%	IS



**LEGEND**

CALCULATED GFA

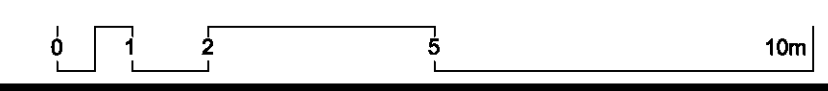
Natural Ventilation

**STATION ST**

**RESERVE ST**

234 Derby St, Penrith NSW 2750

25 RESERVE ST, PENRITH NSW



**Issue For Amended DA**

Rev	Date	Amendment	By	Rev	Date	Amendment	By
01	10/09/2020	Issue For Consultation	VA				
02	20/09/2020	Issue For Consultation	VA				
03	20/09/2020	Issue For DA	VA				
04	28/09/2021	Issue For Amended DA	VA				

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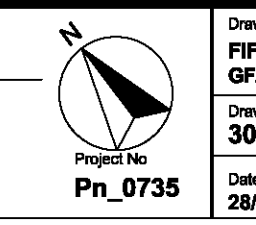
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 Pavlo Doroch 9170

Structural Engineer: #Structural Engineer	Hydraulic Services: #Hydraulic Engineer	Principal Certifying Authority: #Principal Certifying Authority
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Client: MR David Reeves  
 Project: MIXED USE DEVELOPMENT  
 Address: 118 - 120 STATION STREET  
 PENRITH NSW 2750 Australia



Drawing Title	Drawing No	Revision
FIFTH FLOOR - GFA GFA & CROSS VENTILATION	3026	04

Date: 28/09/2021 | A1 Scale: 1:100 | A3 Scale: 50% | Checked: IS



**LEGEND**

CALCULATED GFA

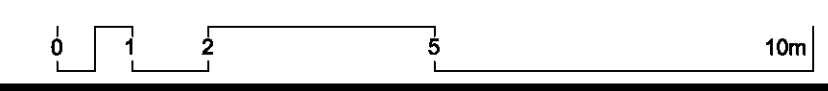
Natural Ventilation

STATION ST

RESERVE ST

234 Derby St, Penrith NSW 2750

25 RESERVE ST, PENRITH NSW



**Issue For Amended DA**

Rev	Date	Amendment	By	Rev	Date	Amendment	By
01	10/09/2020	Issue For Consultation	VA				
02	24/09/2020	Issue For Consultation	VA				
03	24/09/2020	Issue For DA	VA				
04	28/09/2021	Issue For Amended DA	VA				

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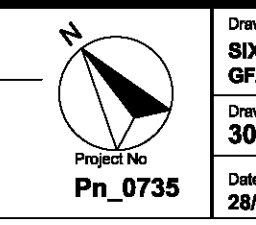
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Principal Certifying Authority: #Principal Certifying Authority  
 Landscape Architect: #Landscape Architect  
 Acoustic Engineer: #Acoustic Engineer



Client: MR David Reeves  
 Project: MIXED USE DEVELOPMENT  
 Address: 118 - 120 STATION STREET PENRITH NSW 2750 Australia



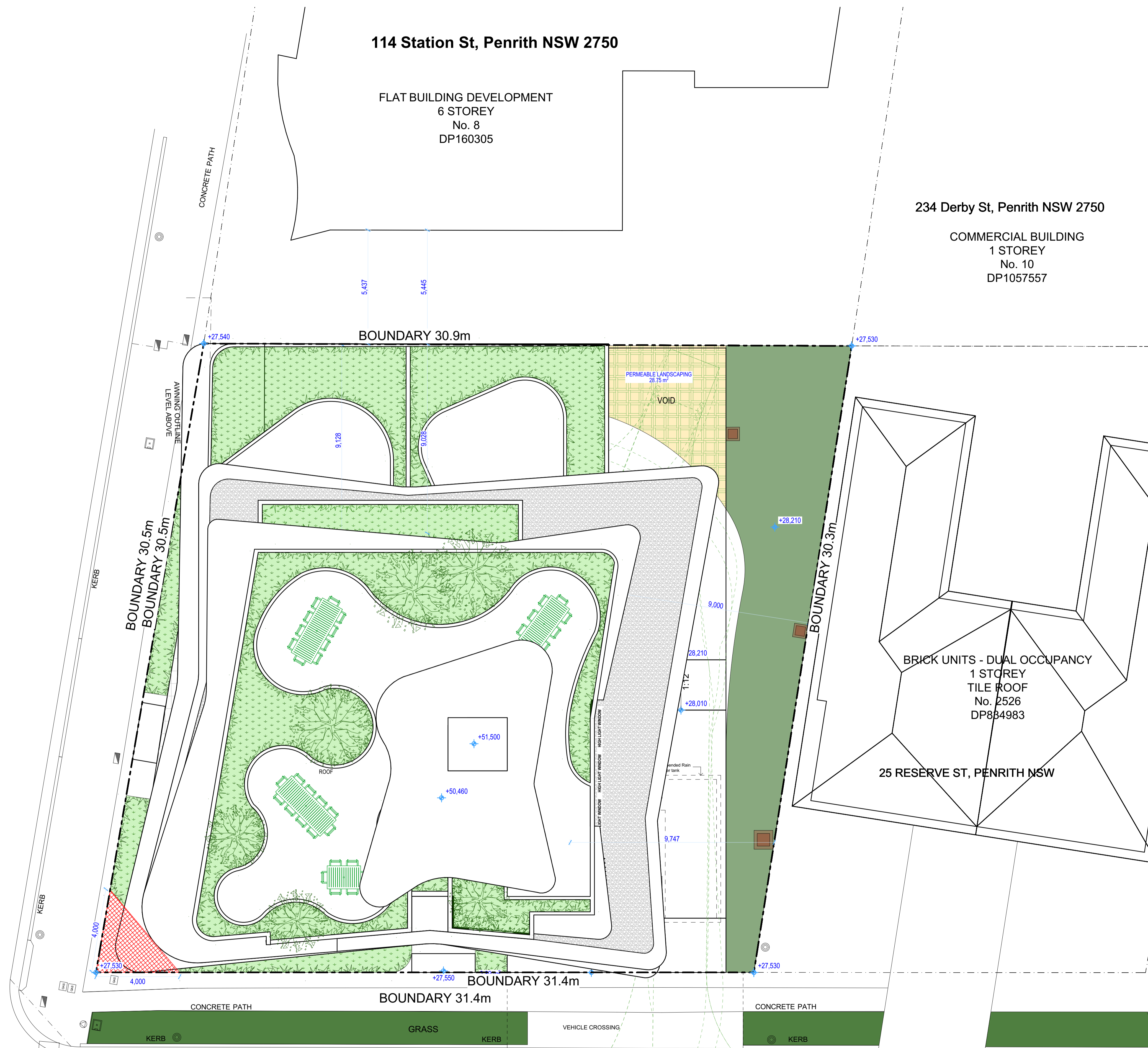
Project No	Date	A1 Scale	A3 Scale	Checked
3027	28/09/2021	1:100	50%	IS

114 Station St, Penrith NSW 2750

FLAT BUILDING DEVELOPMENT  
6 STOREY  
No. 8  
DP160305

234 Derby St, Penrith NSW 2750

COMMERCIAL BUILDING  
1 STOREY  
No. 10  
DP1057557



RESERVE ST

BRICK UNITS - DUAL OCCUPANCY  
1 STOREY  
TILE ROOF  
No. 2526  
DP884983

25 RESERVE ST, PENRITH NSW

Issue For Amended DA

Rev	Date	Amendment	By	Rev	Date	Amendment	By
01	21/08/2020	Issue For Consultation					
02	24/08/2020	Issue For Consultation					
03	24/08/2020	Issue For DA					
04	28/09/2021	Issue For Amended DA					

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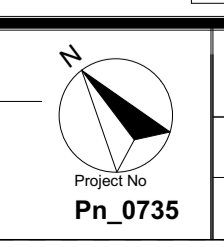
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 ABN: 90 616 216 196

NSW Nominated Architect  
 Pavlo Doroch 9170

Structural Engineer: #Structural Engineer  
 Mechanical Services: #Mechanical Engineer  
 Electrical Services: #Electrical Engineer  
 Hydraulic Services: #Hydraulic Engineer  
 Fire Services: #Fire Engineer  
 BCA and Access Consultant: #BCA & Access Consultant  
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 Acoustic Engineer: #Acoustic Engineer



Client: MR David Reeves  
 Project: MIXED USE DEVELOPMENT  
 Address: 118 - 120 STATION STREET  
 PENRITH NSW 2750 Australia



Project No	Revision
3041	04

Date: 28/09/2021  
 A1 Scale: 1:100  
 A3 Scale: 50%  
 A4 Scale: 35%  
 Checked



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East Elevation  
1:200



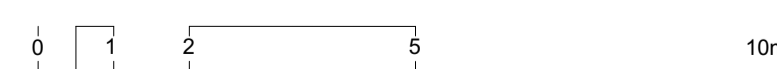
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West Elevation  
1:200



3  
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North Elevation  
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4  
-  
South Elevation  
1:200



**Issue For Amended DA**

Rev	Date	Amendment	By	Rev	Date	Amendment	By
01	21/08/2020	Issue For Consultation					
02	24/08/2020	Issue For Consultation					
03	24/08/2020	Issue For DA					
04	28/09/2021	Issue For Amended DA					

