Rail Interface Report

162-172 Lord Sheffield Circuit, North Penrith

PREPARED FOR URBAN PROPERTY GROUP

November 2022

URBAN PROPERTY

macroplan

Important Notice

Macroplan staff responsible for this report:

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Introduction

This part of the report provides background information to the project and the need for this report to be submitted with the Development Application.

Background

Urban Property Group (UPG) has engaged Macroplan to prepare a Rail Interface Report (RIR) in support of their Development Application (DA) for a mixed-use development (the development) at **160-172 Lord Sheffield Circuit, North Penrith** (the site). The development will consist of two (2) residential towers above a commercial podium and three (3) levels of basement carparking. The proposal was the subject of an architectural design competition and the Competition Jury unanimously agreed that scheme presented by SJB Architects (this proposed scheme) was the most capable of achieving design excellence for the site.

The site's southern boundary adjoins the Western Line rail corridor and Penrith Station, and is also encumbered with a rail electrical easement on its southern boundary. Given the nature of the development and its interface with the rail corridor and rail electrical infrastructure the DA will require a referral to the rail authority and electrical supply authority as prescribed under State Environmental Planning Policy (Transport and Infrastructure) 2021 (the TISEPP). The prescribed rail authority is Transport for NSW (TfNSW) and the prescribed electrical supply authority is the Transport Asset Holding Entity (TAHE). It is understood that both TfNSW and TAHE have delegated their functions and powers under the TISEPP to entities or divisions within the Transport Cluster via Instruments of Delegation, and that they will act as the "delegated authority" for the processing of any referral or concurrence matter.

The purpose of the RIR is to address the applicable technical requirements contained in the TfNSW Standard T HR CI 12090 ST - *Airspace and External Developments* (the Standard) which facilitates the design, construction, maintenance and decommissioning of developments that adjoin or impact on rail services and/or rail infrastructure. This RIR will accompany the DAs Statement of Environmental Effects (SEE) as Appendix FF.

Concurrence and Referrals

As discussed above the development will consist of two (2) residential towers above a commercial podium and three (3) levels of basement carparking. The site adjoins Western Line rail corridor and is also encumbered by a rail electrical easement. Given the proposed works and the proximity to the rail corridor and rail infrastructure, the proposed development triggers a number of concurrence and referral provisions contained within *Chapter 2 – Infrastructure* of the TISEPP, as follows:

Development likely to affect an electricity transmission or distribution network

- *Clause 2.48 - Determination of development applications—other development*

(1) This section applies to a development application (or an application for modification of a consent) for development comprising or involving any of the following—

(a) the penetration of ground within 2m of an underground electricity power line or an electricity distribution pole or within 10m of any part of an electricity tower,

(b) development carried out—

(i) within or immediately adjacent to an easement for electricity purposes (whether or not the electricity infrastructure exists)

Comment:

UPG has been provided with extract of the Sydney Trains WEBGIS and provided with the as-built drawings of the electrical cable located in close proximity to the development site on its southern boundary. From these details it can be ascertained that whilst the site is encumbered by an easement, the electrical cable for the majority of the easement length is located within the rail cable and not the easement area. There are two small sections located on the eastern and western end of the site where the electrical cable enters the site's easement area. On the western end of the site the cable will be located within 2m of ground penetration and therefore falls within the requirements of *Clause 2.48(1)(a)* of the TISEPP. Further, as the proposed development is adjacent to an easement for electrical purposes the proposal development also falls within the requirements of Clause 2.48(1)(b)(i). As such, a referral to the prescribed electrical supply authority (being TAHE) is triggered under *Clause 2.48(2)* of the TISEPP.

Development in or adjacent to rail corridors and interim rail corridors

- *2.98 Development adjacent to rail corridors*

(1) This section applies to development on land that is in or adjacent to a rail corridor, if the development—

(a) is likely to have an adverse effect on rail safety, or

(b) involves the placing of a metal finish on a structure and the rail corridor concerned is used by electric trains, or

(c) involves the use of a crane in air space above any rail corridor

Comment:

The proposed development is located predominantly 3m from the rail corridor (some balconies do encroach within the 3m easement) and given the nature of the development, has the potential to have an adverse impact on rail safety and will involve the use of crane in close proximity to the rail corridor airspace and therefore such falls within the requirements of *Clause 2.98(1)* of the TISEPP. As such, a referral to the prescribed rail authority (being TfNSW) is triggered under *Clause 2.98(2)* of the TISEPP.

- *2.99 Excavation in, above, below or adjacent to rail corridors*

(1) This section applies to development (other than development to which section 2.101 applies) that involves the penetration of ground to a depth of at least 2m below ground level (existing) on land—

(a) within, below or above a rail corridor, or

(b) within 25m (measured horizontally) of a rail corridor, or

(c) within 25m (measured horizontally) of the ground directly below a rail corridor, or

(d) within 25m (measured horizontally) of the ground directly above an underground rail corridor.

Comment:

As mentioned above the proposed development is located predominantly 3m from the rail corridor and will contain three (3) levels of basement carparking. The bulk excavation for the basement will be within 25m of the rail corridor and deeper than 2m in depth f the (some balconies do encroach within the 3m easement) and given the nature of the development, has the potential to have an adverse impact on rail safety and will involve the use of crane in close proximity to the rail corridor airspace and therefore falls within the requirements of *Clause 2.99(1)* of the TISEPP. As such, concurrence from the prescribed rail authority (being TfNSW) is required under *Clause 2.99(2)* of the TISEPP.

- *2.100 Impact of rail noise or vibration on non-rail development*

(1) This section applies to development for any of the following purposes that is on land in or adjacent to a rail corridor and that the consent authority considers is likely to be adversely affected by rail noise or vibration—

(a) residential accommodation,

(b) a place of public worship,

(c) a hospital,

(d) an educational establishment or centre-based child care facility.

(2) Before determining a development application for development to which this section applies, the consent authority must take into consideration any guidelines that are issued by the Planning Secretary for the purposes of this section and published in the Gazette.

(3) If the development is for the purposes of residential accommodation, the consent authority must not grant consent to the development unless it is satisfied that appropriate measures will be taken to ensure that the following LAeq levels are not exceeded—

(a) in any bedroom in the residential accommodation—35 dB(A) at any time between 10.00 pm and 7.00 am,

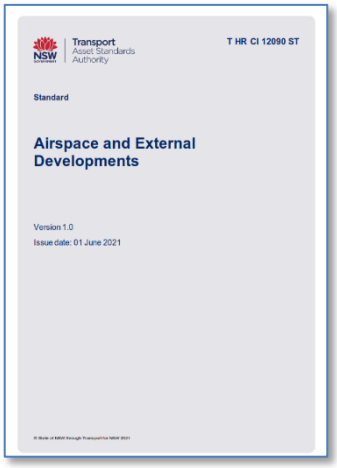
(b) anywhere else in the residential accommodation (other than a garage, kitchen, bathroom or hallway)—40 dB(A) at any time.

Comment:

Whilst this Clause does not trigger a concurrence or referral under the TISEPP, nonetheless the proponent is required to adhere to the guidelines issued by the Planning Secretary and the dB(A) levels prescribed in Clause 2.100(3) of the TISEPP. The guideline issued by the Planning Secretary is the *Development Near Rail Corridors and Busy Roads – Interim Guideline* (the Guideline). UPG has commission a Noise Impact Assessment report in support of the proposed development and is provided as Appendix M in the SEE.

Guidelines and Standards

The TISEPP makes reference to the applicability of the *Development Near Rail Corridors and Busy Roads – Interim Guideline* for the assessment of development proposal adjoining or impacting on the rail corridor or rail operations. This Guideline document is largely used by Councils (to assess) and designers (to design) the proposed development. The delegated authority representing TfNSW and TAHE coordinates the review of the development proposals referred to them for comment or concurrence in accordance with the Standard.



The Standard contains the relevant requirements and documentation that need to be provided with DAs to enable the review of the DA and the issuing of comments and/or concurrence (as the case may be) to consent authority (Council).

A pre-DA meeting was held between UPG, UPG consultants, TfSNW and Sydney Trains on 31/08/2022 to discuss aspects of the proposed development and to ascertain which parts of the Standard would apply, the level of documentation required and any concerns or issues that may require a design change. This RIR address the requirements, as applicable to this proposed development, contained in the Standard and the advice provided by TfNSW and Sydney Trains.

Chapter 1: Safety Requirements

This Chapter of the report addresses the safety requirements, as applicable to this proposed development, outlined in **Section 5** of the Standard.