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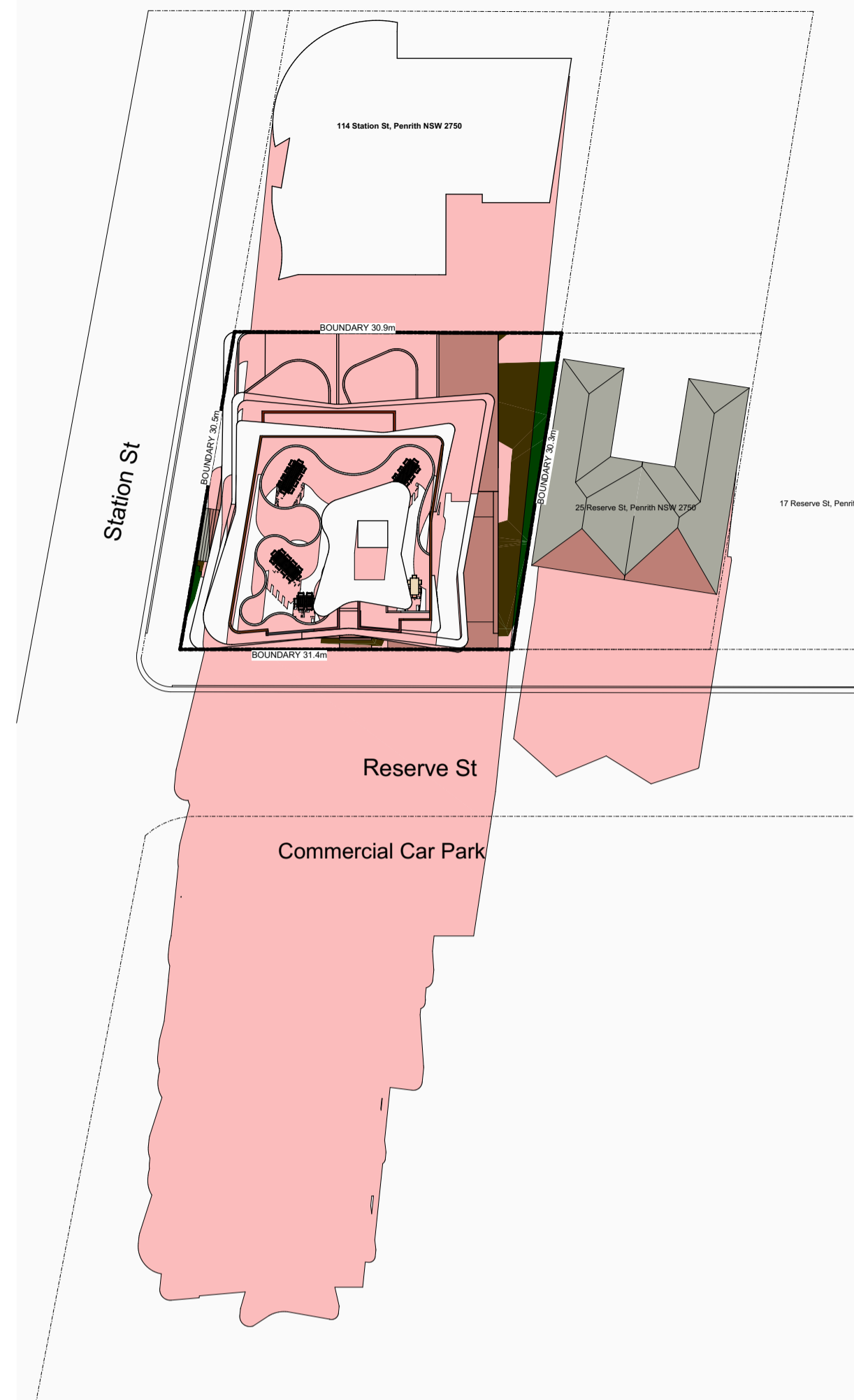
NSW Nominated Architect  
 Pavlo Doroch 9170

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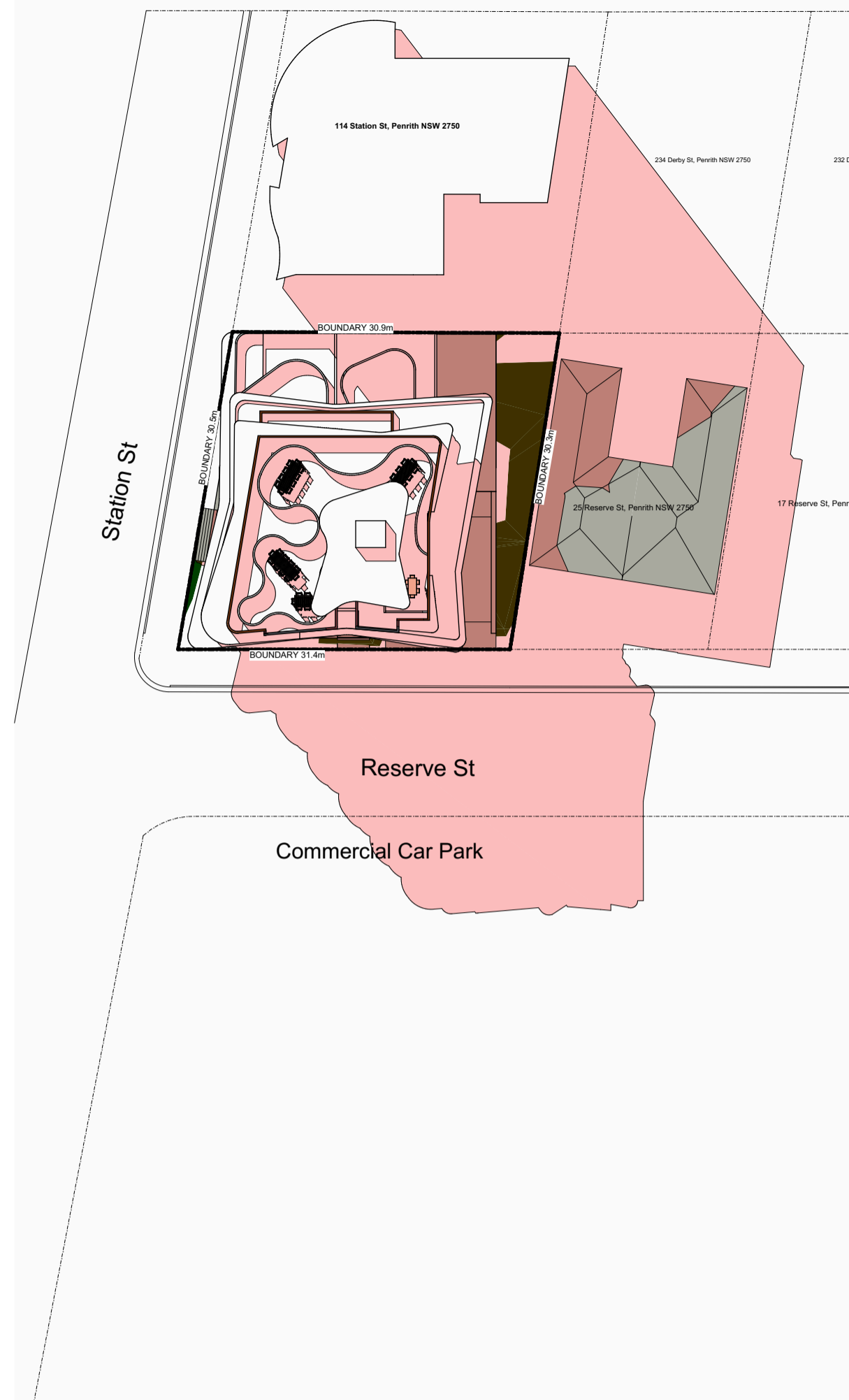


Client: **MR David Reeves**  
 Project: **MIXED USE DEVELOPMENT**  
 Address: **118 - 120 STATION STREET PENRITH NSW 2750 Australia**  
 Project No: **Pn\_0735**

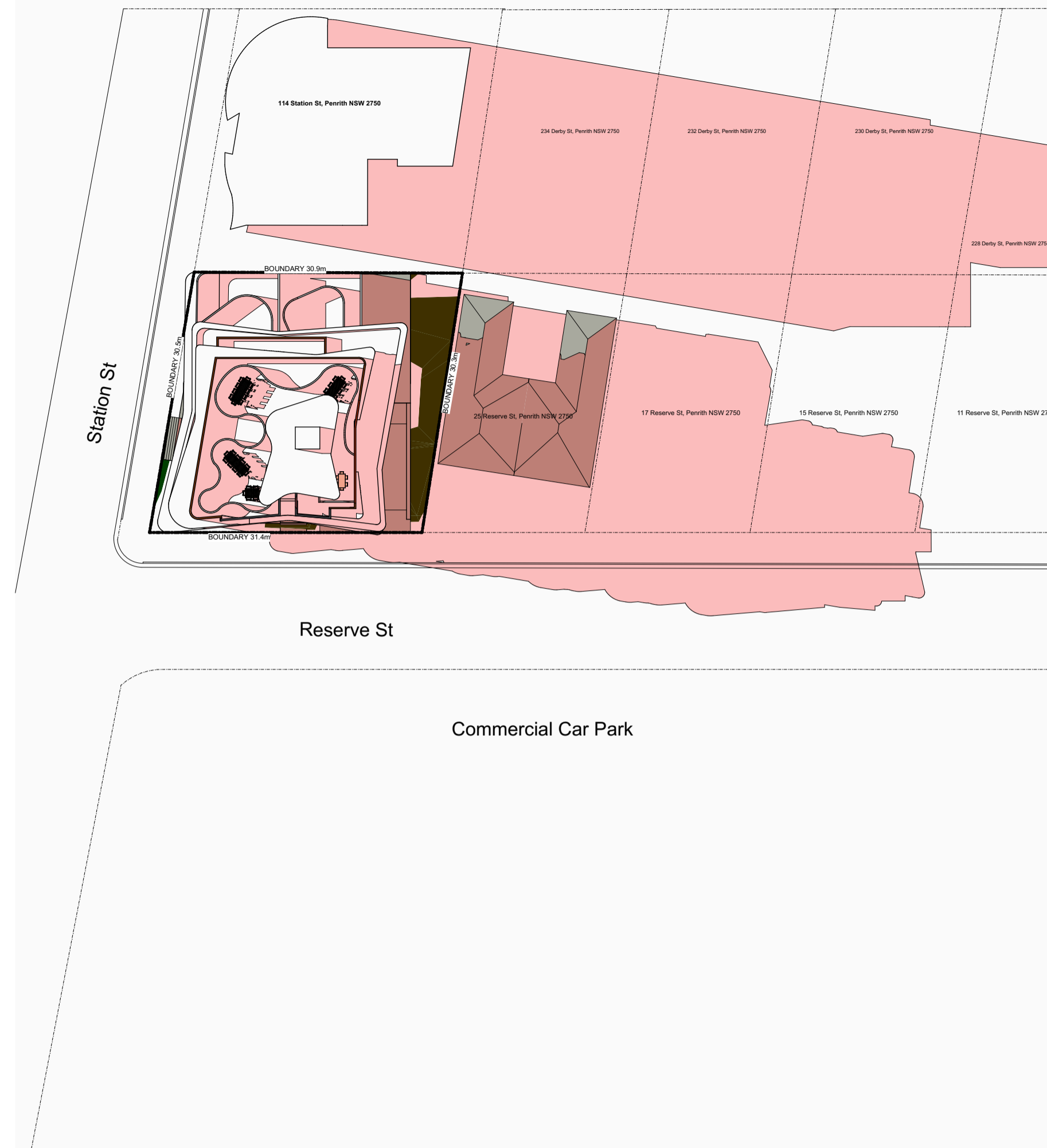
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NOTIFICATION PLANS 2/2		04	
Drawing No 3042		04	
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Checked			



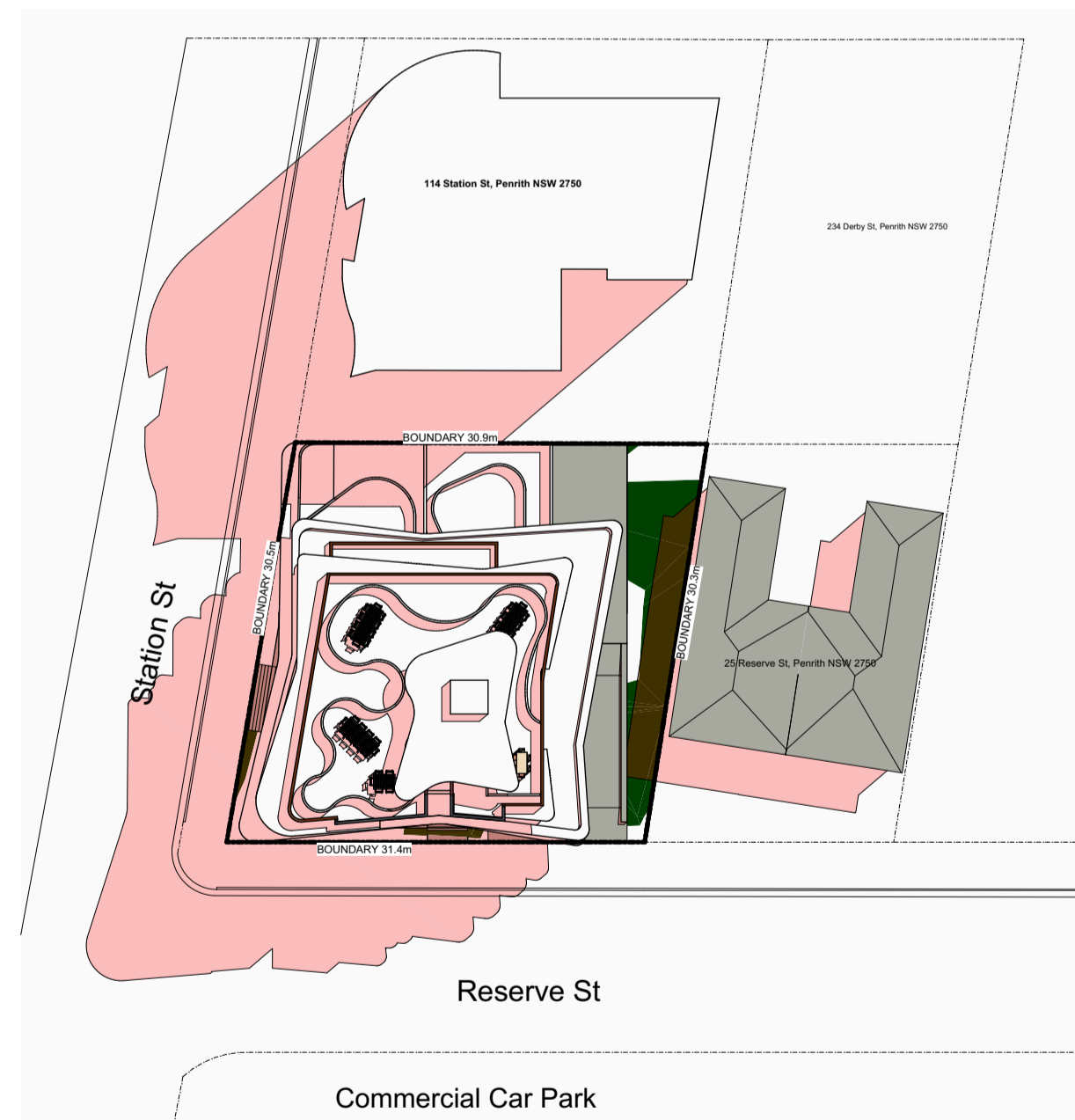
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1:500



02 - Shadows - June 21 - 12PM  
1:500



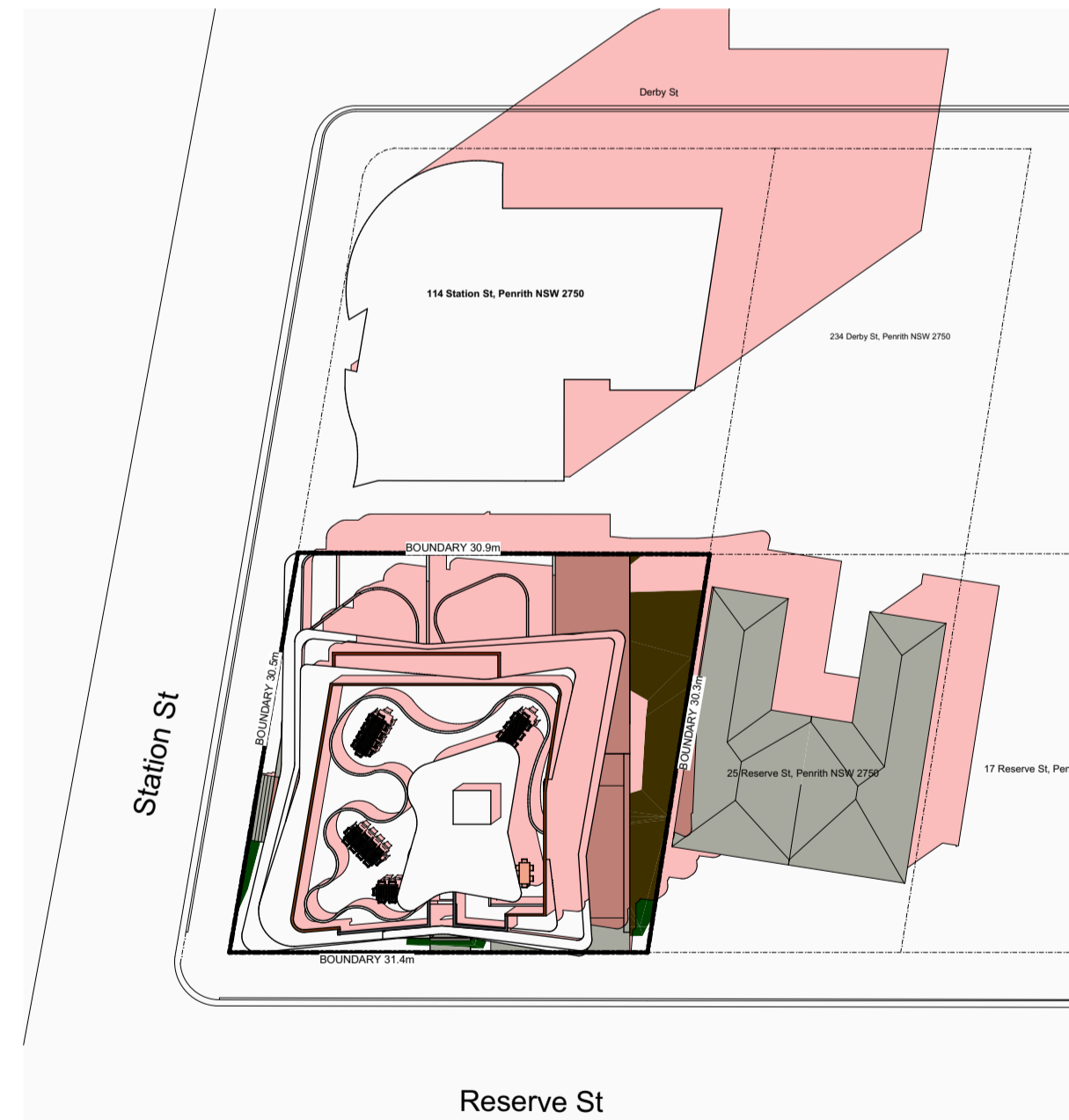
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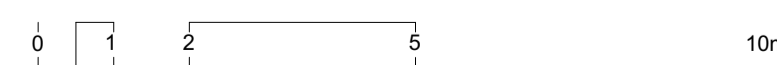
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05 - Shadows - DEC 21 - 12PM  
1:500



06 - Shadows - DEC 21 - 3PM  
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Pavlo Doroch 9170