1.1 Safety in Design

Section 5.1 of the Standard applies to airspace developments, and those external developments nominated by TfNSW during the review process. Safety considerations, and compliance with applicable standards have been considered during the design of the proposed development, however, should TfNSW deem that further safety considerations are required, it is considered that these are more appropriately covered as conditions of consent on the DA.

1.2 Fire and life safety objectives

Section 5.2 of the Standard requires consideration of any fire and life safety risks created by this development. The DA for this proposed development is accompanied by a BCA Compliance Statement prepared by McKenzie Group and Fire Engineering Statement which are provided in Appendix R and Appendix Z (respectively) in the SEE.

1.3 Risk Assessment

Section 5.3 of the Standard requires the undertaking of risk assessment where required in the standard or by TfNSW. As the development is located within 20m of the centreline of the nearest rail track Section 11 of the standard requires the undertaking of a derailment risk assessment. Chapter 9 of this Report addresses this matter.

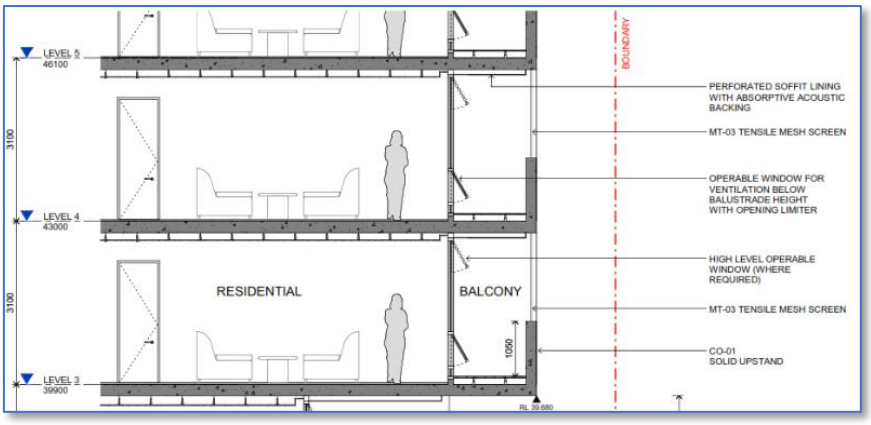
1.4 Protection of the rail corridor

Section 5.4 of the Standard requires the installation of measures to prevent the throwing or falling of objects onto the rail corridor or rail facilities from balconies, windows and roof top terraces. The design for this development incorporates design solutions to this requirement and are discussed below.

1.4.1 Balcony and Window Design

All balconies within 20m of the rail corridor and facing the corridor will include tensile mesh screening (see image to the right) and will have gaps to prevent the throwing or falling of objects into the rail corridor. Windows facing the rail corridor will also have restrictors to limit their opening distance. Details of balcony screening are provided on architectural drawings **A-1601** and **A-1602** (extract also provided below).

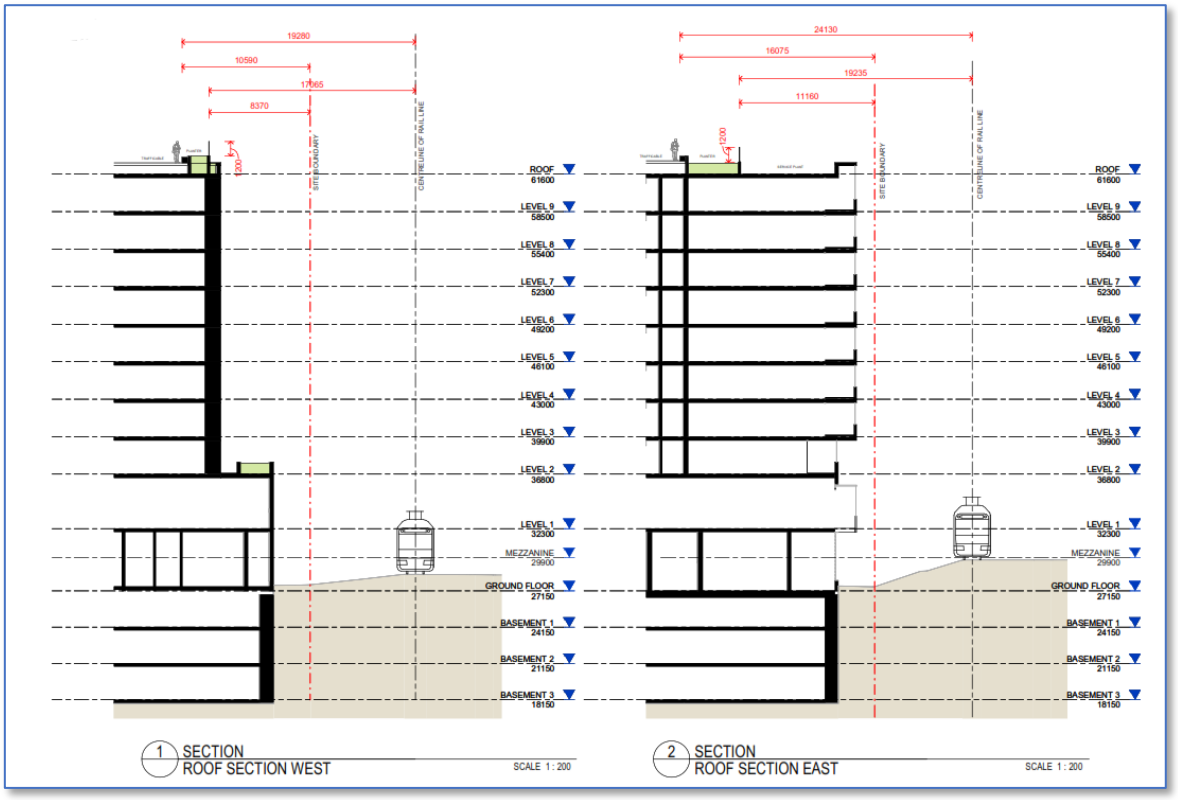
Source: SJB



Source: SJB

1.4.2 Roof Top Terraces

The Standard requires that roof top terraces be fitted with screens in accordance with Australian Standard *AS 5100 – Bridge Design*. The subject development is the subject of an architectural design competition and as such incorporates design solutions considered to achieve both the required protection requirements and consistency with the competition design requirements. Architectural drawings **A-9013** contain details of the roof top terrace protection. Should it be deemed that further protection is required, or a change in the proposed design, it is considered that this be covered via a condition of consent to be complied with at the Construction Certificate (CC) stage to enable and change to be considered in light of both AS5100 and design competition requirements.



Source: SJB

1.5 Security

The site currently has a compliant rail standard palisade fence along the common boundary with the rail corridor. This fencing will be retained and is deemed to meet the requirements of Section 5.5 of the Standard.

1.6 Dangerous Goods

The proposed development is predominantly a residential development with retail at lower levels. As such no dangerous goods are envisaged to be stored on this site and hence it is considered that Section 5.6 of the Standard does not apply.

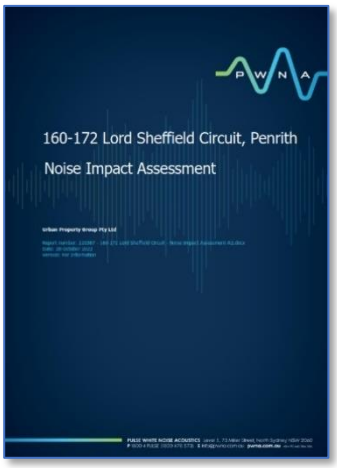
Chapter 2: Environmental Requirements

This Chapter of the report addresses the environment requirements, as applicable to this proposed development, outlined in **Section 6** of the Standard.

2.1 Green Infrastructure

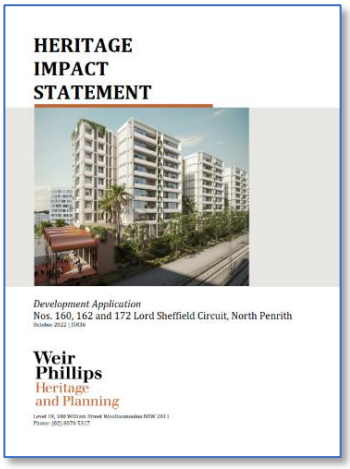
Plant species used in landscaping between the proposed building and the rail corridor have been carefully selected to ensure that they do not impact on rail operations. The plants will be low maintenance species with non-invasive root systems and whilst the majority will be located with the easement area, they will be located above the portion of the underground cable that is within the development site. Detailed landscape drawings **L401** and **L404** and Landscape Design Report prepared by Arcadis are provided in Appendix J of the SEE. These landscape drawings and landscape report contain species details, location of planting, location of electrical easement and cable location based on the as-built drawings provided by Sydney Trains (refer Attachment B of this Report)

2.2 Noise and Vibration



The development proposal is accompanied with a Noise Impact Assessment report prepared by Pulse White Noise Acoustics (PWNA) and provided in Appendix M of the SEE. Clause 2.100 of the TISEPP and Section 6.2 of the Standard requires compliance with acoustic requirements. The PWNA report has been prepared in accordance with the Department of Planning's *Development Near Rail Corridors and Busy Roads - Interim Guidelines* and assess both rail noise from passing trains and also noise emissions from operation of the station (ie, announcements). The proposed development will incorporate measures which will ensure that the required dBA levels stipulated in Clause 2.100(3) of the TISEPP are not exceeded.