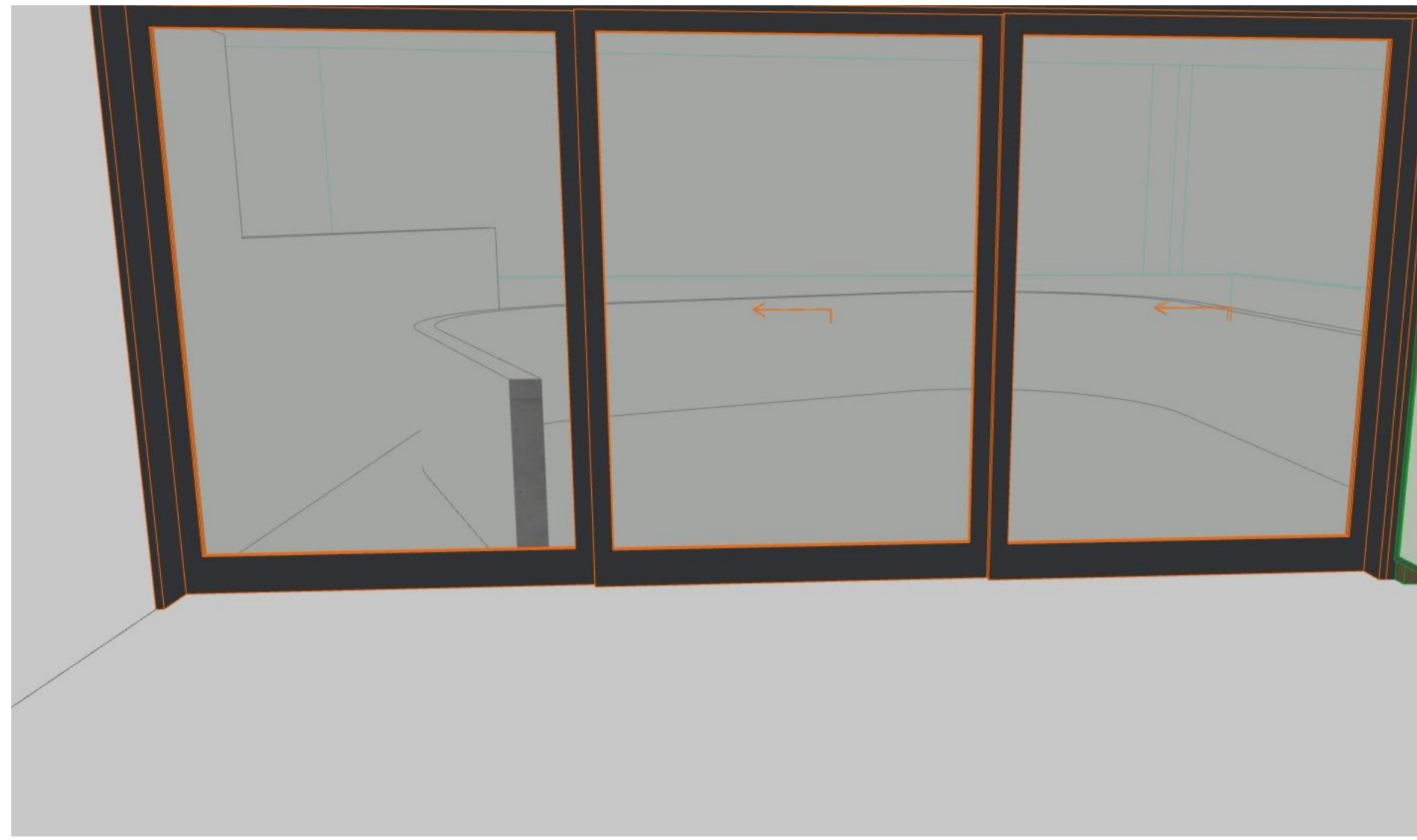
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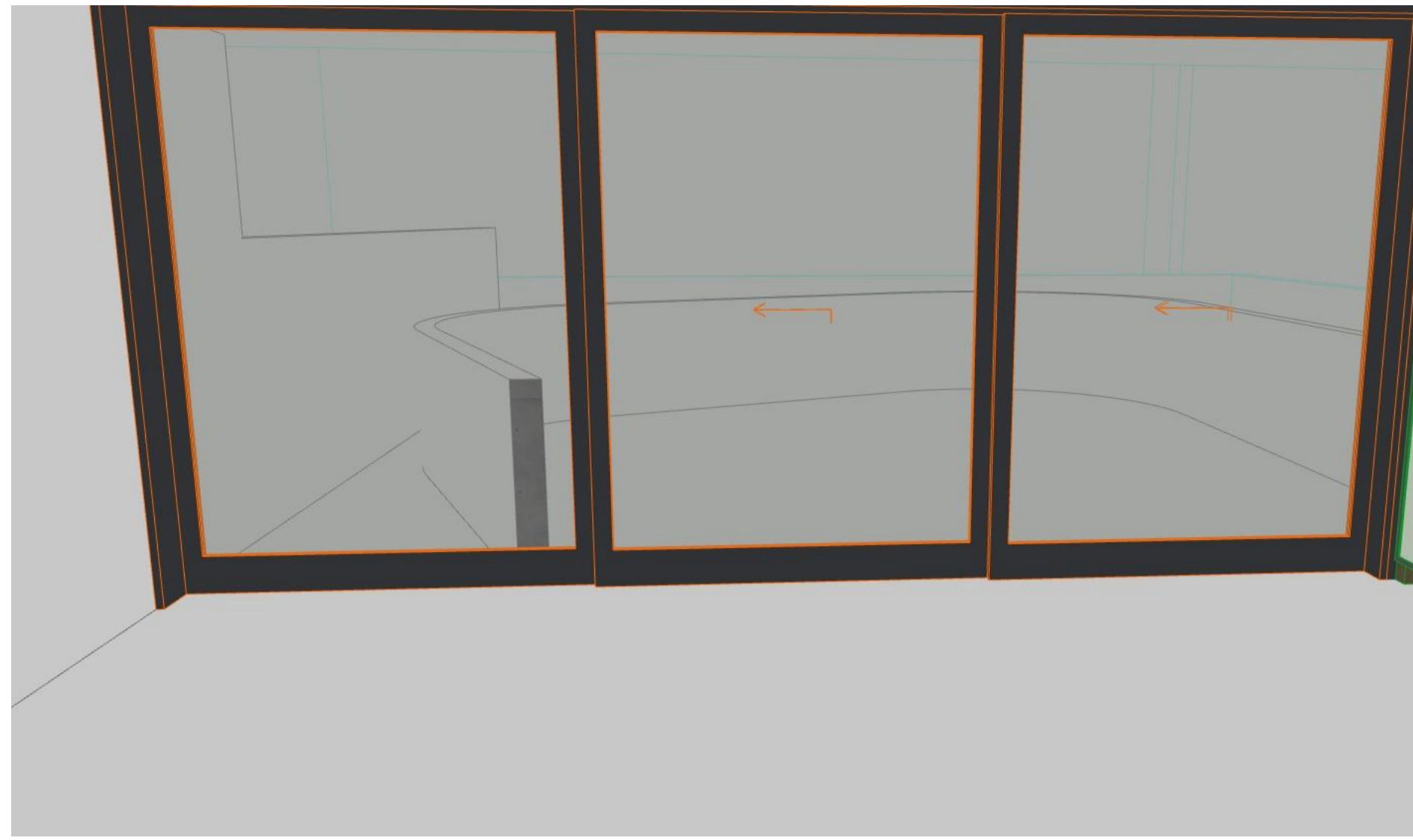
Client: MR David Reeves  
Project: MIXED USE DEVELOPMENT  
Address: 118 - 120 STATION STREET PENRITH NSW 2750 Australia  
Project No: Prn\_0735

Drawing Title: SHADOW DIAGRAMS PLAN VIEW SOLAR STUDIES	Revision: 04
Drawing No: 8001	Checked: IS
Date: 28/09/2021	A1 Scale: 1:500
	A3 Scale: 50%