2.3 Heritage



Penrith Railway Station group is listed on the NSW State Heritage Register (ID No. 5012132). Section 6.3 of the Standard requires the consideration of a development's impact on adjoining heritage items. The SEE contains a Heritage Impact Assessment (HIA) report prepared by Weir Phillips. The HIA assessment concluded that the proposed development would have no impact on the heritage fabric of this item.

Chapter 3: Configuration

This Chapter of the report addresses the configuration requirements, as applicable to this proposed development, outlined in **Section 7** of the Standard

3.1 Airspace developments

Section 7.1 of the Standard applies to airspace developments, and such is not applicable to this proposed development.

3.2 External developments

Section 7.2 of the Standard applies to external developments that trigger either a referral to or concurrence from the prescribed rail authority. This proposed development falls within the definition of an external development and will trigger a referral to and concurrence from the prescribed rail authority. The Standard requires that proposed developments ensure that the safety or structural integrity, and the safe and effective operation of existing rail infrastructure facilities in the rail corridor are protected during undertaking of the development works, and on completion of the development. This Report and relevant expert reports accompanying the DA are provided to address the TfNSW requirements contained in the Standard in order to obtain referral comments or concurrence from the prescribed rail authority.

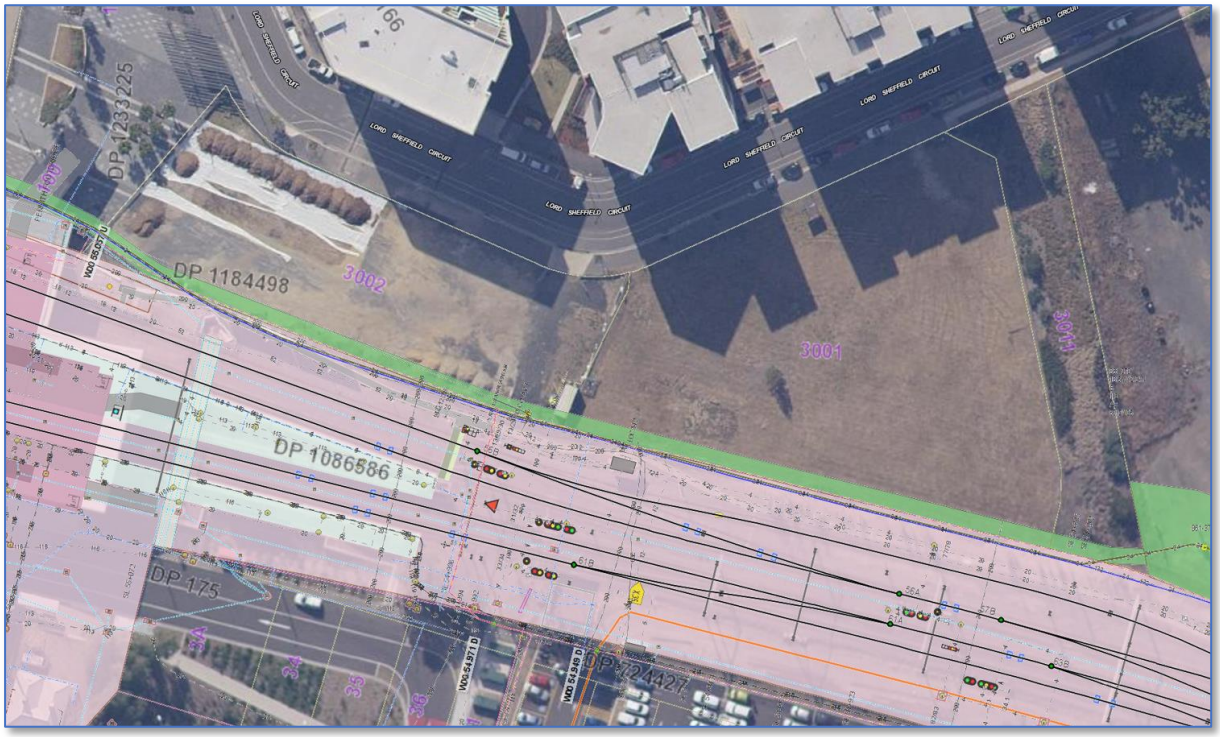
3.3 Prohibited configurations

Section 7.3 of the Standard provides requirements for ground anchors and frangible supports. As will be detailed later in this Report, the proposed development does not propose either ground anchors or frangible supports to be placed into the rail corridor.

Chapter 4: Services

This Chapter of the report addresses the requirements for services, as applicable to this proposed development, outlined in **Section 8** of the Standard.

The subject site is encumbered by predominantly 3m wide electrical easement along the rear of the boundary. Extract from the Sydney Trains WEBGIS indicates that the underground cables (33kV and 66kV) are predominantly located within the rail corridor and not within the easement area (as shown in green below), except for two minor portions at the eastern and western ends of the site.



Source: Sydney Trains WEBGIS

The proponent requested and has obtained the following as-built drawings which provide the details and location of the underground electrical cable:

- 2667-SUBS-PENR-EL-D-0130
- 2667-SUBS-PENR-EL-D-0131
- 2667-SUBS-PENR-EL-D-0142
- 2667-SUBS-PENR-EL-D-0160
- 2667-SUBS-PENR-EL-D-0161

The details contained in the above as-built drawings have been incorporated in the architectural, landscape and engineering drawings and are also contained in Attachment B of this report.

Chapter 5: Clearances

This Chapter of the report addresses the requirements for track clearances, as applicable to this proposed development, outlined in **Section 9** of the Standard.

5.1 Track clearances

A detailed survey of the rail corridor was undertaken by a Registered Surveyor from SDG Surveyors and the detailed survey plan accompanies the DA. The distance of the nearest track to the face of the building at ground level ranges from 10.5m to 12m and stanchions are located between 8.4m to 9.8m to the face of the building. These survey details have been incorporated into the architectural, landscape and engineering drawings

5.2 Viaduct clearance

The development site is not located near any viaduct.

5.3 Electrical clearances

Section 4 of this Report provides details in relation to the underground cable located in close proximity to the proposed development. At ground level and below ground level the proposed development does not encroach on the registered electrical easement that encumbers the development site.

Chapter 6: Temporary components and works

This Chapter of the report addresses the requirements for temporary components, such as shoring systems, as applicable to this proposed development, outlined in **Section 10** of the Standard.

The proposed development contains a three-level basement and as such, will require the installation of a shoring system during excavation. The proposed shoring system is described further in Chapter 9 of this Report. However, it should be noted that no shoring works, either temporary or permanent, will encroach into the rail corridor or easement area.

Chapter 7: Supports and collision protection

This Chapter of the report addresses the collision protection requirements, as applicable to this proposed development, outlined in **Section 11** of the Standard.

Section 11 of the Standard requires supports for developments to comply with the Australian Standard AS 5100 - *Bridge design*. Based on the detailed survey of the nearest track and the location of the proposed building, supports for the development will be located within the 10-20m zone, and therefore requires the preparation of a derailment risk assessment. The proponent is currently in the process of engaging a suitable expert to undertake this risk assessment, however, typically such an assessment is imposed as a condition of consent to be undertaken at Construction Certificate (CC) stage. As such, the risk assessment will be provided for review and acceptance by the rail authority at the CC stage.

Chapter 8: Electrical Requirements

This Chapter of the report addresses the electrical requirements, as applicable to this proposed development, outlined in **Section 12** of the Standard.

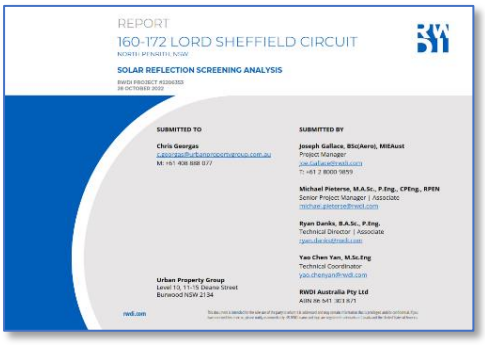
8.1 General electrical requirements

Section 4 of this Report provides details with respect to the location of the rail electrical cable, easement and clearance from the proposed development.

8.2 Electrolysis

Typically, the assessment of the effects of stray currents is imposed as a condition of consent to be undertaken at Construction Certificate (CC) stage. As such, an electrolysis assessment will be undertaken at the CC stage and any recommendation contained in the assessment report will be incorporated in the development.

8.3 Lighting and reflective materials


REPORT
160-172 LORD SHEFFIELD CIRCUIT
NORTH PENRITH, NSW
SOLAR REFLECTION SCREENING ANALYSIS
SUBMITTED TO
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Appendix P of the SEE contains a report addressing reflectivity prepared by RWDI. This report assess glare to train drivers as a result of the external finishes of the proposed development. The analysis found that any reflections to train drivers do not exceed the veiling luminance threshold.

In relation to lighting, the development, being a predominantly residential development with ground floor retails is unlikely to impact on train drivers or restrict visibility of signals. Should it be deemed necessary, an assessment can be provided at the Construction Certificate (CC) stage as a condition of consent.

Chapter 9: Geotechnical

This Chapter of the report addresses the geotechnical requirements, as applicable to this proposed development, outlined in **Section 14** of the Standard.

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9.1 Geotechnical investigation

As the proposed development involves basement excavation and shoring, Section 14.1 of the Standard requires the undertaking of a detail geotechnical investigation. A geotechnical assessment has been undertaken by EI Australia and their report forms part of the DA package. Details of the report are discussion in Section 9.3.1 of this Report

9.2 Engineering analysis and impact assessment

Section 14.2 of the Standard requires the undertaking of an engineering analysis and impact assessment for development involving ground penetration deeper than 2m and within 25m of the rail corridor. The proposed development involves the excavation of the construction of three basement levels that will located within 3m of the rail corridor at their closest point. As such, this requirement applies and is discussed further in Section 9.3.2 of this Report.

9.3 Engineering assessment report

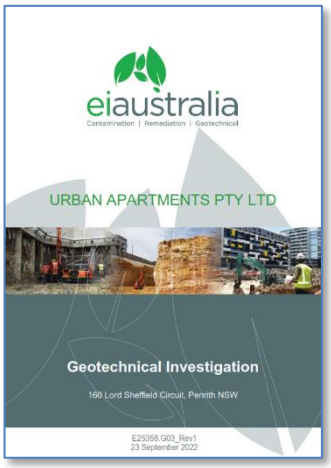
Section 9.3 of the Standard requires the preparation of an engineering assessment report comprising the following:

- geotechnical investigation report
- impact assessment report
- risk assessment report

These are discussed below:

9.3.1 Geotechnical Investigation report

As mentioned in Item 9.1 above, a geotechnical assessment was undertaken by EI Australia and their report forms part of the DA package. The geotechnical report contains, where applicable, the level of detail as described in Section 14.3.1 of the Standard.



The geotechnical report provides details of the rock formation encountered in the bore holes, excavation methodology, a recommended excavation retention system and pile footings and recommendation for monitoring. It is noted that track monitoring is typically imposed as a condition of consent to be complied with at the Construction Certificate (CC) stage. It is considered that this is the most appropriate form to detail with track monitoring.

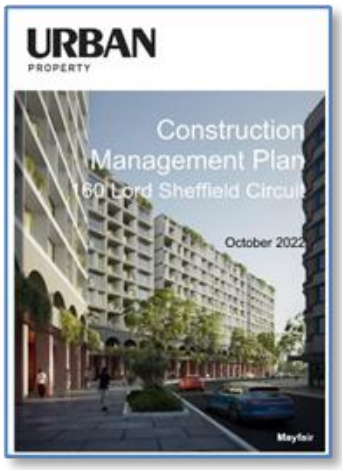
The geotechnical assessment also encountered groundwater during auger drilling of all boreholes. As such, a Groundwater Take Assessment was also undertaken by EI Australia and their report forms part of the DA package. The assessment found that groundwater take will be negligible, and that dewatering will have negligible adverse impact on neighbouring properties.

9.3.2 Impact assessment report

Van Der Meer engineers have prepared the structural design for the proposed development, and addressed, where applicable and relevant, the items contained in Section 14.3.2 of the Standard and the minimum design criteria as outlined in the "*Technical Direction Geotechnology" GTD 2020/001* issued by Transport for New South Wales, 2 July 2020. All required elements required to be provided and assessed by TfNSW are provided in the Van Der Meer Piling Report provided in Appendix BB of the SEE.

This report contains details in relation to surcharge loads, wall properties, Strut properties, construction sequence, lateral wall deflections, a WALLAP output and an excavation methodology statement. The report also contains the structural design drawings S02-01, S02-02, S02-11 and S02-51 that will need to be reviewed by TfNSW.

9.3.3 Risk assessment report



Safety considerations, and compliance with applicable standards have been considered during the design of the proposed development. As stated in Section 10 of the Construction Management Plan provided in Appendix T of the SEE, the proponent undertakes detailed assessments to identify key project risks relating to high-risk construction actives, including and not limited to, public safety and security and to ensure that potential risks are identified, and suitable controls are implemented.

The following assessments outlined within proponent's Management Systems are a mandatory requirement on all of their projects:

- Workplace Risk Assessment (WHS)
- Safety in Design (SID)
- Risk & Opportunity Schedule (Commercial)
- Environmental Impact/Aspect Register, and
- Quality Risk Assessment. (QRA)

These assessment processes are developed in the lead-up to project commencement and maintained throughout the life of the project.

However, should TfNSW deem that further safety considerations are required it is considered that these are more appropriately covered as conditions of consent on the DA and to be undertaken at the Construction Certificate (CC) stage once Council has approved the development in its current form or with modifications.

9.3.4 Independent verification

As the proposed development is not located on TfNSW property the proposed development does not require independent verification under Section 14.3.4 of the Standard.

9.4 Ground penetrations

The proposed development involves excavation for the construction of three basement levels for carpark. The proposed excavation and its impact have been assessed as described in Items 9.3.1 and 9.3.2 of this Report.

9.5 Approved ground anchors

No ground anchors are proposed with the rail corridor land or electrical easement area and as such Section 14.5 of the Standard does not apply.

Chapter 10: Footings and basement

This Chapter of the report addresses the requirements for footings and basements, as applicable to this proposed development, outlined in **Section 15** of the Standard.

10.1 Footings

The proposed development's structural design and its assessment is included in the Piling Report prepared by Van Der Meer (as mentioned in Item 9.3.2 of this Report) that is provided as Appendix BB in the SEE. The structural design meets the requirements of Section 15.1 of the Standard.


van der meer

Transport for New South Wales
Piling Report

160,162 & 172 Lord Sheffield Circuit, North Penrith

10.2 Basements

The proposed development's basement design and its assessment is included in the Piling Report prepared by Van Der Meer (as mentioned in Section 9.3.2 of this Report) that is provided as Appendix BB in the SEE. The structural design of the basement meets the requirements of the Section 15.2 of the Standard.

Chapter 11: Water and drainage

This Chapter of the report addresses the requirements for water and drainage, as applicable to this proposed development, outlined in **Section 16** of the Standard.

A Stormwater Management Plan has been prepared by Enscape Studio that is provided in Appendix AA of the SEE.

All stormwater will be collected on site and discharged into the Council drainage system. Overland flow within the easement area between the proposed building and rail corridor will be collected via a swale and discharged in the site's drainage system (refer Drawing C-05 contained in the Stormwater Management Plan).

As a result there will be no drainage discharge or overflow into the rail corridor.


enscape studio

160-172 Lord Sheffield Circuit
Penrith

Stormwater Management Plan

Chapter 12: Survey

This Chapter of the report addresses the survey requirements, as applicable to this proposed development, outlined in **Section 17** of the Standard.