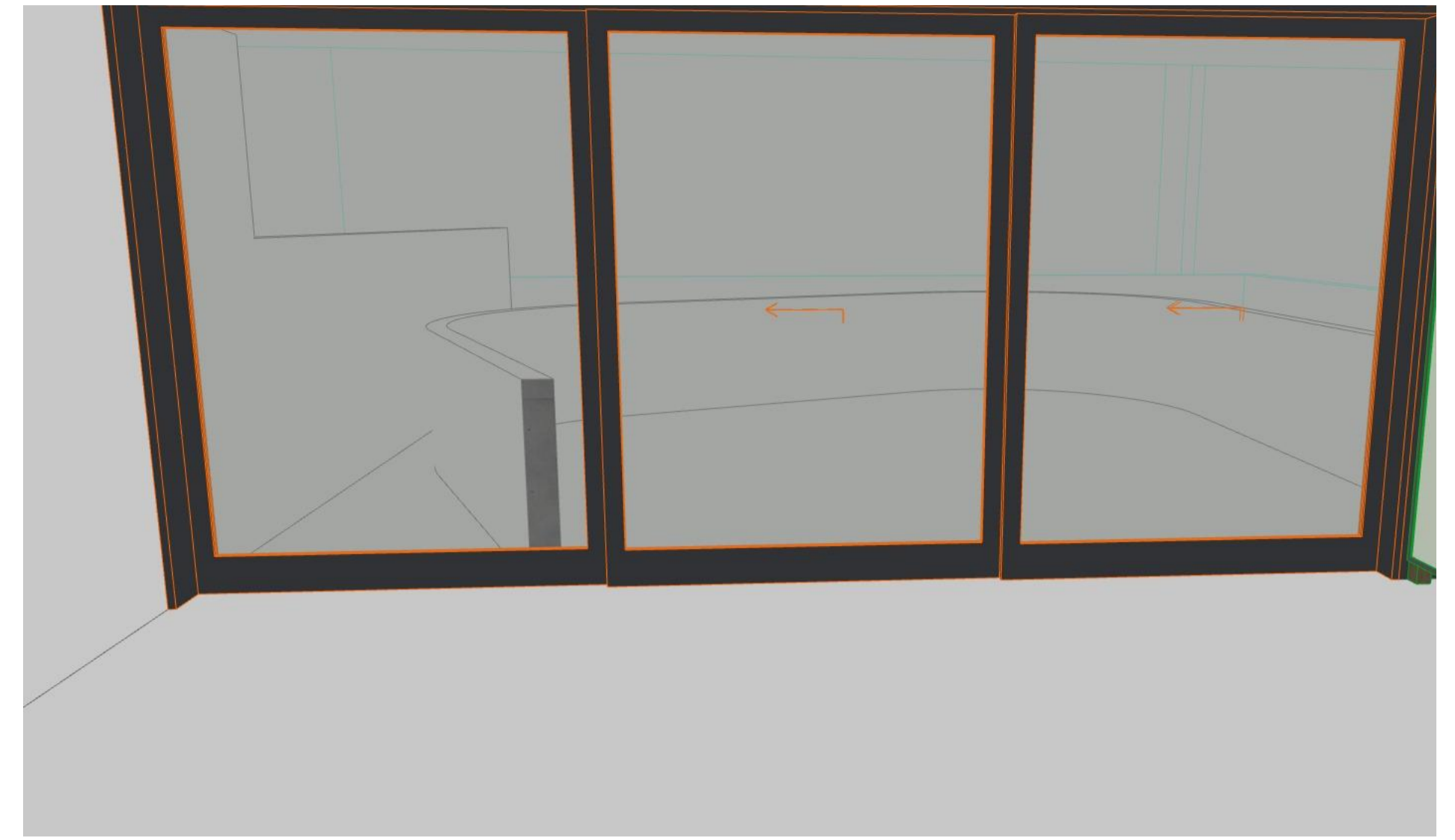
Issue For Amended DA



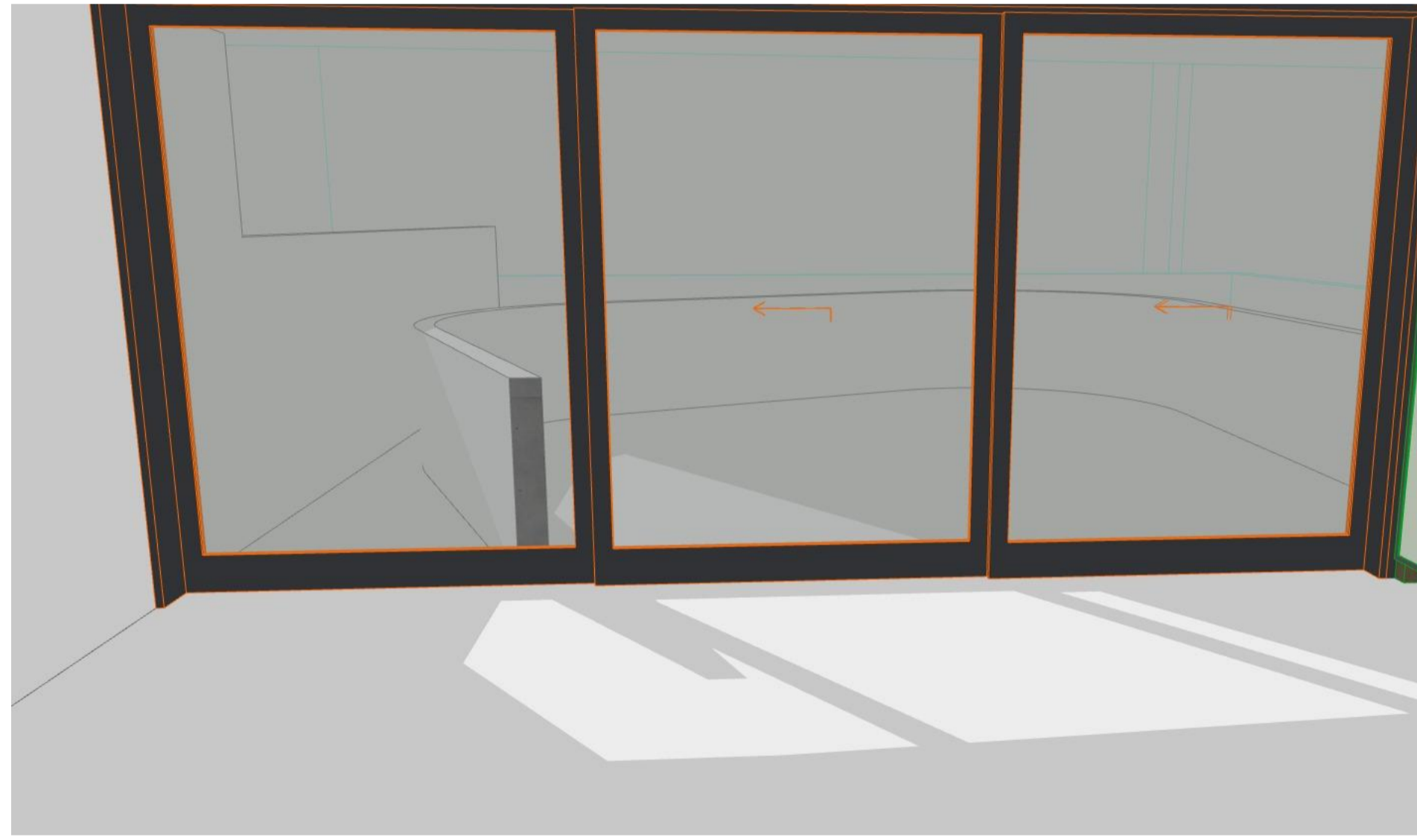
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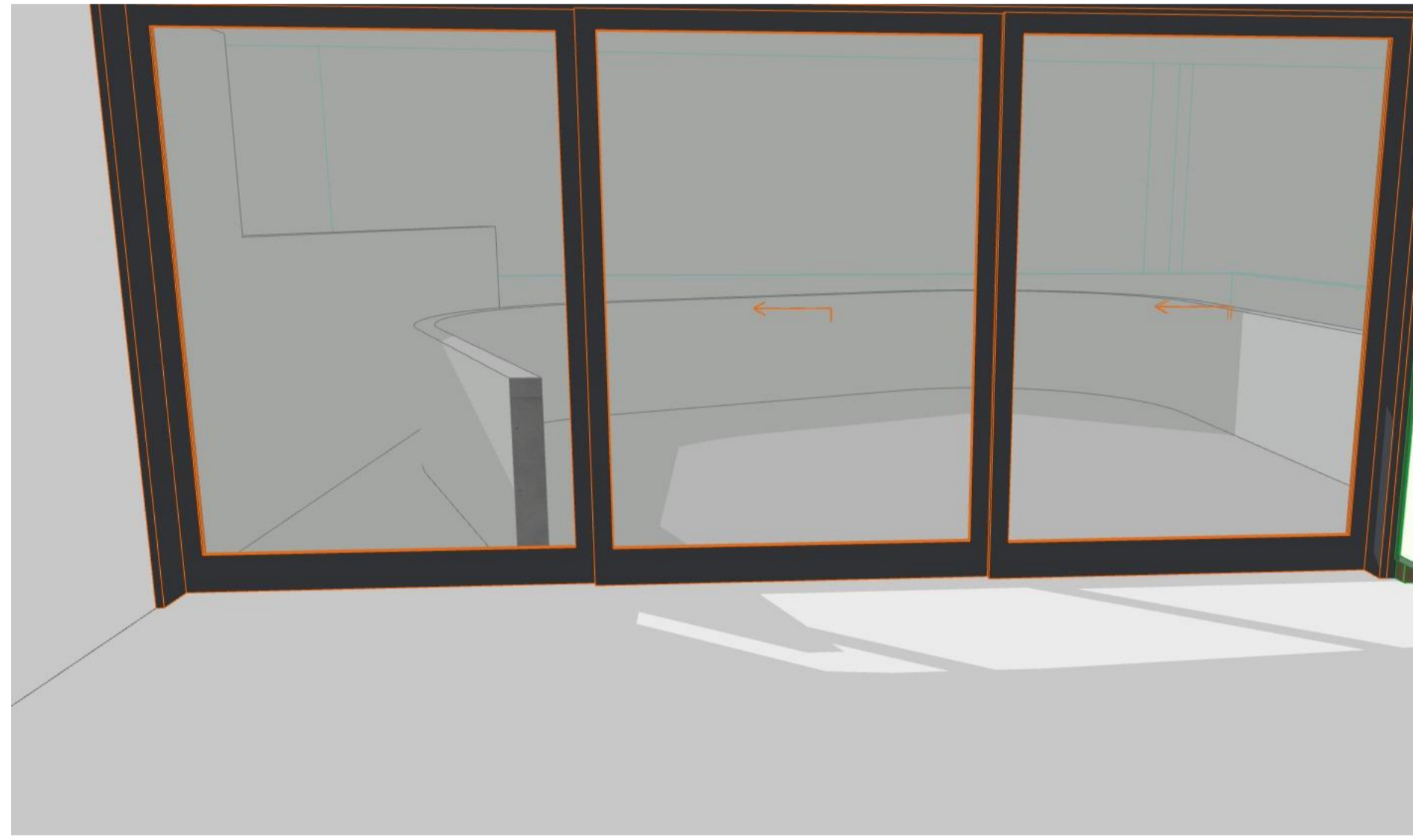
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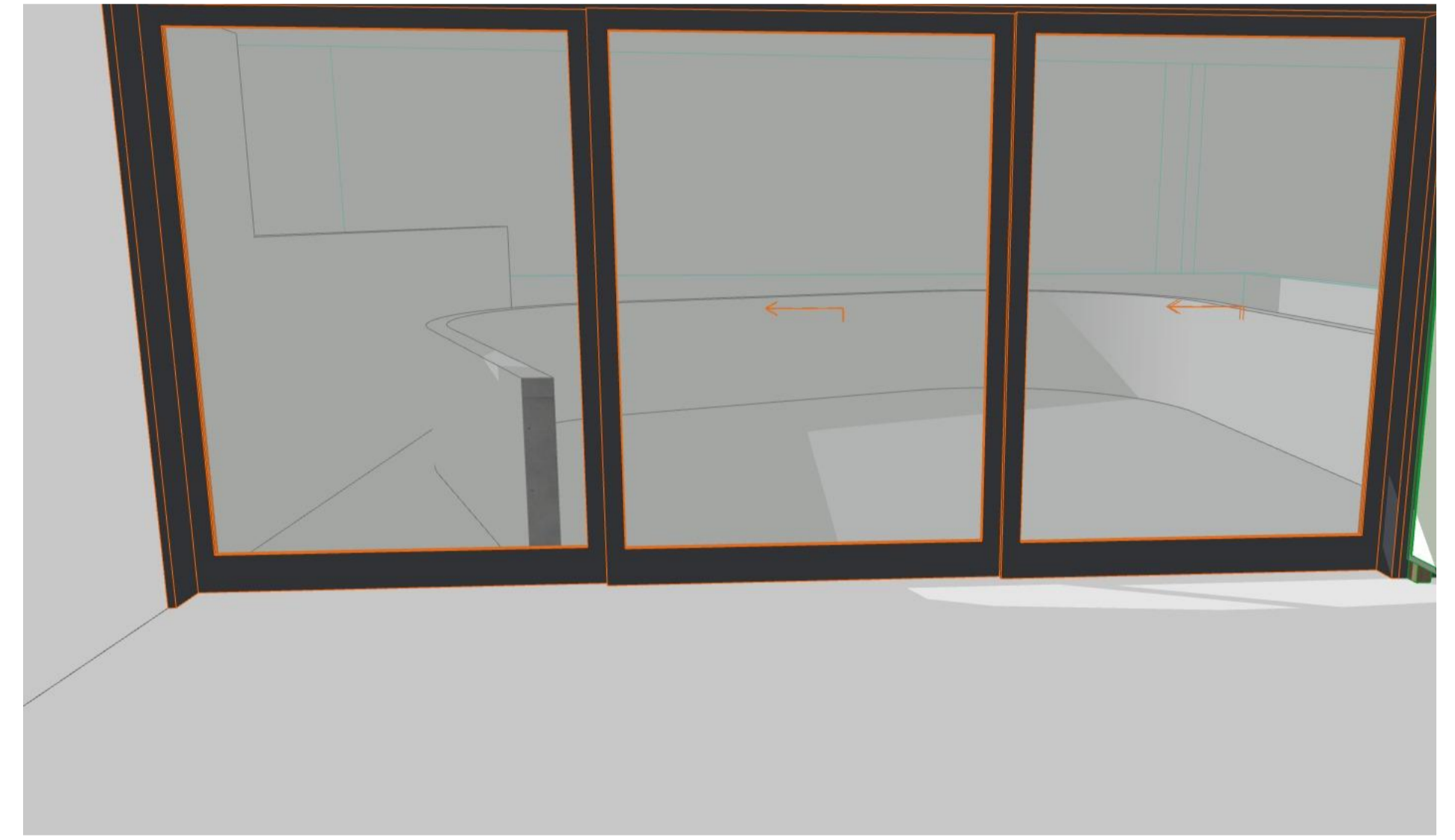
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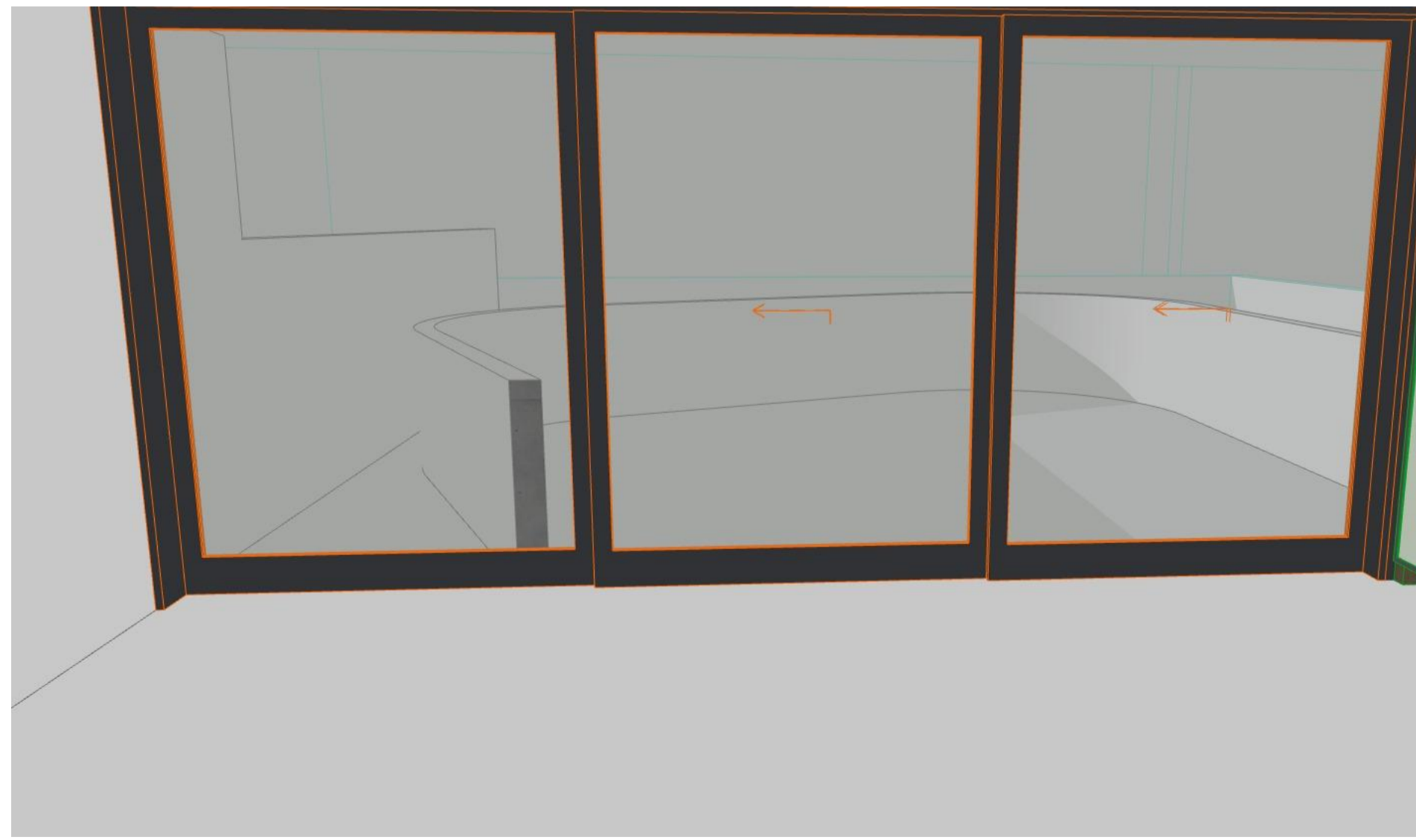
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1:200