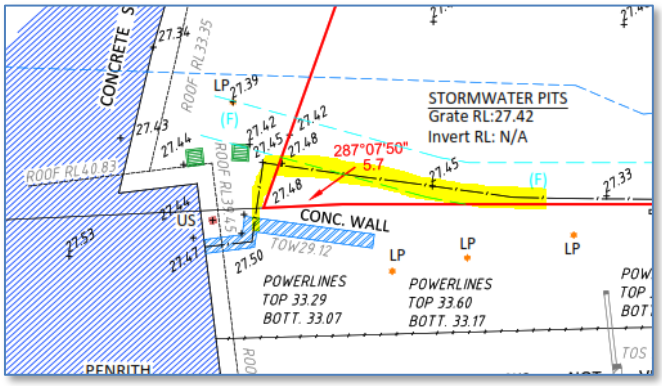
A detailed survey plan has been prepared by a Registered Surveyor from SDG Group and included in Appendix B of the SEE. The Survey Plan **Ref: 8635** provides the applicable details as prescribed in Section 17 of the Standard. Further, as-bult drawings of the underground cable have also been obtained from Sydney Trains (refer Attachment A of this Report). Survey and as-built details have been included in the relevant architectural, landscape and engineering drawings.

12.1 Boundary definition

The location of the proposed development with respect to the railway corridor boundary, in addition to the rail electrical easement, has been identified on the above-mentioned survey plan prepared by SDG Surveyors. These details have been included in all architectural, landscape and engineering drawings

12.2 Boundary fencing

The boundary between the subject site and the rail corridor currently contains a rail palisade fence that seem to have been installed by Sydney Trains. There is no intention to alter the current fencing as it is considered to be fit for purpose and compliant with Stand. The fencing location has been identified on the survey plan prepared by SDG Surveyors. Generally, the fencing is located on the legal boundary, however, a portion of the fencing near Station encroaches into the subject site (see extract below – yellow highlight is fencing, and boundary shown in red). A such, the fencing may need realigned and further discussion with Sydney Trains may be required to ascertain the existence of any rail assets located within this encroachment.



Source: SDG Group

Chapter 13: Access

This Chapter of the report addresses the access requirements, as applicable to this proposed development, outlined in **Section 18** of the Standard.

The proposed development the subject of this DA does not require any access to the rail corridor, nor does it obstruct any rail access gates.

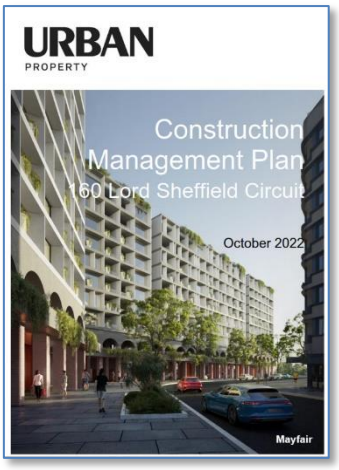
However, the proposed development contains balconies that will encroach into the 3m easement area by 1.5m from an RL 32.000 and above (details of the encroachment are provided in the SJB architectural drawing **A-1602**)

UPG has commenced discussions with representatives of the easement owner TAHE for the acquisition/relinquishment of this easement area given that there is no electrical cable located within the easement (cable predominantly located within the rail corridor) and the balconies above the RL level will still enable access to Sydney Trains (and their machinery and equipment) should it be required.

Chapter 14: Construction

This Chapter of the report addresses the construction requirements, as applicable to this proposed development, outlined in **Section 22** of the Standard.

14.1 General construction requirements

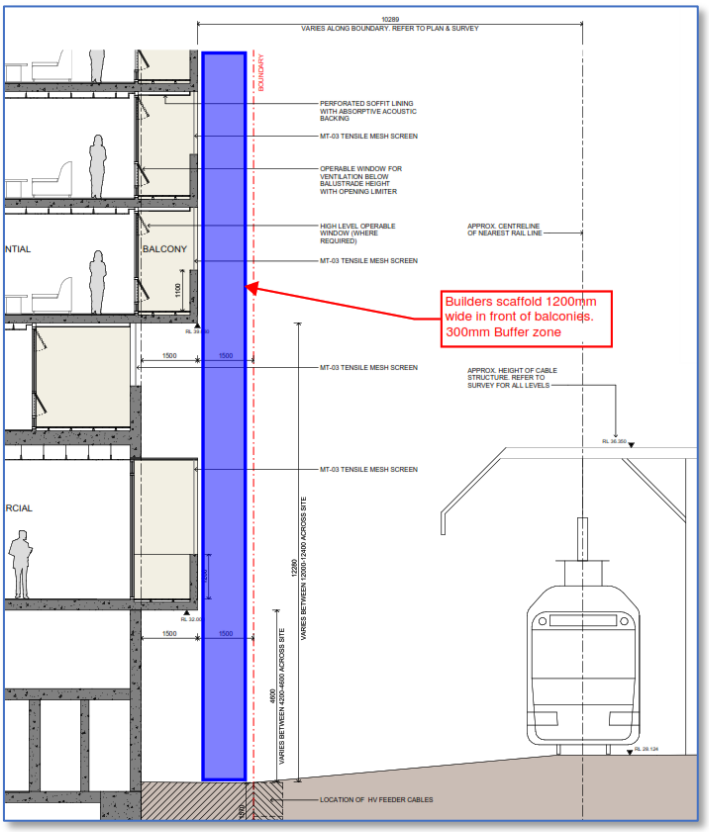


The proposed development will comply with all conditions of consent imposed on the development approval. The DA is accompanied with relevant documentation as required by the Standard and as highlighted by this Report.

14.1.1 Scaffolding

Construction work will include appropriate protection, such as scaffolding facing the corridor to protect the rail corridor. The scaffolding will be erected and dismantled in consultation with Sydney Trains. The scaffold structure will be completely covered with jet mesh to mitigate the incidence of any building elements/surplus materials from falling beyond the scaffold footprint, and will also be tied into the building/slab edge in accordance with the structural engineers design.

Further details regarding the scaffolding are provided in Section 11.6 of the UPG Construction Management Plan contained in Appendix T of the SEE. Scaffolding location and details are provided in drawings **SK-001, Sk-002 and SK-003** provided as Attachment C to this report.

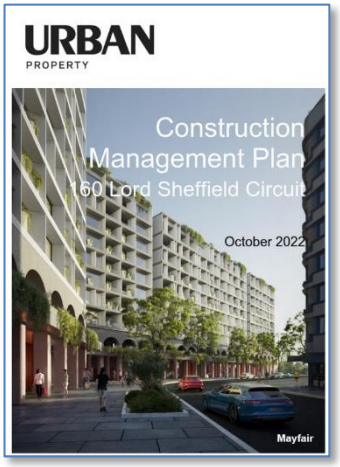


Source: Urban Property Group

14.2 Airspace developments

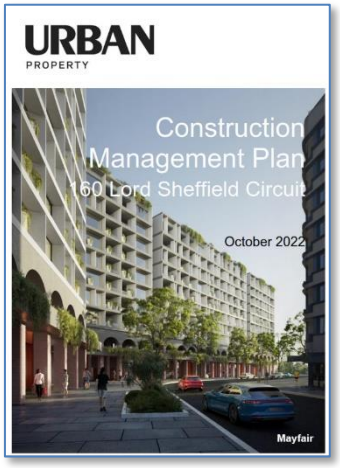
Section 22.2 of the Standard does not apply as the proposed development is not an airspace development.

14.3 Dilapidation surveys

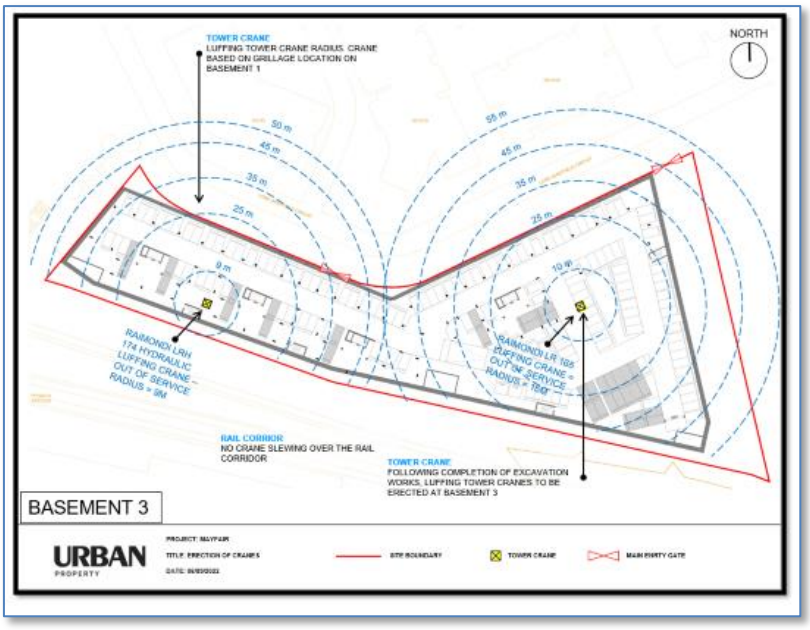


Prior to the commencement of construction works and on completion of works, the proponent will be undertaking dilapidation surveys in consultation with Sydney Trains. Appendix T of the SEE that accompanies the DA contains a Construction Management Plan that confirms that *"dilapidation surveys of the adjoining rail corridor and rail assets will be undertaken prior to commencement and upon completion of construction works in consultation with Sydney Trains."*

14.4 Crane and other aerial operations

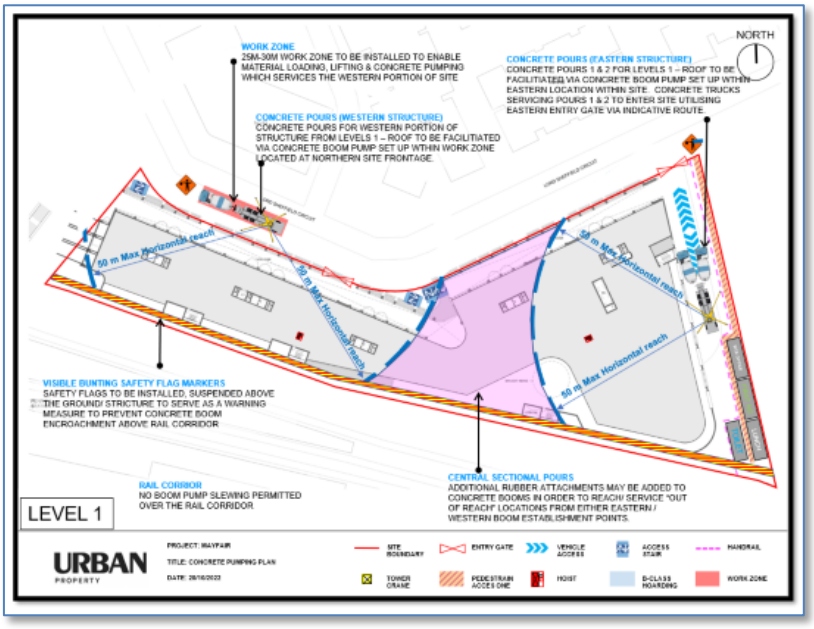


The proponent confirms that two hydraulic luffing cranes will be used during the construction phase of the development. Section 11.3 of the Construction Management Plan (CMP) provided in Appendix T of the SEE contains details with respect to the erection and dismantling of the cranes, control measures to prevent slewing into the rail corridor, and their placement. The site luffing cranes will be programmed with restricting devices to prevent any slewing above the GPS coordinates of the corridor. The CMP contains a specific diagram confirm the location of the cranes and their swing radius (extract provided below). The cranes will also have an out of service free slew within the sole confines of the site and thus avoid any air space encroachment during non-construction periods.



Source: Urban Property Group

Section 11.2 of the Construction Management Plan contains specific details regarding concrete pumping and its placement, and the measures to be utilised to ensure no encroachment into the rail corridor. The CMP contains a specific diagram confirm the location of the concrete pumps and their reach (extract provided below).



Source: Urban Property Group

14.5 Track possessions and power outages

It is envisaged that during the construction of the development there will be no need for any track possessions or power outages as the development will be contained solely within the developers site.

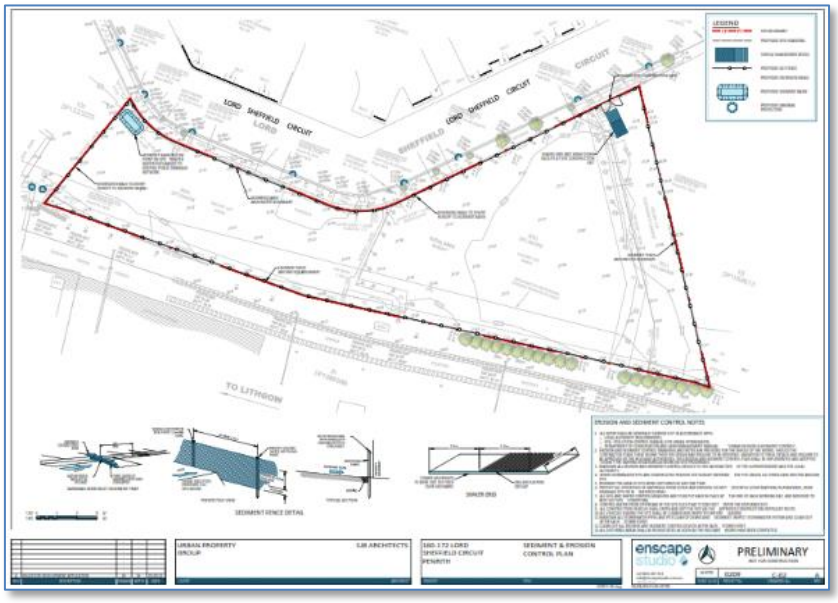
14.6 Demolition and earthworks

The subject site is currently vacant and as such there is no demolition or earthworks required near the rail corridor.

14.7 Drainage and pollution control

Chapter 11 of this Report and the Stormwater Management Plan (SMP) prepared by Enscape Studio contained in Appendix AA of the SEE address as to how stormwater will be managed. The SMP also contains details as to measures used to control sediment, including the prevention of sediment entering the rail corridor.

Plan **C-02** contained in the SMP provides further details as to the sediment controls to be sued (extract below).



Source: Enscape Studio

14.8 Electrical restrictions

The minimum safe work distances to electrical power will be adhered to during the excavation and construction period.

Chapter 15: Maintenance and operation

This Chapter of the report addresses the requirements for maintenance and operations, as applicable to this proposed development, outlined in **Section 23** of the Standard.

15.1 General maintenance and operation

The maintenance of the proposed development will not impact on the rail corridor or rail operations as there is adequate setback between the finished development and the rail corridor boundary to enable maintenance activity to be undertaken solely within the development site.

15.2 Maintenance of Airspace developments

Section 23.2 of the Standard does not apply as the proposed development is not an airspace development.

Chapter 16: Decommissioning and disposal

This Chapter of the report addresses the requirements for decommissioning and disposal, as applicable to this proposed development, outlined in **Section 24** of the Standard.

The site contains no existing building that requires demolition. It is envisaged, that at the end of the economic life of the proposed development that it will be able to be demolished without impact on the rail corridor or rail operations and would comply with any rail requirements applicable at that time.

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Brisbane QLD 4000
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89-91 Surf Parade
Broadbeach QLD 4218
(07) 3221 8166