6 U01-02 2PM June 21st  
1:200



7 U01-02 3PM June 21st  
1:200



**Issue For Amended DA**

Rev	Date	Amendment	By	Rev	Date	Amendment	By

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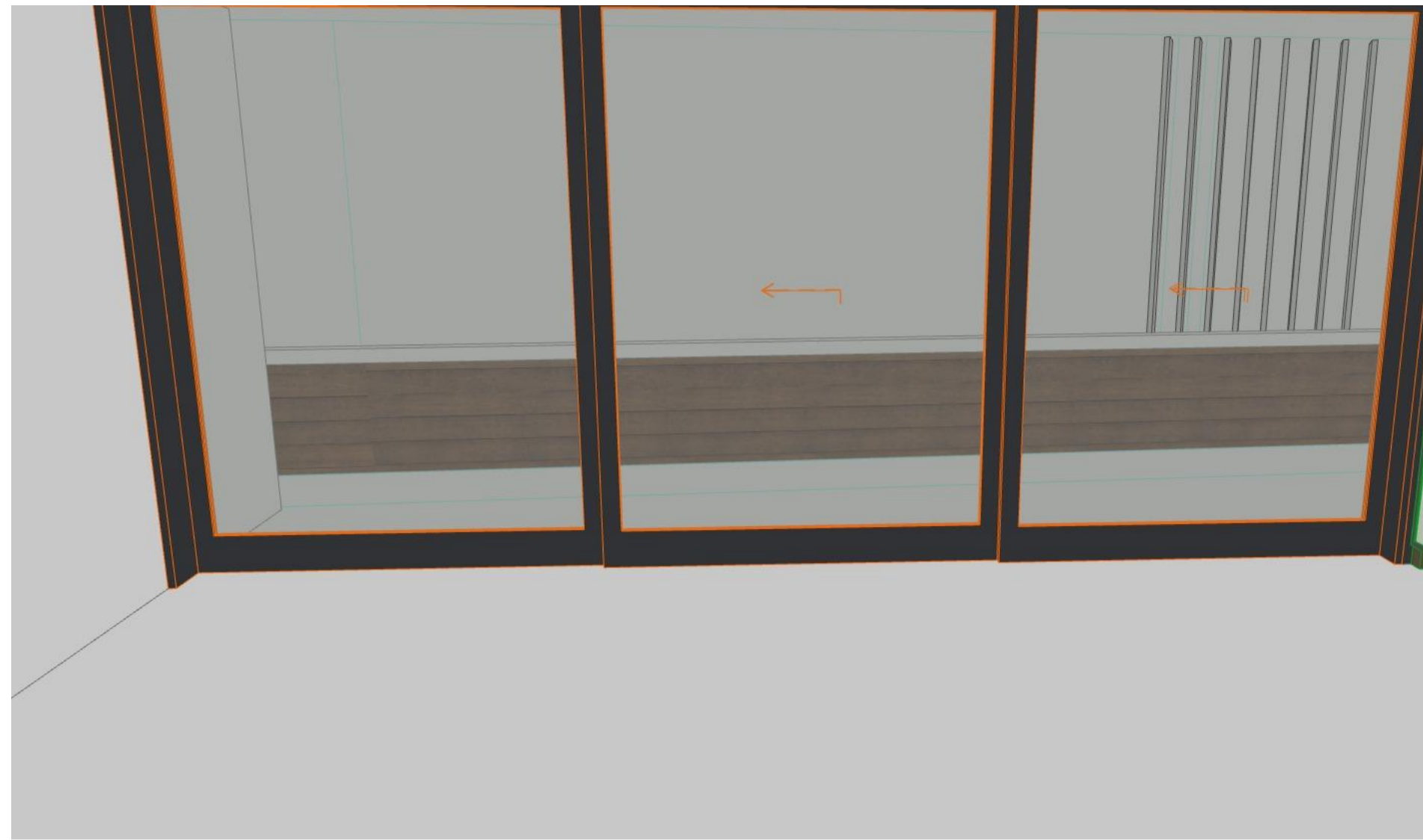
Principal Certifying Authority: #Principal Certifying Authority  
 Landscape Architect: #Landscape Architect  
 Acoustic Engineer: #Acoustic Engineer



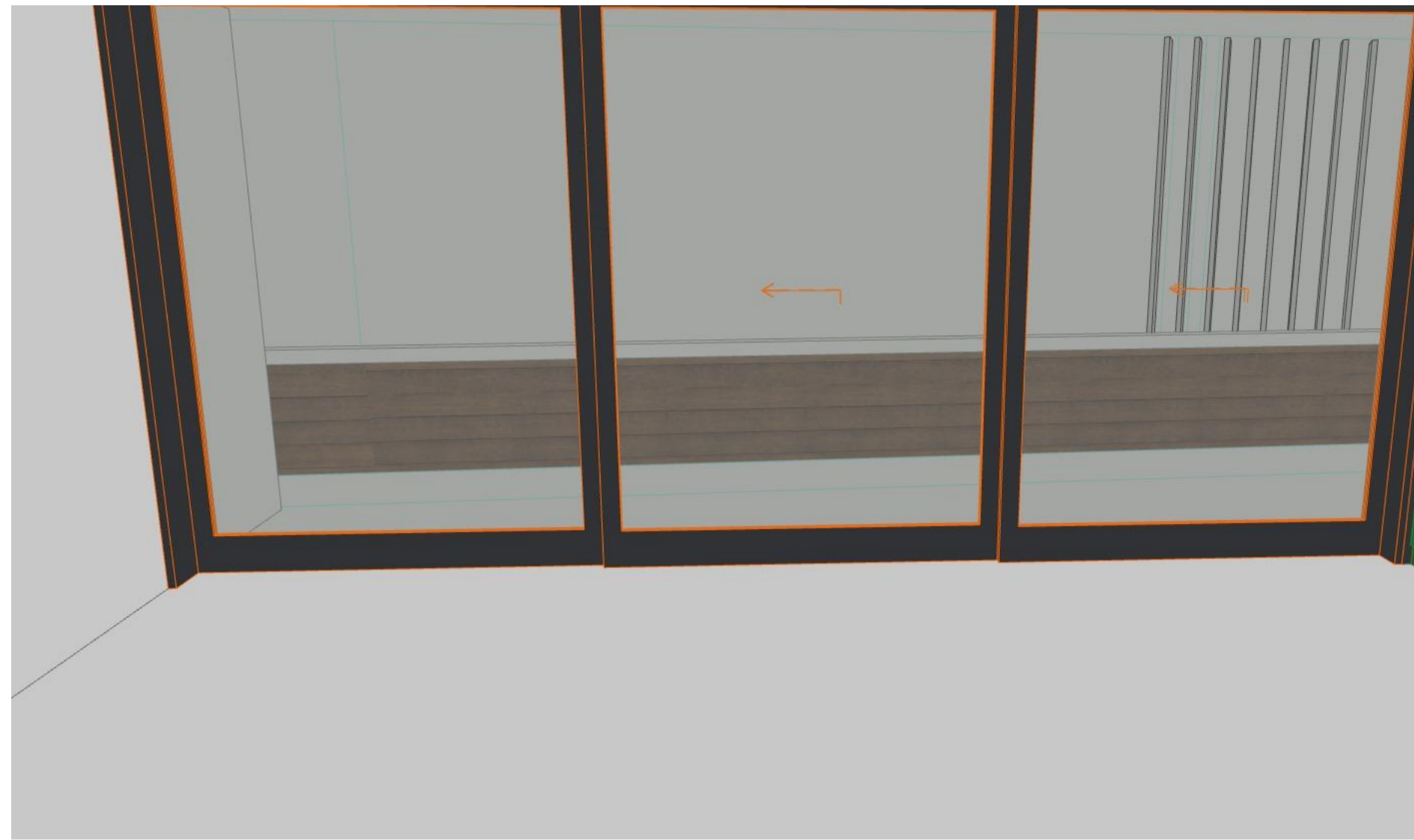
Client: **MR David Reeves**  
 Project: **MIXED USE DEVELOPMENT**  
 Address: **118 - 120 STATION STREET PENRITH NSW 2750 Australia**