PERTH
Level 1
89 St Georges Terrace
Perth WA 6000
(08) 9225 7200

www.macroplan.com.au

macroplan

Attachment C

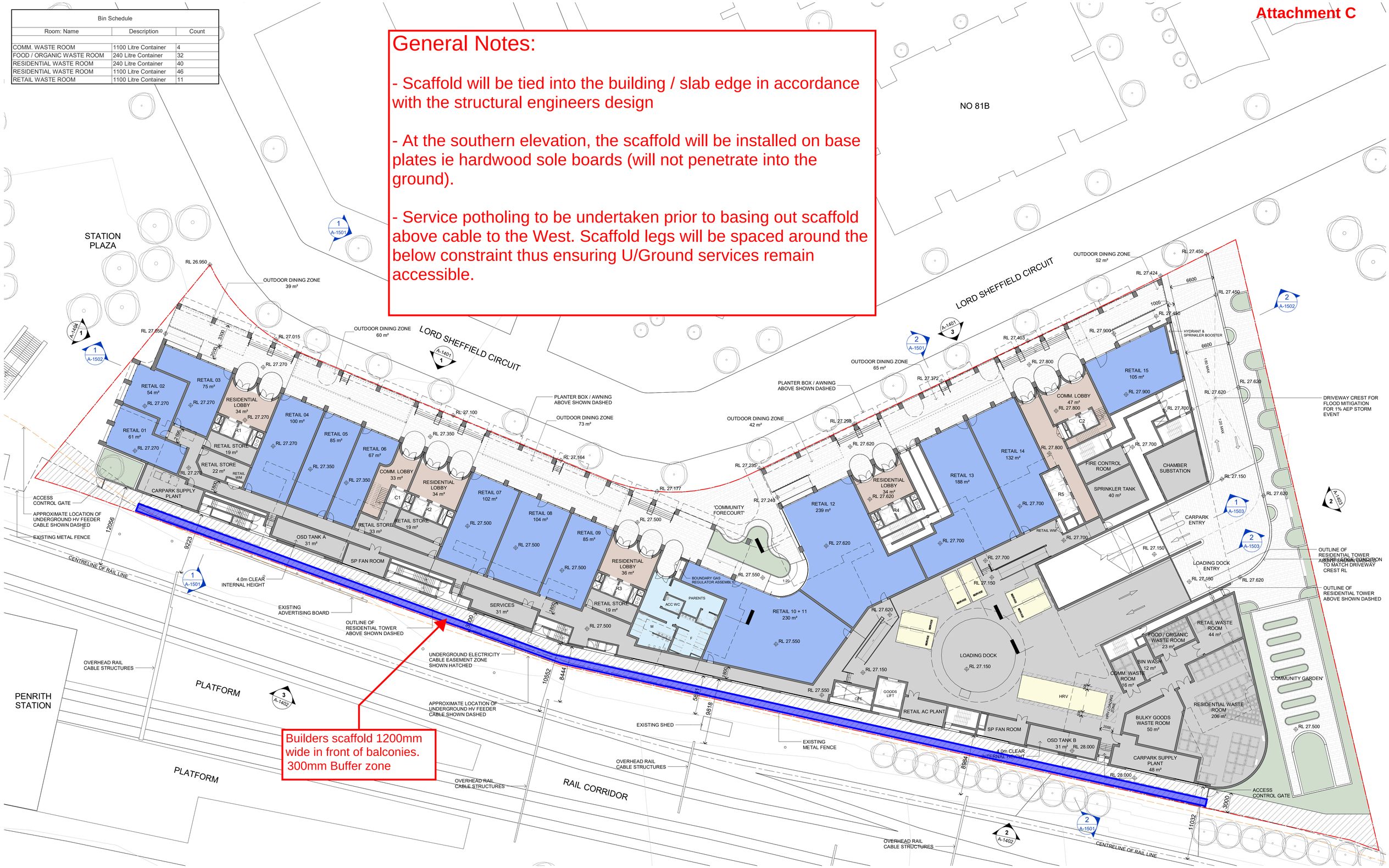
Bin Schedule		
Room: Name	Description	Count
COMM. WASTE ROOM	1100 Litre Container	4
FOOD / ORGANIC WASTE ROOM	240 Litre Container	32
RESIDENTIAL WASTE ROOM	240 Litre Container	40
RESIDENTIAL WASTE ROOM	1100 Litre Container	46
RETAIL WASTE ROOM	1100 Litre Container	11

General Notes:

- Scaffold will be tied into the building / slab edge in accordance with the structural engineers design

- At the southern elevation, the scaffold will be installed on base plates ie hardwood sole boards (will not penetrate into the ground).

- Service potholing to be undertaken prior to basing out scaffold above cable to the West. Scaffold legs will be spaced around the below constraint thus ensuring U/Ground services remain accessible.



FOR APPROVAL

0 2.5 5 12.5m
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Rev	Date	Revision	By	Chk.
4	08.07.2022	DRAFT PRE-DA	SC	WG
5	11.07.2022	PRE-DA	DC	WG
6	08.08.2022	FOR COORDINATION	DC	WG
7	25.08.2022	FOR COORDINATION	MF	WG
8	01.09.2022	FOR CLIENT REVIEW	SC	DC
9	02.09.2022	FOR COORDINATION	SC	WG
10	14.09.2022	FOR DIP	MF	DC
11	27.09.2022	FOR COORDINATION	MF	DC
12	14.10.2022	FOR COORDINATION	MF	DC
13	18.10.2022	FOR COORDINATION	DC	WG

Client
URBAN PROPERTY

Project
6626
160-172 LORD SHEFFIELD CIRCUIT
PENRITH
DEVELOPMENT APPLICATION

Drawing Name
BUILDERS SCAFFOLD GROUND LEVEL

Date	Scale	Sheet Size
18.10.2022	1 : 250	@ A1
Drawn	Chk.	Job No.
DC	WG	6626
Drawing No.		Revision
SK-001		/ 13

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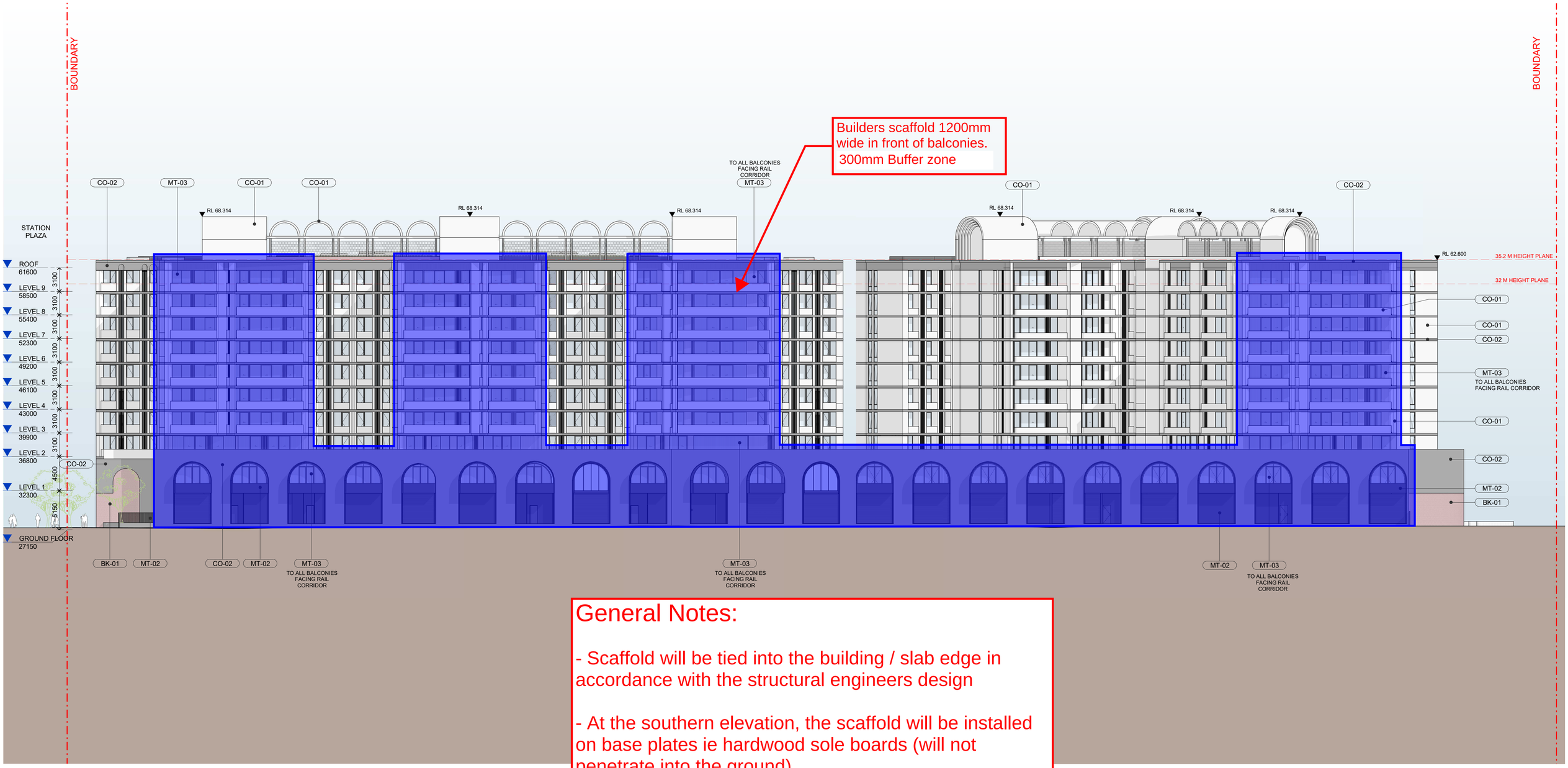
Attachment C



General Notes:

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- At the southern elevation, the scaffold will be installed on base plates ie hardwood sole boards (will not penetrate into the ground).

- Service potholing to be undertaken prior to basing out scaffold above cable to the West. Scaffold legs will be spaced around the below constraint thus ensuring U/Ground services remain accessible.