Drawing Title: **LIVING ROOM U01-02 SHADOW DIAGRAMS PLAN VIEW SOLAR STUDIES**  
 Drawing No: **8002**  
 Revision: **01**

Date: **28/09/2021**  
 A1 Scale: **50%**  
 A3 Scale: **50%**  
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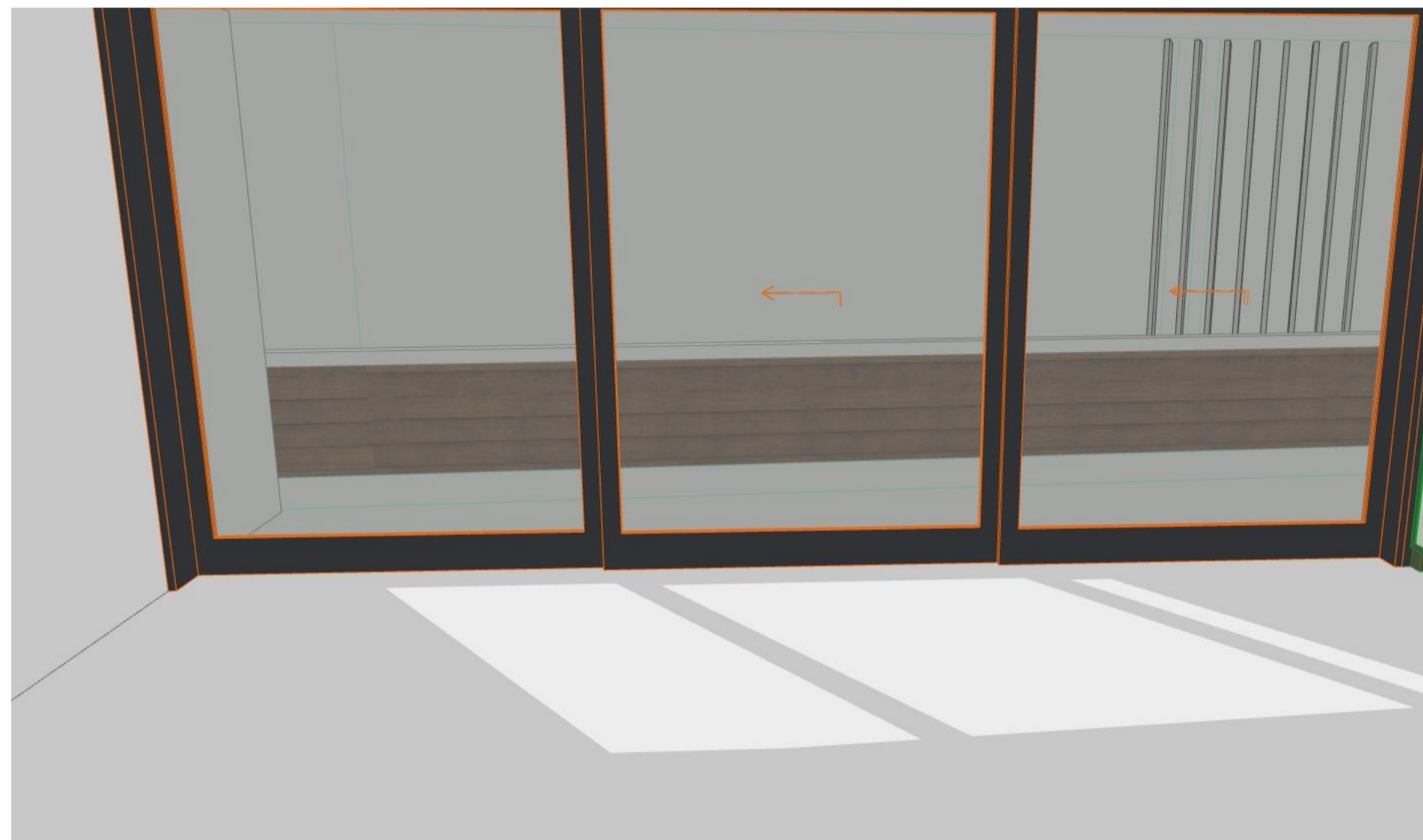
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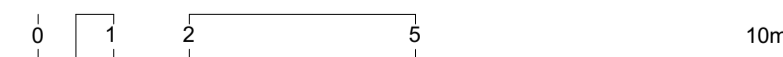
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**Issue For Amended DA**

Rev	Date	Amendment	By	Rev	Date	Amendment	By

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Client: **MR David Reeves**  
 Project: **MIXED USE DEVELOPMENT**  
 Address: **118 - 120 STATION STREET PENRITH NSW 2750 Australia**

Drawing Title: **LIVING ROOM U02-02 SHADOW DIAGRAMS**  
 Drawing No: **8003**  
 Revision: **01**

Date: **28/09/2021**  
 A1 Scale: **50%**  
 A3 Scale: **50%**  
 Checked: **IS**



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3 U03-02 11AM June 21st  
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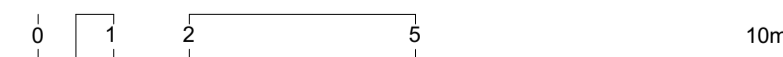
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**Issue For Amended DA**

Rev	Date	Amendment	By	Rev	Date	Amendment	By

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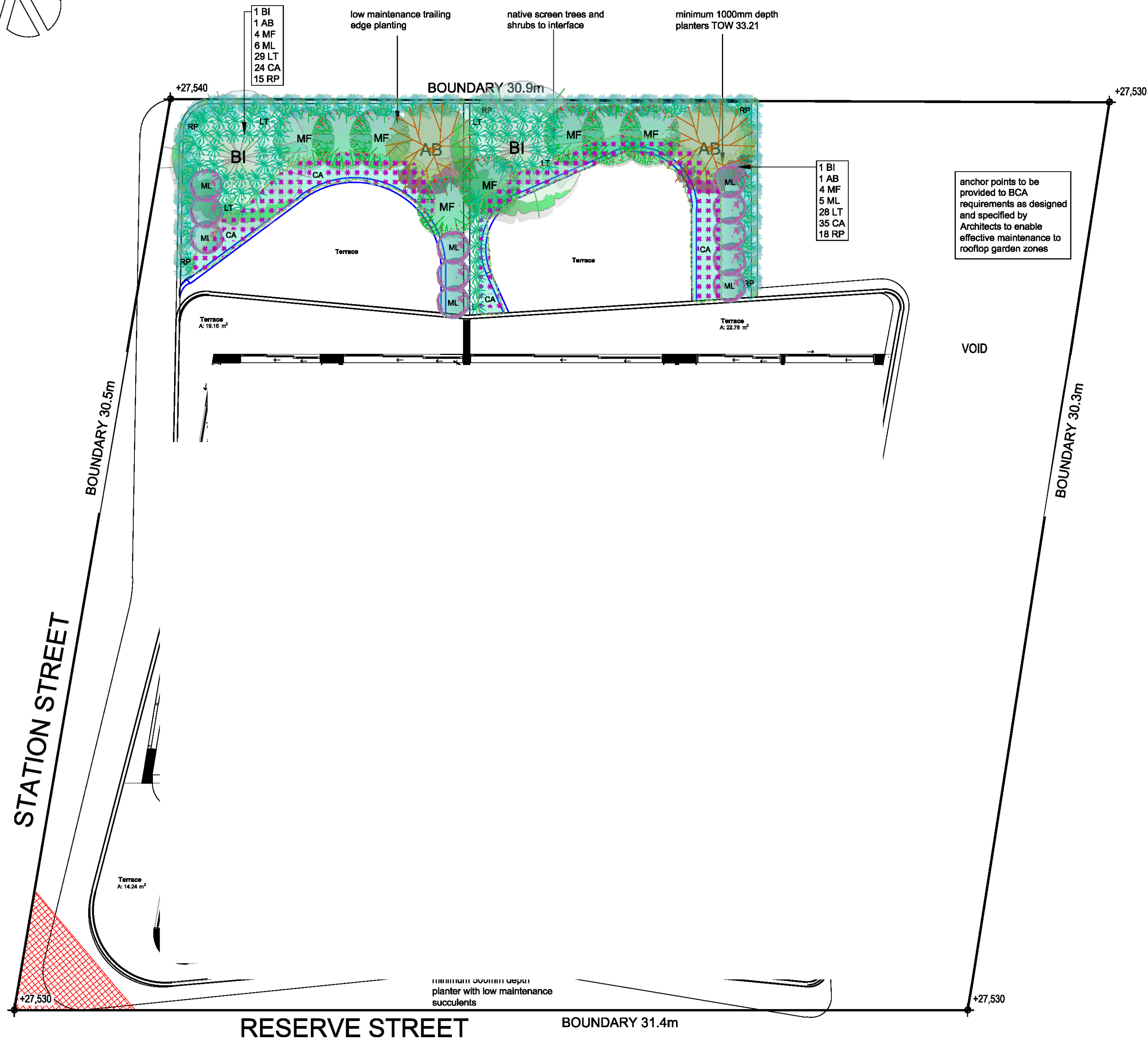
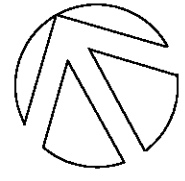
Principal Certifying Authority: #Principal Certifying Authority  
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 Acoustic Engineer: #Acoustic Engineer



Client: **MR David Reeves**  
 Project: **MIXED USE DEVELOPMENT**  
 Address: **118 - 120 STATION STREET PENRITH NSW 2750 Australia**

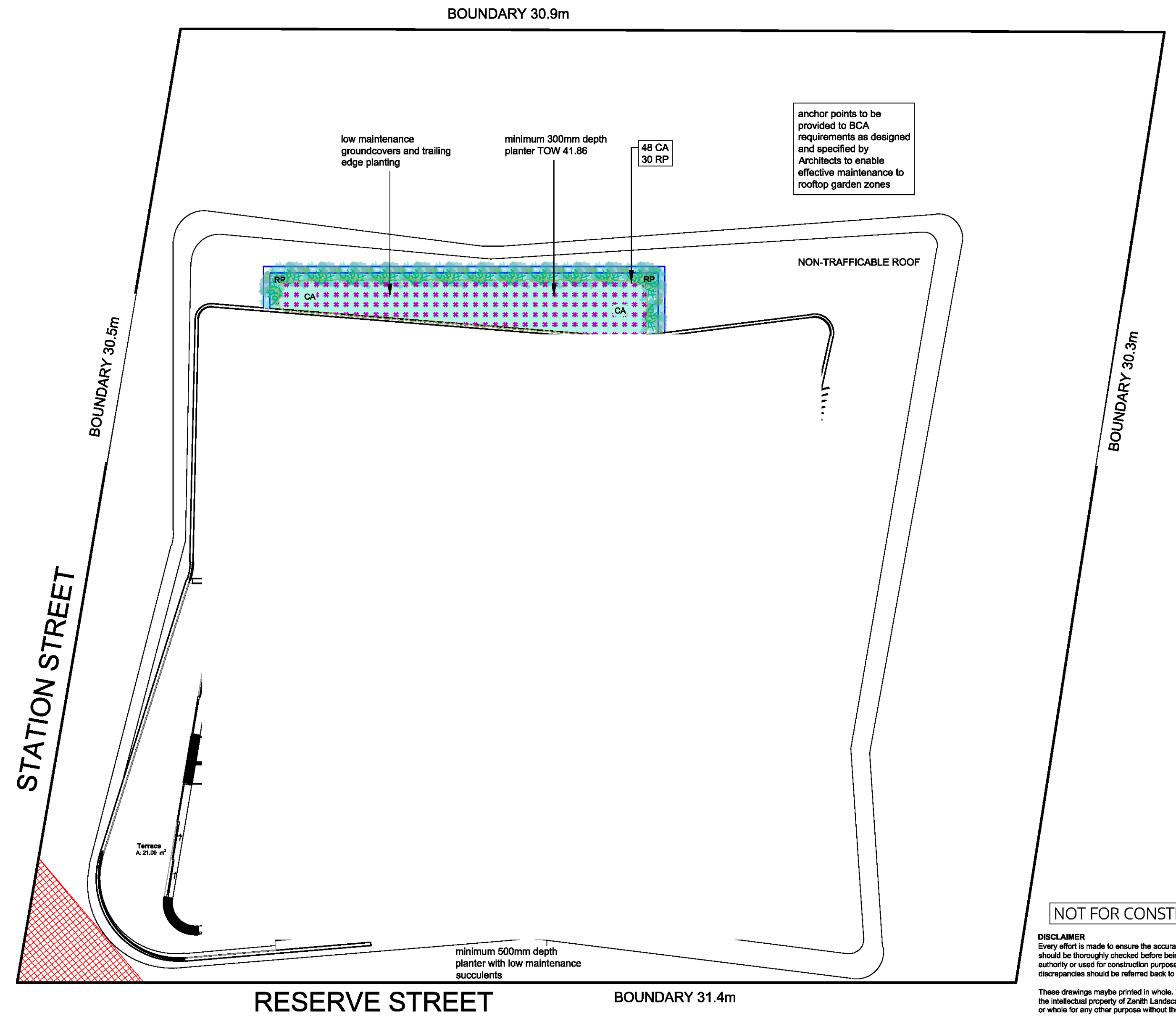
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Drawing No: <b>8004</b>		Checked: <b>IS</b>
Date: <b>28/09/2021</b>	A1 Scale: <b>50%</b>	A3 Scale: <b>50%</b>
Project No: <b>Pn_0735</b>	Client: <b>MR David Reeves</b>	





LEVEL 1 PLAN 1:100

LEVELS 2, 3, 4, 5 PLAN 1:100



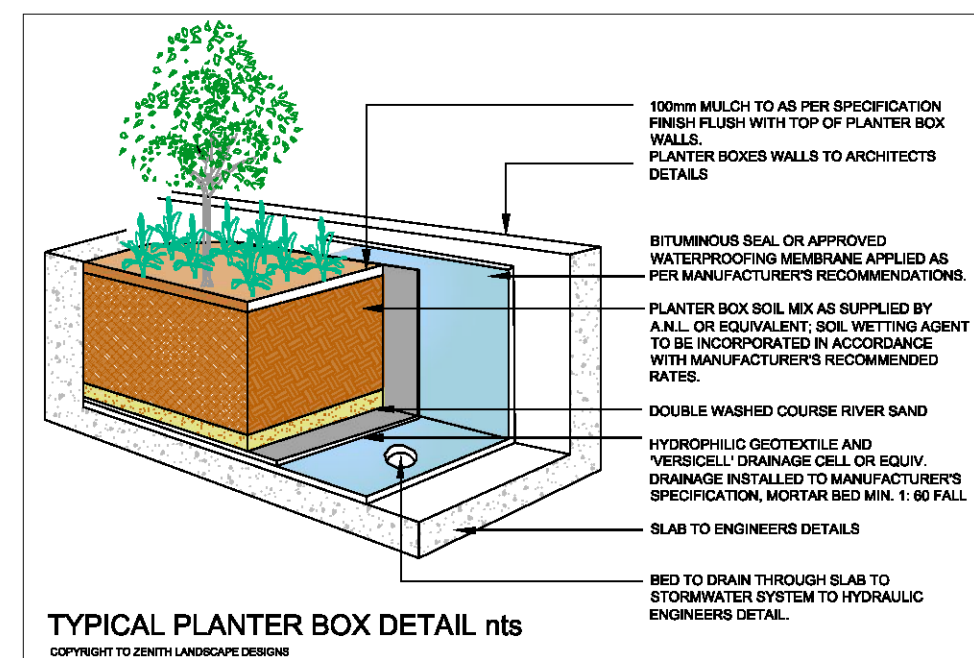
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- NOTES**
1. Vehicular pavement, fencing and built structure details shall be to Architect's specification.
  2. All surface and sub-surface drainage requirements shall be to Engineers details.
  3. Numeric dimensions should be taken in preference to scaling.
  4. All dimensions should be checked on-site prior to commencing construction.
  5. Contractors shall verify the location of all site features prior to commencing works.
  6. Soil testing has not been undertaken as part of the preparation of this design; Contractors shall determine the need for soil testing prior to any planting works.
  7. A search of underground services has not been undertaken as part of the preparation of this design; it is recommended that Contractors contact DIAL BEFORE YOU DIG ON 1100 prior to commencing any works.
  8. This plan is to be read in conjunction with the architectural and engineering plans.
  9. It is recommended that an approved root barrier be installed to manufacturers recommendations to all tree planting in the vicinity of structures, walls and hard pavement areas.
  10. Common mass planted beds will require a fully automated irrigation system which is to be designed and installed by an irrigation consultant prior to planting.

PLANT SCHEDULE - LEVEL 1						
SYMBOL	SPECIES	No.	Pot Size	Mat. Hgt.	Stake	COMMON NAME
BI	<i>Banksia integrifolia</i>	2	75ltr	8m	yes	Coast Banksia
AB	<i>Agonis 'Burgundy'</i>	2	25ltr	4m	yes	Burgundy Agonis
MF	<i>Metrosideros 'Fiji Fire'</i>	8	25ltr	2.5m	no	Fiji Fire
AA	<i>Agave attenuata</i>	4	5ltr	1m	no	Agave
ML	<i>Metrosideros 'Little Ewan' (hedged)</i>	11	5ltr	1m	no	Dwarf Metrosideros
LT	<i>Lomandra longifolia 'Tanika'</i>	57	150mm	0.5m	no	Dwarf Mat Rush
CA	<i>Carpobrotus 'Aussie Rambler'</i>	59	150mm	g/cover	no	Native Pigface
RP	<i>Rosmarinus prostrata</i>	33	150mm	g/cover	no	Prostrate Rosemary



PLANT SCHEDULE - LEVELS 2, 3, 4 & 5						
SYMBOL	SPECIES	No.	Pot Size	Mat. Hgt.	Stake	COMMON NAME
AA	<i>Agave attenuata</i>	16	5ltr	1m	no	Agave
CA	<i>Carpobrotus 'Aussie Rambler'</i>	48	150mm	g/cover	no	Native Pigface
RP	<i>Rosmarinus prostrata</i>	30	150mm	g/cover	no	Prostrate Rosemary

sample project images



C	REVISED ARCHITECTURAL DESIGN	16.09.2021
B	REVISED ARCHITECTURAL DESIGN	08.03.2021
A	REVISED ARCHITECTURAL DESIGN	18.11.2020
Rev. no.	Description:	Date:

ARBORIST:  
SURVEY:  
HYDRAULIC: ACE  
ARCHITECT: ADS ARCHITECTS  
CLIENT: JIM ATKEM & PARTNERS



Ph: 9545 5200 info@zenithlandscapes.com.au

118-120 STATION STREET  
PENRITH

TITLE:	LANDSCAPE PLAN	SCALE:	1:100
STATUS:	DA	SHEET:	2 OF 3
DRAWN:	MAG	CHECKED:	MFG
DATE:	02.09.2020	DRAWING No.:	20-4238 LO2
		REVISION:	C