CO-01 CEMENTITOUS RENDER WHITE
CO-02 CEMENTITOUS RENDER GREY
CO-03 CEMENTITOUS RENDER TO MATCH BK-01
BK-01 BRICKWORK
MT-01 METALWORK FINISH WHITE
MT-02 METALWORK FINISH CHARCOAL
MT-03 TENSILE MESH SCREEN

FOR APPROVAL

Nominated Architects: Adam Haddow-7188 | John Pradel-7004

0 2.5 5 12.5m
1:250 @A1

Rev	Date	Revision	By	Chk.
1	26.05.2022	FOR CLIENT REVIEW	SC	WG
2	01.09.2022	FOR CLIENT REVIEW	SC	DC
3	02.09.2022	FOR COORDINATION	SC	WG
4	14.09.2022	FOR DIP	MF	DC
5	27.09.2022	FOR COORDINATION	MF	DC
6	14.10.2022	FOR COORDINATION	MF	DC
7	18.10.2022	FOR COORDINATION	DC	WG

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Drawing Name
BUILDERS SCAFFOLD ELEVATION

Date	Scale	Sheet Size
18.10.2022	1 : 250	@ A1
Drawn	Chk.	Job No.
SC	WG	6626
Drawing No.		Revision
SK-002		/ 7

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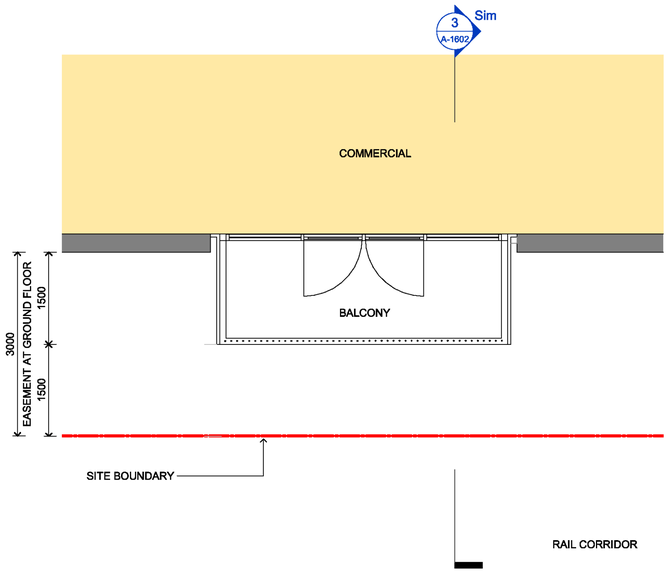
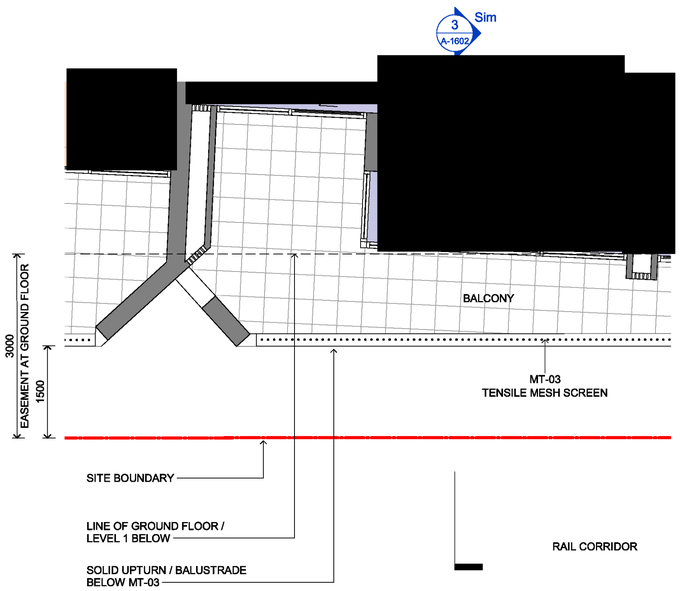
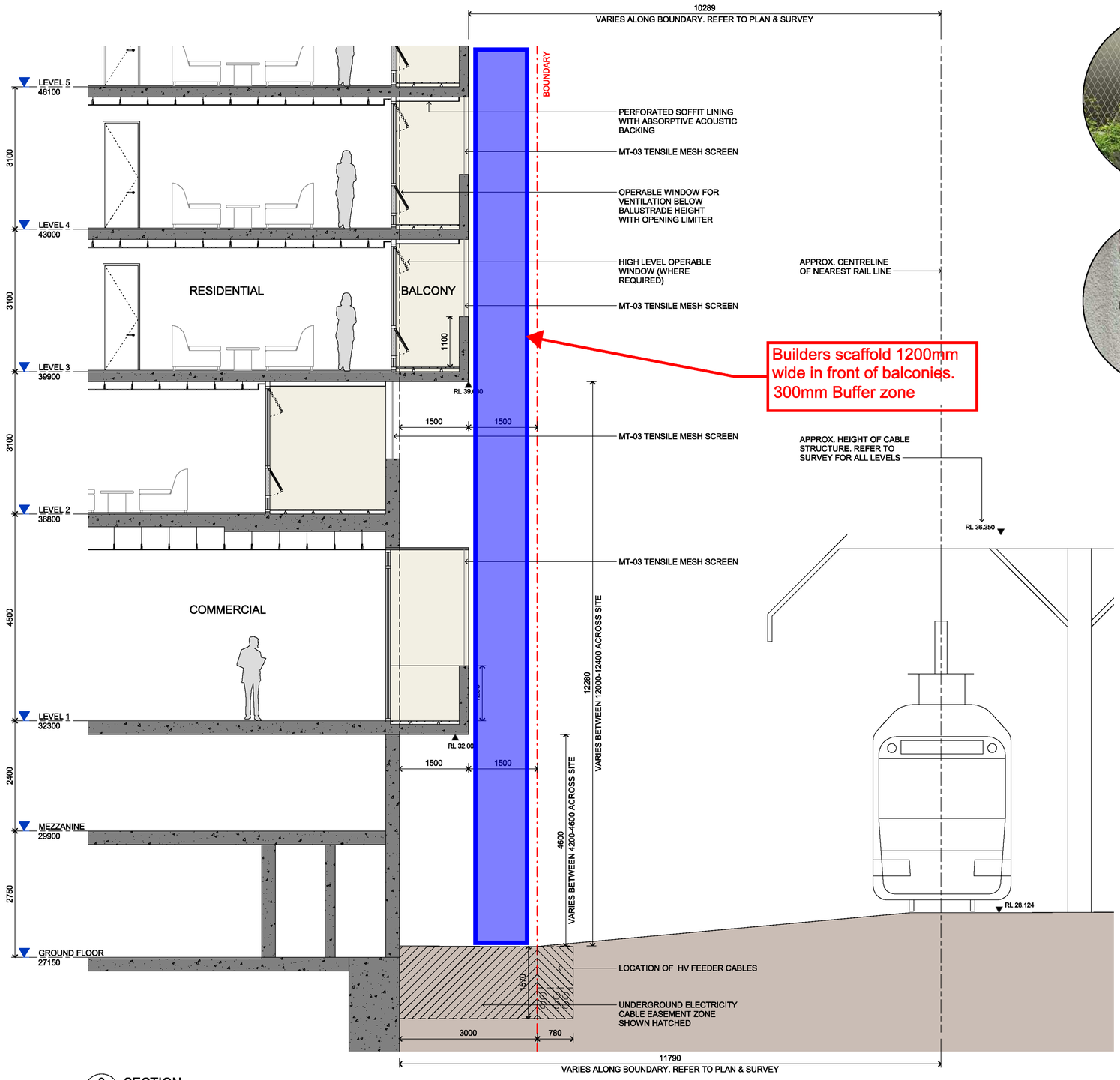


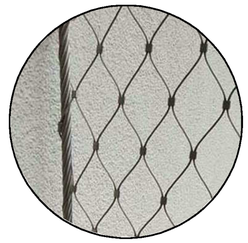
1 / A-1004 PLAN
LEVEL 1 - EASEMENT ENCROACHMENT PLAN - BALCONY DESIGN
SCALE 1 : 50



2 / A-1006 PLAN
LEVEL 3-9 - EASEMENT ENCROACHMENT PLAN - BALCONY DESIGN
SCALE 1 : 50



3 / A-1402 SECTION
DETAIL SECTION - SOUTH FACADE
SCALE 1 : 50



MT-03
TENSILE MESH SCREEN

DRAFT

0 1 2 5m
1:100 @A1

Rev	Date	Revision	By	Chk.
1	18.10.2022	FOR COORDINATION	DC	WG

Client
URBAN PROPERTY

Project
6626
160-172 LORD SHEFFIELD CIRCUIT
PENRITH
DEVELOPMENT APPLICATION

Drawing Name
BUILDERS SCAFFOLD SECTION

Date	Scale	Sheet Size
18.10.2022	1 : 50	@ A1
Drawn	Chk.	Job No.
MF	DC	6626
Drawing No.		Revision
SK-003		/ 1

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